

BEFORE THE PUBLIC SERVICE COMMISSION

STATE OF MISSOURI

TRANSCRIPT OF PROCEEDINGS

Evidentiary Hearing

Thursday, June 8, 2023
8:35 a.m. - 5:08 p.m.

Missouri Public Service Commission
200 Madison Street
Governor Office Building Room 310
Jefferson City, MO 65101
and WebEx

VOLUME 12
Pages 853 - 1114

In the Matter of the Application)
of Grain Belt Express LLC for an)
Amendment to its Certificate of)
Convenience and Necessity) File No.
Authorizing it to Construct, Own,) EA-2023-0017
Operate, Control, Manage, and)
Maintain a High Voltage, Direct)
Current Transmission Line and)
Associated Converter Station)

NANCY DIPPELL, Presiding
CHIEF REGULATORY LAW JUDGE

SCOTT T. RUPP, Chairman
MAIDA J. COLEMAN
JASON R. HOLSMAN
GLEN KOLKMEYER
DR. KAYLA HAHN,

COMMISSIONERS

Stenographically Reported By:
Beverly Jean Bentch, RPR, CCR No. 640

Job No. 146200

1 APPEARANCES:

2 On behalf of Grain Belt Express, LLC:

3 Polsinelli
4 900 West 48th Place, Suite 900
5 Kansas City, MO 64112-1895

6 BY: ANNE E. CALLENBACH, ESQ.
7 ANDREW O. SCHULTE, ESQ.
8 SEAN PLUTA, ESQ.
9 JARED JEVONS, ESQ.
10 acallenbach@polsinelli.com
11 aschulte@polsinelli.com
12 spluta@polsinelli.com
13 Jjevons@polsinelli.com

14 On behalf of the Staff of the
15 Public Service Commission:

16 Public Service Commission
17 200 Madison Street, Suite 800
18 P.O. Box 360
19 Jefferson City, MO 65102

20 BY: TRAVIS PRINGLE, ESQ.
21 travis.pringle@psc.mo.gov

22 On behalf of Clean Grid Alliance:

23 Clean Grid Alliance
24 PO Box 4072
25 Wheaton, IL 60189-4072

BY: SEAN BRADY, ESQ.
sbrady@cleangridalliance.org

and

BY: JUDITH A. WILLIS, ESQ. (Local counsel)
jaw@anniewillislaw.com

On behalf of Dustin Hudson, Gary and Carol Riedel,
Missouri Landowners Alliance, Eastern Missouri
Landowners Alliance, and Norman Fishel:

485 Oak Field Court
Washington, MO 63090

BY: PAUL AGATHEN, ESQ.
paa0408@aol.com

1 APPEARANCES: (Continued)

2 On behalf of the Missouri Electric Commission:

3 Healy Law Offices
4 3010 East Battlefield, Suite A
5 Springfield, MO 65804

6 BY: PEGGY A. WHIPPLE, ESQ.
7 ALEX RILEY, ESQ.
8 peggy@healylawoffices.com
9 alex@healylawoffices.com

10 On behalf of Renew Missouri:

11 Renew Missouri
12 PO Box 413071
13 Kansas City, MO 64141

14 BY: ALISSA GREENWALD, ESQ. (WebEx)
15 alissa@renewmo.org

16 On behalf of the Sierra Club:

17 Great Rivers Environmental Law Center
18 319 N. 4th Street, Suite 800
19 St. Louis, MO 63102

20 BY: SARAH W. RUBENSTEIN, ESQ. (WebEx)
21 ETHAN THOMPSON, ESQ. (WebEx)
22 srubenstein@greatriverslaw.org
23 ethompson@greatriverslaw.org

24 On behalf of the Office of the Public Counsel:

25 200 Madison Street, Suite 650
PO Box 2230
Jefferson City, MO 65102

BY: NATHAN WILLIAMS, ESQ.
Nathan.Williams@opc.mo.gov

On behalf of Missouri Cattlemen's Association, Missouri
Corn Growers Association, Missouri Farm Bureau, Missouri
Pork Association, Missouri Soybean Association:

827 East Broadway
Suite B
Columbia, MO 65201

BY: BRENT E. HADEN
brent@showmelaw.com

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

APPEARANCES: (Continued)

On behalf of Associated Industries of Missouri:

ELLINGER & ASSOCIATES, LLC
308 East High Street, Suite 300
Jefferson City, MO 65101

BY: MARC H. ELLINGER, ESQ.
mellinger@ellingerlaw.com

Also Present:

WILLIAM W. HOLLANDER
114 South Laclede Station Road
St. Louis, MO 63119
ahollander@wionhollander.com

PATRICIA STEMME
12601 E. Remie Road
Centralia, MO 65240
pstemme56@gmail.com

1 The following proceedings began at 8:35 a.m.:

2 JUDGE DIPPELL: We can go ahead then and go on
3 the record. Good morning. This is June 8, 2023. It is
4 Thursday. And we are here for another day of the
5 EA-2023-0017 hearing. And we left off with Staff's
6 witnesses. And the next witness has already taken his
7 place and so I will swear him in. Do you solemnly swear
8 or affirm that the testimony you're about to give at
9 this hearing will be the truth?

10 THE WITNESS: I do.

11 JUDGE DIPPELL: Thank you. If you could spell
12 your name for the court reporter.

13 THE WITNESS: Alan Bax, first name Alan,
14 A-l-a-n, last name Bax, B-a-x.

15 JUDGE DIPPELL: You're going to have to pull
16 that mike down just a little. There you go. And you
17 can go ahead, Mr. Pringle, when you are ready.

18 MR. PRINGLE: Thank you, Judge. Good morning,
19 Mr. Bax.

20 THE WITNESS: Good morning.

21 ALAN BAX,
22 having been first duly sworn, was examined and testified
23 as follows:

24 DIRECT EXAMINATION

25 BY MR. PRINGLE:

1 Q. By who are you employed and in what capacity?

2 A. I'm an Engineer employed in the Engineering
3 Analysis Department of the Industrial Analysis Division
4 of the Missouri Public Service Commission.

5 Q. And did you contribute to Staff's Report in
6 this case which has been previously marked as Exhibit
7 109?

8 A. Yes.

9 Q. Did you submit rebuttal testimony in this case
10 which has been previously marked as Exhibit 100?

11 A. Yes.

12 Q. At this time, do you have any corrections to
13 make to the Staff Report or your rebuttal testimony?

14 A. I do not.

15 Q. If I asked you the same questions today within
16 your rebuttal testimony, would your answers be the same?

17 A. Yes.

18 Q. Are those answers true and correct to the best
19 of your knowledge and belief?

20 A. Yes.

21 MR. PRINGLE: Thank you, Mr. Bax. Judge, at
22 this time I offer Exhibit 100 into the record.

23 JUDGE DIPPELL: Would there be any objection
24 to Exhibit 100? Seeing none, I will admit Exhibit 100.

25 (STAFF'S EXHIBIT 100 WAS RECEIVED INTO

1 EVIDENCE AND MADE A PART OF THIS RECORD.)

2 MR. PRINGLE: Thank you, Judge. At this time
3 I tender Mr. Bax for cross-examination.

4 JUDGE DIPPELL: I'm sorry. Hang on just a
5 minute. All right. Is there cross-examination from
6 MLA?

7 MR. AGATHEN: No questions, Your Honor.

8 JUDGE DIPPELL: Agriculture Associations.

9 MR. HADEN: No questions, Judge.

10 JUDGE DIPPELL: Is Mr. Hollander here this
11 morning?

12 MS. STEMME: No.

13 JUDGE DIPPELL: Ms. Stemme.

14 MS. STEMME: No questions.

15 JUDGE DIPPELL: Public Counsel.

16 MR. WILLIAMS: Thank you, no.

17 JUDGE DIPPELL: Associated Industries.

18 MR. ELLINGER: No questions, Judge. Thank
19 you.

20 JUDGE DIPPELL: I haven't checked if our other
21 attorneys are actually online. Sierra Club.

22 MS. RUBENSTEIN: Yes, we don't have any
23 questions. Thank you, Your Honor.

24 JUDGE DIPPELL: Renew Missouri.

25 MS. GREENWALD: No questions. Thank you.

1 JUDGE DIPPELL: Clean Grid Alliance.

2 MR. BRADY: No questions. Thank you.

3 JUDGE DIPPELL: MEC.

4 MS. WHIPPLE: No, Your Honor. Thank you.

5 JUDGE DIPPELL: And Grain Belt.

6 MR. SCHULTE: No questions. Thank you.

7 JUDGE DIPPELL: All right. Are there any
8 Commission questions?

9 COMMISSIONER HOLSMAN: No questions, Judge.
10 Thank you.

11 JUDGE DIPPELL: Thank you, Commissioner
12 Holsman.

13 JUDGE DIPPELL: All right. I've got just a
14 couple here.

15 QUESTIONS

16 BY JUDGE DIPPELL:

17 Q. Okay. In Mr. Rodriguez's surrebuttal on pages
18 9 to 10, he responds to some of the concerns that you
19 raised about interconnection costs in your rebuttal.
20 Did his response address your concerns?

21 A. Well, Mr. Rodriguez, as I recall, testifies
22 that Ameren Missouri customers are not going to be
23 assessed; that Invenergy was going to be paying for the
24 -- Invenergy may be paying for perhaps the bulk of the
25 interconnection costs for which I was referring to, but

1 yeah, given that I'm not -- I'm not totally comfortable
2 with that statement that Ameren Missouri customers would
3 not be allocated any -- none of the costs associated
4 with the MISO, what the needed system improvements that
5 MISO would require.

6 Q. So you reviewed those interconnection costs to
7 see if, or did you review those interconnection costs to
8 see if they were included in the Project costs?

9 A. Well, I think Mr. Rodriguez had mentioned
10 studies H104, H105 approximately \$300 million, but those
11 haven't been -- yeah, MISO is -- he also said that MISO
12 was reviewing a possible transmission connection
13 agreement with them. So that's an outstanding evolution
14 let's say.

15 Q. So those costs in MISO haven't yet been
16 determined and so they're not included?

17 A. Right, not officially.

18 Q. In Mr. White's surrebuttal on page 4 he
19 responded to your request in your rebuttal that the
20 Commission require Grain Belt to provide as-built plans.
21 And is his response that Grain Belt would be open to
22 providing this information provided it's consistent with
23 20 CSR 4240-20.045(5) satisfactory?

24 A. My understanding was Mr. White was willing to
25 provide the Commission with as-built drawings after the

1 Project became operational, was energized. I had
2 suggested that the Commission in view that the CCN rule
3 requires that drawings be provided with the application,
4 and drawings were provided with the applications that
5 were identified as preliminary, and there's been
6 testimony that says that they're working on these --
7 they're working on the drawings for the HVDC line, the
8 converter station, the Tiger Connector, so forth, as
9 those and presuming that the construction will be -- the
10 construction personnel will be handed drawings prior to
11 the beginning of such that I suggested that in addition
12 to the as-built afterwards that these drawings as they
13 become finalized that are presumably going to be
14 available to construction be provided, a set of those
15 drawings also be provided to the Commission at that
16 time.

17 Q. And did he respond to the request to have them
18 basically as you go?

19 A. Yeah. There seemed to be some confusion as to
20 what exactly I was requesting. And in attempting to
21 what I was requesting was that as drawings are finalized
22 in regard to Project construction installation that
23 those drawings in the beginning that would be provided
24 to the construction personnel would also be provided to
25 the Commission in addition and then after the in

1 addition to the as-built drawings after the Project
2 becomes operational.

3 Q. And so is Staff asking the Commission to
4 include that as a --

5 A. As a condition to the, yes.

6 Q. Okay. Just wanted to make sure I had that
7 clear, the timing. Also in Mr. White's surrebuttal on
8 pages 4 to 5 he responded to concerns you raised about
9 bidirectional operation, and did that response address
10 Staff's concerns?

11 A. For the most part, yes.

12 JUDGE DIPPELL: Okay. All right. That is all
13 the questions that I had. Would there be any further
14 cross-examination based on my questions from MLA?

15 MR. AGATHEN: No, Your Honor.

16 JUDGE DIPPELL: Ag Associations.

17 MR. HADEN: No, Judge.

18 JUDGE DIPPELL: Ms. Stemme.

19 MS. STEMME: No questions.

20 JUDGE DIPPELL: Public Counsel.

21 MR. WILLIAMS: Thank you, no.

22 JUDGE DIPPELL: Associated Industries.

23 MR. ELLINGER: No questions, Judge. Thank
24 you.

25 JUDGE DIPPELL: Sierra Club.

1 MS. RUBENSTEIN: No, thank you.

2 JUDGE DIPPELL: Renew Missouri.

3 MS. GREENWALD: No, thank you.

4 JUDGE DIPPELL: Clean Grid Alliance.

5 MR. BRADY: No, thank you.

6 JUDGE DIPPELL: MEC.

7 MS. WHIPPLE: No, Your Honor. Thank you.

8 JUDGE DIPPELL: Grain Belt.

9 MS. CALLENBACH: Just a couple, Judge. Thank
10 you. Good morning, Mr. Bax.

11 THE WITNESS: Good morning.

12 CROSS-EXAMINATION

13 BY MS. CALLENBACH:

14 Q. Did I hear you say just a minute ago in
15 response to the Judge's questions that you're not
16 comfortable with Mr. Rodriguez's statement that Ameren
17 won't be allocated any upgrade costs?

18 A. Yes.

19 Q. Have you reviewed Mr. Rodriguez's surrebuttal
20 testimony?

21 A. I've read it, yes.

22 Q. So you're aware that on page 9 of his
23 surrebuttal he discusses the fact that the MISO's tariff
24 is very clear that Grain Belt will be responsible for
25 all those costs?

1 A. Yes, I read that.

2 Q. Do you have any reason to disagree with that?

3 A. That's just my understanding of the applicable
4 MISO tariffs in regard to Projects of this nature.

5 Q. Okay.

6 A. That they would not be assessed any costs
7 associated with this.

8 Q. So you've not identified any costs, you know,
9 with specific dollar amounts that you believe will be
10 allocated to Ameren?

11 A. I have not.

12 Q. And is it customary for certain costs to be
13 allocated to a transmission customer?

14 A. That's my understanding, yes.

15 Q. Just a minute, Judge. Mr. Bax, just one more
16 clarifying question. On page 6, line 12 of your
17 rebuttal testimony in response to Grain Belt witness
18 Aaron White, you recommend that the Company provide
19 as-built drawings as they become available. Is that an
20 accurate reading of your testimony?

21 A. Yes.

22 Q. Okay. Thank you. I believe you just said on
23 the stand that you would like as-built drawings as they
24 become final in advance of construction. Is it as they
25 become available or as they become final in advance of

1 construction?

2 A. As they are -- as the Company, if you will,
3 finalizes contextual drawings that are provided to --
4 that are presumably going to be provided to the
5 construction personnel in advance of installation that
6 such drawings would also be copied to the Commission.
7 In using the Company's words, if you will, since they
8 identified the drawings to the application as
9 preliminary, these would be the preliminary as-built
10 drawings that would be updated after the fact after the
11 Project becomes operational.

12 MS. CALLENBACH: Okay. All right. Thanks. I
13 appreciate that clarification. I have nothing else,
14 Judge.

15 JUDGE DIPPELL: Thank you. Is there any
16 redirect?

17 MR. PRINGLE: Yes, Judge. Very brief.

18 REDIRECT EXAMINATION

19 BY MR. PRINGLE:

20 Q. Mr. Bax, Judge Dippell asked you a few
21 questions about bidirectional flow?

22 A. Yes.

23 Q. Are you aware what are incremental costs?

24 A. I am. Incremental costs would be costs that
25 are -- they're talking about additional costs in the

1 case of bidirectional whether the Project was going to
2 include the incremental costs associated that would
3 enable bidirectional flow.

4 Q. And are there any incremental costs associated
5 with this application today?

6 A. No.

7 Q. Would there be incremental costs with
8 bidirectional flow?

9 A. Yes.

10 MR. PRINGLE: Thank you, Mr. Bax. No further
11 questions.

12 JUDGE DIPPELL: Thank you. Thank you, Mr.
13 Bax. That completes your testimony.

14 THE WITNESS: Thank you, Judge.

15 (Witness excused.)

16 JUDGE DIPPELL: Would Staff like to call its
17 next witness?

18 MR. PRINGLE: Yes, Judge. Staff calls Michael
19 Rush.

20 JUDGE DIPPELL: Would you please raise your
21 right hand. Do you solemnly swear or affirm that the
22 testimony you're about to give at this hearing will be
23 the truth?

24 THE WITNESS: I do.

25 JUDGE DIPPELL: Thank you. Go ahead.

1 MR. PRINGLE: Thank you, Judge. Good morning,
2 Mr. Rush.

3 THE WITNESS: Good morning.

4 MICHAEL RUSH,
5 having been first duly sworn, was examined and testified
6 as follows:

7 DIRECT EXAMINATION

8 BY MR. PRINGLE:

9 Q. Could you please state and spell your name for
10 the record?

11 A. It's Michael Rush, M-i-c-h-a-e-l R-u-s-h.

12 Q. Mr. Rush, by who are you employed and in what
13 capacity?

14 A. The Missouri Public Service Commission as
15 Critical Infrastructure Security Engineer.

16 Q. Did you contribute to Staff's Report in this
17 case which has been previously marked as Exhibit 109?

18 A. Yes.

19 Q. Did you submit rebuttal testimony in this case
20 which has been previously marked as Exhibit 106?

21 A. Yes.

22 Q. At this time, do you have any corrections to
23 make to your contributions to the Staff Report or your
24 rebuttal testimony?

25 A. No.

1 Q. If I asked you the same questions today within
2 your rebuttal testimony, would your answers be the same
3 or substantially the same?

4 A. Yes.

5 Q. Are those answers true and correct to the best
6 of your knowledge and belief?

7 A. Yes.

8 MR. PRINGLE: Thank you, Mr. Rush. At this
9 time I offer Exhibit 106 into the record.

10 JUDGE DIPPELL: Would there be any objection
11 to Exhibit 106? Seeing none, I will admit that.

12 (STAFF'S EXHIBIT 106 WAS RECEIVED INTO
13 EVIDENCE AND MADE A PART OF THIS RECORD.)

14 MR. PRINGLE: Thank you, Judge. At this time
15 I tender Mr. Rush for cross-examination.

16 JUDGE DIPPELL: And I'm just going to ask
17 generally is there going to be cross-examination for Mr.
18 Rush? Seeing none. I will ask if there is any
19 Commission questions? Mr. Chairman.

20 CHAIRMAN RUPP: No.

21 COMMISSIONER HOLSMAN: Judge.

22 JUDGE DIPPELL: Yes. Commissioner Holsman,
23 you had a question.

24 COMMISSIONER HOLSMAN: I just have a couple
25 brief questions for him.

1 JUDGE DIPPELL: Go right ahead.

2 COMMISSIONER HOLSMAN: Okay. Thank you. Good
3 morning, Mr. Rush.

4 THE WITNESS: Good morning.

5 QUESTIONS

6 BY COMMISSIONER HOLSMAN:

7 Q. We heard from a witness Monken from the
8 National Security Organization. In his testimony he
9 indicated that the existence of Grain Belt would improve
10 national security, improve the safety of Missouri
11 citizens, and let's start there. Do you agree with
12 those two statements that the existence of this Project
13 would improve national security and improve safety of
14 Missouri citizens?

15 A. I would like to start by talking about what
16 national security is. And the Federal Code of
17 Regulations has a definition and that definition is,
18 I'll read it right here, refers to those activities
19 which are directly concerned with foreign relations of
20 the United States, protection of the nation from
21 internal subversion, foreign aggression or terrorism.
22 So while I would agree that critical infrastructure such
23 as the electric grid is necessary to support national
24 security, this particular line while it may as it gets
25 included in critical infrastructure become part of

1 national security, it as an individual Project doesn't
2 necessarily make it a matter of national security.

3 Q. Okay. Do you believe that the ability to flow
4 bidirectional would improve the security of Missouri
5 residents for natural disasters and extreme weather
6 events?

7 A. As it's necessary to move power from one place
8 to another, if an infrastructure or piece of
9 infrastructure were able to move power from one place to
10 another to support the grid in either end or both ends,
11 that would increase the stability of the grid and
12 therefore as a functioning piece of equipment would
13 increase the national security of the United States,
14 yes.

15 Q. Would the addition of the second
16 interconnection point with AECI enhance or improve the
17 reliability and resiliency, mission assurance
18 requirements and continuity of operations of Missouri's
19 military installations such as Fort Leonard Wood or
20 Whiteman?

21 A. So when you say the -- You're talking about
22 the Tiger Connector change from one place to the other?

23 Q. Yes.

24 A. I will say that I have not investigated
25 whether or not a particular change in the Grain Belt

1 line would better support the grid in any particular
2 fashion. That would be more appropriate for other Staff
3 witnesses to evaluate the effect of the change. My
4 position is that as an individual Project, what I think
5 that the decision on whether or not the Grain Belt is an
6 appropriate Project would be better suited for topics
7 such as is it going to do those things and that's not
8 part of my testimony.

9 Q. Okay. Last question. Monken witness
10 testified that the existence of the Grain Belt Project
11 would improve our standing for the BRAC. Do you agree
12 that this Project would impact the BRAC process in any
13 way?

14 A. I am unsure of an answer to that question.

15 COMMISSIONER HOLSMAN: Okay. That's all the
16 questions I have, Judge. Thank you.

17 JUDGE DIPPELL: Thank you, Commissioner. Are
18 there any other Commission questions? Seeing none. Is
19 there further cross-examination based on Commission
20 questions? And again I'll just kind of ask generally.
21 I'm not seeing any responses to the affirmative. So is
22 there redirect from Staff?

23 MR. PRINGLE: No redirect, Judge. Thank you.

24 JUDGE DIPPELL: Thank you, Mr. Rush. Your
25 testimony is concluded. You may be excused.

1 THE WITNESS: Thank you.

2 (Witness excused.)

3 JUDGE DIPPELL: Staff may call its next
4 witness.

5 MR. PRINGLE: Thank you, Judge. Staff calls
6 Michael Stahlman to the stand.

7 JUDGE DIPPELL: Do you solemnly swear or
8 affirm that the testimony you're about to give at this
9 hearing will be the truth?

10 THE WITNESS: I do.

11 JUDGE DIPPELL: Thank you. If you'd spell
12 your name for the court reporter.

13 THE WITNESS: Michael L. Stahlman,
14 S-t-a-h-l-m-a-n.

15 JUDGE DIPPELL: And Mr. Pringle, you may go
16 ahead.

17 MR. PRINGLE: Thank you, Judge. Good morning,
18 Mr. Stahlman.

19 THE WITNESS: Good morning.

20 MICHAEL STAHLMAN,
21 having been first duly sworn, was examined and testified
22 as follows:

23 DIRECT EXAMINATION

24 BY MR. PRINGLE:

25 Q. By who are you employed and in what capacity?

1 A. The Missouri Public Service Commission as a
2 Regulatory Economist.

3 Q. And did you sponsor Staff's Report in this
4 case which has been previously marked as Exhibit 109?

5 A. Yes.

6 Q. Did you submit rebuttal testimony in this case
7 which has been previously marked as Exhibit 107?

8 A. Yes.

9 Q. At this time do you have any corrections to
10 make to the Staff Report or your rebuttal testimony?

11 A. To the Staff Report, yes, and this was based
12 on the corrections of other witnesses. So on page 7
13 it's the third paragraph from the bottom where we're
14 referring to Staff witness Cedric Cunigan's
15 recommendation and the second to last line of that, I'll
16 just read it aloud. That the Commission should
17 condition any approval on all relevant permits and
18 Missouri specific environmental studies being approved
19 -- and I hate to say I was not present for Claire
20 Eubanks' testimony last night.

21 Q. Those corrections were made to the Staff
22 Report already.

23 A. Okay. Thank you.

24 Q. Do you have any further corrections or
25 additions to the Staff Report or your rebuttal

1 testimony?

2 A. Not that I'm aware of.

3 Q. If I asked you the same questions within your
4 rebuttal testimony today, would your answers remain the
5 same or substantially the same?

6 A. Yes.

7 Q. Are those answers true and correct to the best
8 of your knowledge and belief?

9 A. Yes.

10 MR. PRINGLE: Thank you, Mr. Stahlman. At
11 this time I offer Exhibits 107 and 109 into the record.

12 JUDGE DIPPELL: Would there be any objection
13 to Exhibits 107 or 109? Seeing none, I will admit those
14 into the record.

15 (STAFF EXHIBITS 107 AND 109 WERE RECEIVED INTO
16 EVIDENCE AND MADE A PART OF THIS RECORD.)

17 MR. PRINGLE: Thank you, Judge. At this time
18 I tender Mr. Stahlman for cross-examination.

19 JUDGE DIPPELL: And is there cross-examination
20 for this witness? I see Grain Belt has
21 cross-examination. All right. No one else, so we'll go
22 straight to Grain Belt.

23 MR. SCHULTE: Thank you, Judge. Good morning,
24 Mr. Stahlman.

25 THE WITNESS: Good morning.

CROSS-EXAMINATION

1

2 BY MR. SCHULTE:

3 Q. Could you please turn to page 3 of your
4 rebuttal testimony?

5 A. Okay.

6 Q. At lines 12 through 13 there is a question
7 about RTO interconnection studies that were at issue in
8 EA-2016-0358. Do you see that question?

9 A. Yes.

10 Q. And in Case No. EA-2016-0358, the proposed
11 configuration of the Grain Belt Express Project included
12 a 500 MW interconnection at the Maywood Substation in
13 Ralls County. Is that an accurate statement of the
14 proposal at that time?

15 A. With the interconnection being 500. I think
16 the converter station may have actually been designed to
17 go up to a thousand MW and some change for losses and
18 things like that.

19 Q. And that was also in Ralls County?

20 A. Yes.

21 Q. At lines 14 through 15 on the same page, you
22 state that Invenergy withdrew from those studies?

23 A. Yes.

24 Q. By "those studies," are you referring to the
25 studies for the 500 MW interconnection in Ralls County?

1 A. Yes. That was in the initial study for that
2 converter station, yes.

3 Q. And the next sentence says the lack of studies
4 and interconnection agreement. When you say "lack of
5 studies," are you referring to the studies to evaluate
6 the cost of interconnecting at the Maywood Substation in
7 Ralls County?

8 A. At this point, it still is largely unclear.
9 There's actually a series, I think, as Shawn, Staff
10 witness Shawn Lange testified, I think there's four
11 studies. There's a couple that I think were done, but
12 there still remains to be other studies are finished,
13 and there's kind of an important distinction here too.
14 Since with the initial case there's only one study for
15 the entire converter station but now we have four
16 studies and so there's going to be a question on which
17 combination of studies might actually just get a
18 transmission or interconnection agreement. And that's
19 also been brought up by some of the transmission owners
20 in the MISO/FERC complaint that Grain Belt raised, and
21 the response is that there was concern on what is the
22 actual final design going to be, is it going to be the
23 full 2500 MW or is it going to be some other level.

24 Q. The question at lines 12 through 13 of your
25 rebuttal testimony are referring to the RTO

1 interconnection studies in EA-2016-0358, right, we
2 covered that already?

3 A. Yes. In the subsequent line here, line 15
4 through 16, I say that it still remains a large concern.

5 Q. Okay. So the lack of studies. Did you
6 identify specific studies relevant to the currently
7 proposed interconnections with AECI and MISO in Callaway
8 County that are outstanding?

9 A. As I recall from discussion with Staff witness
10 Shawn Lange, there were I think it was two or three
11 studies that have come to completion of the various
12 studies there now. None of those have an
13 interconnection agreement yet and there is still one or
14 two that have yet to be finalized.

15 Q. One or two studies for MISO or for AECI?

16 A. I think this is MISO specific.

17 Q. Do you know if it's one or two?

18 A. I think it's one but I'm not positive.

19 Q. Did you review the surrebuttal testimony of
20 Carlos Rodriguez?

21 A. Briefly, yes.

22 Q. At page 8, lines 6 through 8 of that
23 surrebuttal testimony. I'm just going to give you a
24 brief quote but I can give you a copy, if you'd like.

25 A. If I may have a copy.

1 MR. PRINGLE: Yes, please.

2 THE WITNESS: And can you repeat the page and
3 line so I can read the context, please.

4 BY MR. SCHULTE:

5 Q. Yes. So at page 8 -- sorry. I need to grab
6 my copy.

7 A. Don't have your copy?

8 Q. It's not a problem. I have an electronic
9 copy. Okay. Now I'm there as well. Beginning at line
10 3, there is a reference to Staff witness Shawn Lange's
11 rebuttal testimony and the concern about interconnection
12 studies not yet having been completed. There's an
13 answer beginning on line 6 that states based on the
14 current status of the interconnection process and the
15 different RTOs and AECI, most of the interconnection
16 upgrade costs for Phase I of the Project (Kansas to
17 Missouri) are final at this time. Do you see that?

18 A. Yes.

19 Q. Do you have any specific reason to doubt or
20 contest that conclusion by Mr. Rodriguez?

21 A. No, because it is qualified. It has current
22 status of the process and most of the interconnection
23 upgrade cost. As I mentioned earlier, a lot of this
24 also goes to that there's multiple studies at this time.
25 So instead of just having the option of one particular

1 study, which we know what that is going to be, there's
2 kind of a choice that Grain Belt could interconnect some
3 of those levels but not all of them.

4 Q. Is your concern -- You said that there's a
5 concern that Grain Belt could connect to some of those
6 levels, not all of them. Are you referring to a choice
7 by Grain Belt to rather than go forward with a 1500 MW
8 interconnection at MISO they could potentially do
9 something less?

10 A. I do think that is an important factor. So
11 when I'm looking at the economic feasibility -- so when
12 we had discussions, so Ms. Shine provided a schedule in
13 her surrebuttal that included like revenue values. All
14 those revenue values were hard coded. So I could not
15 really reliably assess if that was how reasonable those
16 assumptions are. Based on her testimony, I can't
17 remember if it was Monday or Tuesday, there was
18 questions on what was behind that from us, and what was
19 developed there was that it was the full 2500 MW
20 injection. At least that's my understanding based on
21 her testimony.

22 So when you have these multiple
23 interconnection agreements, any change to this full 2500
24 injection, if it goes down that is going to potentially
25 reduce the revenues that Ms. Shine relied on in her

1 Phase I only study that she provided in that. And the
2 converse, if for some reason it was to go up, it would
3 also challenge the interconnection cost because that
4 hasn't been a part of their study. So there's concern
5 on what the final arrangement is going to be. That I
6 would add is strangely parallel to what we see with the
7 concerns expressed by MISO and the MISO transmission
8 owners in the FERC complaint case, which that number was
9 EL2283-000.

10 Q. I'll circle back to that last part. Regarding
11 your concern about a decrease in the MISO or the AECI
12 interconnection, are you the Staff witness that supports
13 the recommendation to define material change as a change
14 in the injection?

15 A. Yes. That was one of the conditions I
16 recommended.

17 Q. So with regard to that concern, does that --
18 and I believe Mr. Rodriguez has testified that a change
19 in injection from the currently proposed levels in MISO
20 and AECI that he considers that to be a material change.
21 Does that mitigate Staff's concern?

22 A. Can you repeat the question.

23 Q. If there is an agreement that a change in
24 injection in MISO or AECI is a material change that
25 would trigger further approvals needed from the

1 Commission, does that mitigate your concern on that
2 point?

3 A. I'm not sure that he actually -- From what I
4 recall in testimony, he was willing to say that an
5 increase in injection or converter station size would
6 mitigate further approval from the Commission. I do not
7 believe he ever assented to a potential decrease in the
8 injections. As I'm saying that the decrease can affect
9 one of the economic feasibility Tartan criteria because
10 of the revenues assumed.

11 Q. Okay. Understood.

12 A. And just to clarify, too. I'm not
13 specifically tied to 100 as in my testimony. I was just
14 trying to put that out as a starting point. If there
15 was a reasonable value that Grain Belt and Staff could
16 agree on, I think we would be amenable to that
17 discussion, but I'm not sure how much of that discussion
18 would be possible at this point.

19 Q. Okay. While we're on the subject of the
20 definition of material change, did you hear Mr.
21 Rodriguez's testimony, I don't know what day of the week
22 it is, they've all blurred together, but were you here
23 for Mr. Rodriguez's live testimony?

24 A. I'm pretty sure. I was here for I'm pretty
25 sure most of it at least.

1 Q. And this is actually also in his prefiled
2 testimony in his surrebuttal, and since you have a copy
3 we can turn there to page 15.

4 A. Can you tell me the tab because I closed the
5 folder back.

6 Q. Sure. I think it's 4. Okay.

7 A. Which page? 15 you said?

8 Q. Yes, sir.

9 A. Okay.

10 Q. At line 14, and so you would agree, right,
11 that our discussion thus far has been about injection
12 whether it increase or decrease but we're talking about
13 injection, right?

14 A. I've been mentioning both injection and a
15 change in, yeah, the change in injection. I haven't
16 specifically talked about the withdrawal.

17 Q. I'm trying to draw a distinction there. I'd
18 like to move to withdrawal now.

19 A. Okay.

20 Q. Carlos Rodriguez testifies with regard to
21 withdrawal rights, since those are obtained via
22 transmission service, as long as the withdrawal amount
23 remains within the Project's technical capability as
24 reflected in its interconnection agreements with AECI
25 and/or MISO, it should not be a material change. And

1 then I think Mr. Rodriguez expanded on that in live
2 testimony stating that there would be no change to the
3 facilities required for withdrawal rights. Do you have
4 any reason to contest that testimony?

5 A. No, it's more that when Grain Belt is
6 referring to their line as bidirectional, it kind of
7 goes to how precise we are understanding those terms.
8 So I guess an analogy would be that if I was to purchase
9 a car from some dealership and he could guarantee me
10 that this car would be able to go 120 miles an hour
11 between St. Louis and Kansas City. That may be accurate
12 but there's also some gentlemen in Smokey Bear hats that
13 would limit me on how much I could actually obtain that.
14 And so here again, with MISO they are regulating how
15 much it is.

16 So what I was trying to point out is with the
17 withdrawal rights that MISO has stated, and I think it
18 was also in that FERC complaint on bidirectionality,
19 that if you were to actually request withdrawal rights
20 you would need to do further studies which would
21 increase the -- be a significant increase in the
22 investment required by Grain Belt Express. I would not
23 contest that outside of that all those costs be borne by
24 whichever person would want to withdraw and inject into
25 PJM or SPP. And also with SPP there's currently --

1 Grain Belt's injection is at zero. There's assumed to
2 be no interconnection essentially with SPP except for, I
3 think, emergency cases. And so that person that wants
4 to inject into SPP would also be responsible for
5 shouldering those costs.

6 Q. Have you investigated the studies required for
7 withdrawal?

8 A. I think there was one in PJM and that's about
9 all that I'm aware of, and I didn't look closely at it.

10 Q. Are you -- Do you have any reason to expect
11 system upgrade costs for withdrawal rights?

12 A. Based on the MISO, the complaint that Grain
13 Belt initiated with MISO at FERC, MISO said there would
14 be a significant increase in costs. So I have no reason
15 to dispute what they said in that document.

16 Q. In the FERC complaint case docket?

17 A. Yes.

18 Q. But you didn't independently investigate
19 whether that statement was accurate?

20 A. I've generally found MISO to be fairly
21 reliable in their statements.

22 Q. Based on what?

23 A. Experience and MISO is pretty much in charge
24 of the transmission.

25 Q. Is it your testimony that because MISO said

1 it, it is true?

2 A. I find MISO to be very reliable, yes, as a
3 witness.

4 Q. In all cases in all circumstances?

5 A. I've heavily relied on MISO's work in other
6 transmission cases. Essentially a lot of the economic
7 feasibility analysis relies specifically on what MISO
8 determines and says about a project.

9 Q. Has a MISO decision ever been overturned by
10 FERC or by the courts?

11 A. There's lots of decisions MISO makes. So yes.
12 For the court reporter, if we haven't defined yet, MISO
13 is the Midcontinent ISO, M-I-S-O.

14 JUDGE DIPPELL: Thank you, Mr. Stahlman.

15 THE STENOGRAPHER: Can you also tell me what
16 BRAC is?

17 THE WITNESS: BRAC was base something and
18 closure. I can't remember what the R was. It was
19 B-R-A-C. I think it was reorganization.

20 JUDGE DIPPELL: The gallery is saying
21 realignment.

22 BY MR. SCHULTE:

23 Q. Mr. Stahlman, are you familiar with the MISO
24 Attachment GGG which covers the
25 transmission-to-transmission interconnections?

1 A. Loosely, yes. And I don't have a copy in
2 front of me. Normally when I testify to something that
3 specific, I have the copy so I don't misstate anything.

4 Q. Sure. And I'm not asking about the specific
5 contents of MISO Attachment GGG, but are you aware that
6 Mr. Rodriguez has testified that those MISO Attachment
7 GGG studies are complete?

8 A. I can't say I recall right offhand.

9 Q. Okay. Could you turn back to page 3 of Mr.
10 Rodriguez's surrebuttal.

11 A. I am there.

12 Q. And at Section II, which begins at line 16 and
13 then there's a question that begins at line 17, do you
14 see that Mr. Rodriguez is providing an update on MISO
15 interconnection requests?

16 A. Yes.

17 Q. And he states MISO has completed all studies
18 for the MHCP requests?

19 A. Yes.

20 Q. And all those results are final?

21 A. Yes.

22 Q. And then with regard to the injection
23 requests, which are part of DPP3 2019-Central Cluster,
24 and DPP is Definitive Planning Phase?

25 A. Correct.

1 Q. MISO has provided draft results for the system
2 impact study as of January 2023; do you see that?

3 A. Yes.

4 Q. And MISO provided a final report on March 30,
5 2023?

6 A. Yes.

7 Q. And then Mr. Rodriguez goes on to testify the
8 only MISO study pending completion at this point is the
9 facilities study, which is expected to be completed in
10 May of 2023. I believe it's now June of 2023.

11 A. Yes, I think that's consistent with prior
12 testimony and Shawn Lange's testimony.

13 Q. Is that one facility study, is that the study
14 you were referencing earlier?

15 A. I think so, yes.

16 Q. Do you have a copy of the Report and Order on
17 Remand from the 2016 case?

18 A. There's been one left here for convenience.

19 Q. Oh, it may not have the attachment. Does that
20 copy have the attachments?

21 A. Are you talking about Exhibit 205 and 206?

22 Q. 205 and 206, yes, sir.

23 A. I have copies of those myself, I think.

24 Q. If you don't, I have them as well.

25 A. I do have completed copies.

1 Q. I'm looking specifically at Exhibit 1 which is
2 also referred to as -- it's Exhibit 1 to the Report and
3 Order on Remand. During that proceeding it was
4 identified as Staff Exhibit 206.

5 A. Okay. If I may, the Exhibit 206 is conditions
6 agreed to by Grain Belt Express, Clean Line LLC and the
7 Staff of the Missouri Public Service Commission. And
8 Exhibit 205 was Grain Belt Express response to Rocky's
9 Express Pipeline LLC's first set of data requests to
10 Grain Belt Express, Clean Line LLC.

11 MR. SCHULTE: Just for the Judge, we
12 previously took administrative notice of the Report and
13 Order on Remand. My understanding of that is that it
14 would include all of the attachments to such order
15 including these attachments.

16 JUDGE DIPPELL: That is correct. And just for
17 identification purposes and to keep everything straight,
18 I have marked that Report and Order on Remand and its
19 attachments. I went ahead and gave it Exhibit 306,
20 which is an MLA number, but it's really -- that's just
21 for identification because it was proffered by both MLA
22 and sort of Grain Belt at one point. So anyway, I have
23 marked that Report and Order on Remand as Exhibit 306
24 just for future reference.

25 MR. SCHULTE: Thank you, Judge.

1 BY MR. SCHULTE:

2 Q. So we are on Exhibit 1 to the Report and Order
3 on Remand, a/k/a Staff Exhibit 206 in the 2016
4 proceeding. At the bottom of page 1 of that exhibit,
5 there is a Section II titled Interconnection Studies and
6 Safety. Do you see that?

7 A. Yes.

8 Q. And the first paragraph under that section
9 states Grain Belt will provide Staff with completed RTO
10 interconnection agreements and any associated studies.
11 Should the studies raise new issues, Grain Belt will
12 provide its plan to address those issues. Did I read
13 that correctly?

14 A. Yes.

15 Q. And that condition is still in full force and
16 effect even if the Commission grants the amendments
17 requested in this case?

18 A. That's my understanding.

19 Q. And does that -- To the extent Staff has
20 concerns, does that provision mitigate those?

21 A. Not exactly in this case. It does to some
22 extent, but I think the big difference between what we
23 examined in the prior case and the current case is I
24 don't think we anticipated there being multiple studies
25 for the same converter station in Missouri. So it was

1 essentially at the time just one converter station with
2 one study that was interconnecting with MISO only. Now
3 you have still one converter station at a different
4 location but it's interconnecting at two different
5 points. So the concern is over what the final
6 interconnection agreements are going to be, which ones
7 are the actual -- how the converter station will
8 actually operate.

9 Q. So we already established that there's one
10 study remaining in MISO which is due to be completed
11 this month, right?

12 A. Yes.

13 Q. And if you still have Carlos Rodriguez's
14 testimony with you.

15 A. Are we still on tab 4, the surrebuttal?

16 Q. Yes. We're now on page 7.

17 A. I'm there.

18 Q. And at line 17, Mr. Rodriguez provides an
19 update on the AECI interconnection agreement. Do you
20 see that?

21 A. Which line again?

22 Q. Line 17.

23 A. Okay. That's just referring to the question,
24 yes.

25 Q. Yes, line 18, the answer is the AECI

1 interconnection agreement was executed in December 2021
2 and amended in November 2022. AECI continues to
3 engineer and procure the interconnection facilities and
4 network upgrades for the interconnection of the Grain
5 Belt Project. To this date, Grain Belt has posted a
6 total of \$22,721,000 in security to AECI and paid a
7 total of \$8,019,054 in cash to cover invoices for work
8 completed. Do you see that?

9 A. Yes.

10 Q. So do you contest that the AECI
11 interconnection agreement was executed and that the work
12 is already underway?

13 A. No. What I'm concerned about is with the MISO
14 interconnection agreement. If I may, in the MISO
15 complaint cases before FERC, Grain Belt said that they
16 could not sign an interconnection agreement; that it
17 would be -- let me see if I can read it directly at
18 least.

19 Q. Are you referring to a document that is in the
20 record so I could follow along?

21 A. I'm not sure if this is directly in the
22 record. This is referring to the complaint case that
23 Grain Belt Express has put before MISO. I don't
24 think --

25 Q. We're talking about, just to be clear, we're

1 talking about the AECI interconnection agreement. My
2 question was about whether you contest Grain Belt has
3 executed an AEC interconnection agreement with, AECI,
4 and whether they have already posted security and paid
5 over \$8 million in cash for work completed. That was my
6 question.

7 A. That's with AECI.

8 Q. Yes, sir.

9 A. The concerns are also with MISO.

10 Q. I'm on AECI right now. Do you have any
11 concerns that the interconnection with AECI is
12 uncertain?

13 A. This is just -- I can't recall what the
14 interconnection agreement looks like right offhand, but
15 I think I have no -- If they say they have it signed, I
16 have no problem with that. That's fine.

17 Q. We did establish that there's one outstanding
18 study due this month for MISO. There is a provision
19 that Grain Belt will provide Staff with completed RTO
20 interconnection agreements and associated studies and
21 should those studies raise new issues, Grain Belt will
22 provide its plan to address those issues. I'm trying to
23 understand what's not covered.

24 A. It is going to what is the final
25 interconnection agreement that Grain Belt Express will

1 sign. In the MISO complaint case, they stated that
2 signing interconnection agreements -- or to execute a
3 TCA, transmission agreement, it will be a commercially
4 untenable decision because they would assume significant
5 liability.

6 Q. I don't know what you're reading, sir. What
7 are you referencing?

8 A. I'm referring to -- In this case I actually
9 got it from the response or motion to leave to file
10 supplemental answer of the Midcontinent Independent
11 System Operator in our case number EL22-83000.

12 MR. SCHULTE: I would move to strike the
13 witness's last statement as unsupported hearsay with no
14 foundation.

15 MR. PRINGLE: And for clarification purposes,
16 Judge, Mr. Stahlman, are you referring to the document
17 that Mr. Agathen attempted to enter into evidence on the
18 first day of this hearing?

19 THE WITNESS: It would be one of the --
20 There's several documents. I can't remember which one
21 in that case he was specifically referring to, but this
22 could be the same one.

23 MR. PRINGLE: I believe at least four or five
24 parties objected to that on various grounds. I'm sure
25 they will all object on the same grounds to

1 Mr. Stahlman's attempt to enter that into the evidence.

2 JUDGE DIPPELL: Was that the document Exhibit
3 300 that is still pending?

4 MR. PRINGLE: No, it's in the same docket,
5 Judge. It's all part of the same case, yes.

6 JUDGE DIPPELL: Are there any other comments
7 or responses to the motion to strike?

8 MS. WHIPPLE: Yes, Your Honor. MEC joins in
9 the motion to strike and reiterates its earlier
10 objections. Reading an unsworn document, parts of an
11 unsworn document from an entity who is not a party to
12 this case but is a party to a separate case, a case
13 which does not include all of these parties, cannot come
14 in for due process reasons and also is obviously not
15 even a party admission by Grain Belt because this is not
16 a Grain Belt statement in another case. It's a
17 statement by MISO who is not a party here at all. And
18 so I would raise the same due process concerns and ask
19 that neither the document be entered as an exhibit nor
20 any quotes read from it. Thank you.

21 MR. ELLINGER: Judge, Associated Industries
22 also join in that and the fact that we don't have a copy
23 of the document in front of us I can't tell you if it's
24 a complete and total document. Excerpts from documents
25 shouldn't be allowed because it denies the right of

1 cross-examination. So we join in the objections already
2 stated and for that reason also.

3 MR. PRINGLE: If I may respond, Judge.

4 JUDGE DIPPELL: Yes, Mr. Pringle.

5 MR. PRINGLE: Yeah, I do believe it's not
6 necessary to go into the exact details or quote from the
7 filing, but seeings how this is an active docket
8 involving the interconnection with an RTO at the heart
9 of this hearing, I believe depriving the Commission of
10 the knowledge about that docket would also prevent them
11 from having all the information they need to make this
12 decision before them today.

13 JUDGE DIPPELL: Mr. Schulte, you had something
14 else?

15 MR. SCHULTE: Yeah. So in response to
16 Mr. Pringle, obviously the rules of evidence are here
17 for a reason that not any information is information
18 that the Commission should receive into evidence. The
19 problem with this particular information is that it's
20 coming from a party who's not a part of this proceeding
21 who is not subject to cross-examination. It's also a
22 filing that was made two weeks ago that the parties have
23 not even had a chance to respond to as part of the FERC
24 proceeding. So it is an unchallenged, unverified
25 statement by a party who's not part of this proceeding

1 and if the information was received as part of evidence
2 in this case it would be highly prejudicial to the other
3 parties. And so just simply because it's information
4 does not make it evidence that's admissible.

5 JUDGE DIPPELL: Okay. I'm going to sustain
6 the motion to strike and the objections and strike the
7 witness's testimony with regard to what he read from the
8 answer which has been marked previously as Exhibit 300;
9 and just to clarify, I am going to also sustain the
10 objections to Exhibit 300 and deny its admission.

11 Did you have additional questions,
12 Mr. Schulte?

13 MR. SCHULTE: I do. I am going to move on to
14 a different subject though.

15 MR. PRINGLE: Judge, just for clarification,
16 the strike is just that most recent response is what
17 we're talking about here?

18 JUDGE DIPPELL: Yes.

19 BY MR. SCHULTE:

20 Q. Okay. Moving on to a different subject, could
21 you turn to page 1 of your rebuttal testimony.

22 A. Page 1 of rebuttal.

23 Q. And here beginning at line 20 there's a
24 question regarding Staff's position on phasing of the
25 Project; do you see that?

1 A. Correct.

2 Q. And you state that Staff is opposed to this
3 proposal and that you go on to testify the Commission
4 previously found that the economic feasibility of the
5 Project is dependent on the Project's ability to sell to
6 PJM as the revenues from the Missouri converter station
7 based on the MJMEUC contract were insufficient to cover
8 the Project's costs. Did I read that correctly?

9 A. Yes.

10 Q. And so by "Commission previously found,"
11 you're referring to the Report and Order on Remand from
12 the 2016 case?

13 A. Yes.

14 Q. And that's cited in your footnote 1 on page 2?

15 A. Correct.

16 Q. And the date of that Report and Order was
17 March 20, 2019, correct?

18 A. Correct.

19 Q. And moving on, on page 2 you quote the Report
20 and Order on Remand with regard to the power prices in
21 PJM relative to the power prices in MISO. Do you see
22 that?

23 A. Can you direct me which line are we at?

24 Q. Yes, line 8 on page 2 of your rebuttal
25 testimony.

1 A. Yes.

2 Q. And that's the \$10 per MW that the prices in
3 PJM are generally \$10 per MW higher than prices paid for
4 energy in MISO?

5 A. That's what it states, yes.

6 Q. Okay. And that was a finding made on March
7 20, 2019, correct?

8 A. Correct.

9 Q. And the next sentence beginning on line 12,
10 you reference Grain Belt Express witness David A. Berry?

11 A. Correct.

12 Q. And that footnote, footnote 2 at the bottom of
13 page 2, that refers to a transcript in Case No.
14 EA-2016-0358, correct?

15 A. Yes.

16 Q. And the date of that transcript is March 22,
17 2017; is that correct?

18 A. Correct.

19 Q. So aside from an Order issued in March of
20 2019, in testimony in March of 2017, have you done any,
21 other than reviewing those documents, have you done any
22 analysis specifically with regard to the demand for
23 Grain Belt Express products and energy in MISO at the
24 current time?

25 A. I don't know that you understand Staff's role

1 in this; that Staff is an expert. We have expert
2 reviewers and auditors to analyze the evidence that
3 Grain Belt Express gives to us. So what we looked at
4 was everything Grain Belt Express provided in this case
5 and tried to formulate off our opinion. So it would be
6 we looked at the MOUs and any other agreements that were
7 provided and whatever else we could get through data
8 requests.

9 Q. Right. And the information about the MOUs and
10 the MISO, the current demand in MISO was addressed in
11 the direct testimony of Shashank Sane and as well the
12 price benefits in MISO were addressed in the direct
13 testimony of Mark Repsher; is that correct?

14 A. I don't recall prices in Mark Repsher's. I
15 could be misremembering it. I don't recall anything
16 addressing the \$10 MW differential in specific.

17 Q. Right. Okay. I'm trying to understand just
18 the totality of the basis for Staff's opposition to
19 phasing. So the question on page 1, line 20 states
20 Invenergy proposes to construct the Project in two
21 phases instead of one phase. Does Staff support this
22 proposal. Answer. No. The rest of that answer is what
23 we've just been going through, refers to a 2019 Order
24 and 2017 testimony from Mr. Berry.

25 A. I think I understand.

1 Q. Then at the bottom of that answer you state
2 Staff witness Claire Eubanks, PE, also discusses the
3 modifications to certain conditions that GBE proposes to
4 enable phasing. Do you see those lines?

5 A. Yes.

6 Q. Did I read those correctly?

7 A. Yes.

8 Q. We spoke to Ms. Eubanks yesterday regarding
9 her position, and she said her position on her input to
10 Staff's position on phasing was limited and we addressed
11 the status of the certification in Illinois. Were you
12 here yesterday?

13 A. Yes. I was not here for her testimony, but I
14 know that was a part of her testimony.

15 Q. Okay. So I'm following up on that to make
16 sure that we understand the totality of Staff's position
17 on phasing. There doesn't seem to be anything else in
18 your rebuttal testimony with regard to phasing other
19 than reference to a 2019 Order and 2017 evidence. I'm
20 just wondering if you examined anything else regarding
21 your present conditions?

22 A. Yes. Because when Grain Belt filed its
23 testimony, it did not provide any justification for the
24 phasing aspects of it. It was just kind of it wanted
25 it. We are specifically looking for economic

1 feasibility analysis, and there wasn't really any of
2 that analysis provided until we got Ms. Shine's
3 workpaper in surrebuttal. Now that we've had that and
4 what we've heard from all the Grain Belt witnesses
5 through this is that the optimal solution is for both
6 phases to be constructed. That's economically optimal.
7 So that is in line with us saying that the optimal
8 solution is for this to all be constructed at once. And
9 so with the lack of the feasibility analysis in direct
10 testimony, what I had to do was to go back and see what
11 the Commission had found in its prior Order and so my
12 rebuttal testimony could only see how the proposed
13 amendments affected what the Commission had previously
14 found.

15 Q. Is it Staff's position that Mr. Sane's
16 testimony regarding demand in the MISO markets for
17 renewable energy as demonstrated by corporate and
18 industrial decarbonization goals, decarbonization goals
19 of utilities in MISO, the discussion of memorandums of
20 understanding, letters of intent and ongoing commercial
21 discussions, is it Staff's position that that is not
22 relevant to economic feasibility?

23 A. This is going to how reasonable is the
24 assumptions of the future revenue streams assumed in Ms.
25 Shine's testimony are.

1 Q. Right. But you said that there was no -- that
2 Grain Belt Express did not provide any evidence with
3 regard to feasibility analysis in its initial filing.

4 A. Right. There's no revenue, future revenue
5 streams projected out from any of Grain Belt's direct
6 testimony. We did not get that until surrebuttal.

7 Q. Is it Staff's position that projected revenue
8 streams is the only evidence for economic feasibility?

9 A. Economic feasibility factors, two things.
10 Essentially you're looking at a benefit cost test.
11 You've got the investment that Grain Belt is going to
12 make and that needs to be compared to the future revenue
13 streams that is projected out. Without that, you don't
14 have an economic feasibility analysis. And I should add
15 that Ms. Shine's analysis is only for Phase I. We still
16 don't have the Phase II aspects.

17 Q. Did you review the direct testimony of Mark
18 Repsher in the PA Consulting study?

19 A. Yes.

20 Q. And do you have any reason -- Do you have any
21 specific criticisms of the results there regarding the
22 17.6 billion in energy and capacity savings?

23 A. Yes, because that is not revenue streams to
24 the Invenergy to compare to the investment. That is
25 like a societal cost analysis. That is much different

1 than what an economic feasibility analysis would look
2 at.

3 Q. In the 2016 case, where the Commission granted
4 a CCN for the Grain Belt Express line as previously
5 proposed, were there any signed contracts beyond the
6 MJMEUC contract?

7 A. No.

8 Q. Was there any guaranteed revenue streams?

9 A. Let me correct myself. There was actually at
10 the time a Realgy. Outside of that, I'm not familiar
11 with anything.

12 Q. Was there -- And yet the Commission found that
13 the Project met the Tartan Factors and was necessary or
14 convenient for the public interest?

15 A. And that's where I had to find myself when I
16 was analyzing this. It was based on the projected sales
17 to PJM in this case or in that case.

18 Q. Right. Okay. So now we're back to current --
19 Do you have any basis for -- Is it Staff's position that
20 there is still a \$10 per MW difference between PJM
21 prices and MISO prices?

22 A. I don't know of any analysis performed by
23 Grain Belt that challenged it. We were just looking at
24 the evidence presented before us. Since the Commission
25 had previously determined that, we didn't challenge it.

1 Q. Would you agree that a price differential
2 between PJM and MISO is relevant to economic feasibility
3 only if the prices in MISO are not by themselves
4 sufficient? I mean, if the prices -- Like for Phase I,
5 if the prices are sufficient in MISO, then Phase I is
6 feasible regardless of what the prices are in PJM,
7 correct?

8 A. I think -- I mean, if we had evidence for us
9 to look at, we would consider that, but I don't know
10 that that's been brought up here.

11 Q. The prices that customers are willing to pay
12 in MISO has not been brought up in this proceeding?

13 A. Right. There's a question with Ms. Shine's
14 testimony on the revenue stream. That's a hard coded
15 number. There's no reasonable way I can verify what was
16 actually behind those numbers. And in fact, based off
17 the one contract with MJMEUC, I was able to kind of
18 compare prices a little bit on a per MW basis and the
19 prices that I think that Ms. Shine would have had used
20 to conduct her analysis are a lot higher, like over ten
21 times higher.

22 Q. I think you referenced that an optimal
23 solution is, I don't want to put words in your mouth.
24 What did you say regarding the party's positions on what
25 an optimal solution is with regard to?

1 A. This is going back to live testimony here on
2 Monday and Tuesday. Staff counsel, he asked all the
3 parties, or a lot of the witnesses of Grain Belt, was
4 the construction of both I and II the optimal solution
5 and they all said that yes, building both phases is the
6 optimal solution, economically optimal, and that's
7 consistent with what Staff has been recommending is that
8 both are constructed at the same time.

9 Q. That question did not ask whether the optimal
10 solution was to build both simultaneously. It was
11 whether the optimal solution was to build both phases
12 eventually.

13 A. But when we're looking at the benefits of the
14 Project and all that, that was assuming that the optimal
15 -- that they were both built. That was to be the basis
16 of the question.

17 Q. Eventually. I mean, there wasn't a timing
18 component to that question?

19 A. I'm not aware of timing.

20 Q. Do you still have a copy of the Report and
21 Order in the previous case?

22 A. Yes.

23 Q. Could you turn to page 43?

24 A. I am on page 43.

25 Q. Do you see a section heading towards the

1 bottom of the page titled Economic Feasibility of the
2 Project?

3 A. Yes.

4 Q. And the Commission's finding there is Grain
5 Belt's Project is economically feasible because it links
6 customers in Missouri who desire to purchase low-cost
7 wind power from western Kansas with wind generation
8 companies like Iron Star who proposed to supply that
9 energy all under a business model under which Grain Belt
10 assumes the financial risk of building and operating the
11 transmission line. Do you see that?

12 A. Yes.

13 Q. That is still the main objective of the Grain
14 Belt Project, correct, is to link customers in Missouri
15 to, at least for Phase I, to low-cost renewable energy
16 in western Kansas?

17 A. That is what they have stated, yes.

18 Q. Are you aware of anywhere in the Commission's
19 Report and Order on Remand from the 2016 case where they
20 mention guaranteed revenue streams or revenue streams of
21 any manner?

22 A. I'm not familiar with those terms being in the
23 Report and Order, but I have not specifically reviewed
24 the Report and Order for specific terms like that.

25 Q. Okay. On a different subject, could you

1 please turn to page 6 of your rebuttal testimony.

2 A. Page 6 of rebuttal you said?

3 Q. Yes, please. Beginning on line 10, you
4 testify that Invenergy's estimation of a 74 percent
5 capacity factor also unreasonably assumed normalized
6 wind and solar generation curves where the peak solar
7 was equal to the peak wind capacity for a single day and
8 assumes that generation would operate on this normalized
9 basis every day. Do you see that?

10 A. Yes.

11 Q. Did I read that correctly?

12 A. Yes.

13 Q. What do you mean by peak solar and peak wind
14 capacity for a single day?

15 A. This was the interesting thing on how they
16 came about a 74 percent capacity factor. In response to
17 a data request, I think it was number 31, they built
18 twice the capacity of wind generation and then they
19 artificially cut off the peaks of that total generation.
20 Then they averaged the curves and assumed that every day
21 would be this normal 24 hour. So the wind was always
22 blowing in the morning and every day was a clear sunny
23 day so the solar operated at capacity, and that just
24 seems totally unrealistic. And also when they averaged
25 all this generation, rather than having the total

1 capacity worked out and figure --

2 Q. I'm sorry. We've gotten into -- I don't have
3 a DR in front of me that you're referring to. I'm lost
4 and I'm sure other people are lost. My question was
5 simply about your testimony, what does -- you said peak
6 solar and peak wind capacity for a single day and that
7 it would operate on that normalized basis every day. So
8 I just want to understand is your understanding that
9 there was like the best day of the year was then
10 reproduced for every day in order to get that?

11 A. They averaged that all into one day. So they
12 took a year's worth of information, averaged it into one
13 single day to come up with the curves. And with that
14 averaging, because some of those periods had more
15 generation than what the capacity of the line was
16 capable of, they just -- your witness cut off the peaks
17 and that raises questions on like what happens for
18 production tax credits or investment tax credits to the
19 wind generation, where does all this extra energy go.
20 It raised a lot of questions that are not answered in
21 order to assume this capacity factor. This was also a
22 workpaper provided by your witness in surrebuttal as
23 well, I think, not only in answer to the data request.

24 Q. Could you turn to -- I think it will be easier
25 to follow along if we refer to specific documents.

1 Could you please turn to page -- Do you have a copy of
2 Mr. Sane's rebuttal testimony? I can provide it.

3 A. I don't know. Is it part of the tabs that you
4 have here?

5 Q. No.

6 JUDGE DIPPELL: Did you say Sane's
7 surrebuttal? Is that what you said?

8 MR. SCHULTE: Yes.

9 MR. PRINGLE: Approaching the witness with a
10 copy of Mr. Sane's surrebuttal.

11 JUDGE DIPPELL: Go right ahead. Mr. Schulte,
12 I'm looking at the clock and thinking this might be a
13 good opportunity to take a short break.

14 MR. SCHULTE: Yeah. We're moving into --
15 Yeah, we're going to talk about this exhibit for a
16 little while. This probably is a good time.

17 JUDGE DIPPELL: Let's go ahead and do that
18 then. It's almost 10:00. Let's take a 15-minute break
19 and return at 10:15. Thank you. We can go off the
20 record.

21 (A recess was taken.)

22 JUDGE DIPPELL: Okay. We can go ahead and go
23 back on the record. We've had a little break and we
24 will continue with Mr. Schulte's questions of
25 Mr. Stahlman.

1 MR. SCHULTE: Thank you, Judge. I think that
2 was a timely break because I think we've been able to
3 eliminate some questions and hopefully we can get to the
4 end of this cross-examination.

5 BY MR. SCHULTE:

6 Q. Before the break, Mr. Stahlman, I asked you to
7 reference Mr. Sane's surrebuttal testimony. Do you
8 still have a copy of that?

9 A. Yes.

10 Q. Could you please turn to page 20?

11 A. I am there.

12 Q. Beginning at line 5, Mr. Sane testifies with
13 regard to capacity factor, 74 percent represents a
14 realistic expectation of average energy production for
15 resources expected to be interconnected to Grain Belt
16 Express, based on actual observed data over a year. Do
17 you see that?

18 A. Yes.

19 Q. And Grain Belt Express projected actual wind
20 and solar energy production for each hour of the year
21 based on measured wind speed from the met masts in
22 southwest Kansas, and solar irradiance data from
23 SolarAnywhere for a site in southwestern Kansas, for the
24 capacity factor calculations; do you see that?

25 A. Yes.

1 Q. And then he states that that was provided to
2 PA Consulting for their analysis and it was provided in
3 response to Staff Data Requests 33 and 34, also attached
4 as Confidential Schedule SS-4. Do you see all of that?

5 A. Yes. I thought it was DR 31. I'm sorry for
6 that error in numbering.

7 Q. That was the reference that you were making
8 before?

9 A. I think so. I'm quite positive it was SS
10 Schedule 4.

11 Q. I'm trying to reconcile what you mean in your
12 rebuttal testimony at page 6 with regard to Invenergy's
13 estimation relying on peak solar and peak wind capacity
14 for a single day with Mr. Sane's testimony that it was
15 based on actual hourly data.

16 A. So let me refer back to his testimony here.
17 Production of each hour of the year based on the
18 measured wind speed. He put all of the hours into one
19 assumed day when he came up with that capacity factor.
20 And the addition --

21 Q. I've just got to break it down so we make sure
22 we understand it. He put all of the hourly data into a
23 single day. Did he average the days or what?

24 A. It was a sort of average because he also
25 truncated the data on the high end. So if the

1 generation of all -- If all the generation was higher
2 than the capacity of the Grain Belt line, they cut that
3 peak off without explanation.

4 Q. So you would agree that wind generation and
5 solar generation generates at different times of the day
6 or generally speaking it's possible to generate wind
7 during the nighttime hours and it's not possible to
8 generate solar energy during the nighttime hours,
9 correct?

10 A. Yes.

11 Q. Wind and solar produce energy at different
12 times?

13 A. Right. This also goes to it produces at
14 different levels depending on the season. So summer you
15 get more solar generation in a typical day than what you
16 would normally get in winter. And wind also changes
17 with seasonal. That's why we have seasonal
18 accreditation with MISO and SPP. But with this, all of
19 the analysis that Grain Belt provided went into one
20 single day and analyzed it from that aspect. Like it
21 was all averaged to one day. There's no seasonality
22 considered, there was no questions about if wind
23 happened to blow on an incredibly sunny day at the peak
24 times, there was no questions on what if the wind was
25 not blowing during the morning hours because sometimes

1 you get a really cold high pressure system come in. You
2 get a cloudy day in the winter that is very cold and
3 there's no wind blowing during this high pressure
4 system.

5 Q. Capacity factor is an average, right, of --
6 The capacity factor itself represents how much energy
7 you can expect a certain generator or collection of
8 generators to produce relative to its capacity, correct?

9 A. Yeah, and that definition is correct and that
10 goes also to the math used behind this, because in the
11 calculations they increased generation but they did not
12 change the denominator of that calculation for capacity
13 factor. So they built more generation in order to raise
14 the amount of expected energy produced but with that
15 more generation they did not increase the denominator
16 for the divisor and instead of getting -- we did this
17 exercise --

18 Q. Because the Grain Belt Project is 5000 MW,
19 right?

20 A. That is what Grain Belt is proposing to do at
21 this time.

22 Q. And the assumed interconnected generation is,
23 and this is in Mr. Repsher's testimony, and I can give
24 you a copy if you need it. I'm just going to make one
25 reference so perhaps you can just confirm whether that's

1 your recollection. The assumed interconnection -- For
2 the purposes of this calculation of capacity factor,
3 Grain Belt and PA Consulting assumed 6000, approximately
4 6000 MW of wind and 3200, 3,200 MW of solar. Does that
5 sound right?

6 A. Adds up to about 9000, about twice the level,
7 yeah, I think that sounds about right.

8 Q. Yeah. 9200 or 9300, somewhere between there.
9 I can hand you a copy of the PA report if it's easier.

10 A. If you want to. I accept those values are
11 accurate.

12 Q. Okay. I think we can move on. So that amount
13 of generation feeding a 5000 MW line means that
14 occasionally when the wind is both blowing and the sun
15 is shining at the same time it's possible that those
16 generators will be producing above 5000 MW, correct?

17 A. Yes.

18 Q. And so in that scenario you would have to clip
19 the amount of total generation in order to only provide
20 5000 MW through the Grain Belt Express transmission
21 line, right?

22 A. Yes.

23 Q. And so is that -- So it's not arbitrary to
24 clip the peaks if the peak is above 5000, because that's
25 how the Project will work?

1 A. But that raises a lot of questions. So are
2 these wind generators going to want to forego the
3 production tax credits during that time period and the
4 investment tax credit potential, who's going to control.
5 This is kind of where I was getting at with this is just
6 a transmission line. The generation of what is going to
7 be on that is not part of this case. So there's a lot
8 of assumptions being made in order to conclude with
9 these factors. Irregardless of that since I'm looking
10 at economic feasibility, as I stated earlier, this is
11 more of a societal test that Mr. Repsher provided. This
12 wasn't looking at the actual investments or the revenue
13 streams going to Invenergy.

14 Q. Okay. I think we're getting far afield of my
15 question. It was just that the clipping of the peaks
16 was related to the capacity of the transmission line.
17 You agreed with that?

18 A. Yes.

19 Q. Are you familiar with the concept of
20 transmission congestion generally?

21 A. Generally, yes.

22 Q. And in the case of transmission congestion,
23 that means that there is more generation being produced
24 than can be delivered through a certain segment of the
25 transmission grid?

1 A. I would say that's broadly correct, yes.

2 Q. In those situations, generation that would
3 otherwise be able to produce is not producing and that
4 happens any time there's congestion on the grid,
5 correct?

6 A. I was starting to think again, because it can
7 also be that there's too much demand side the congestion
8 can be looked at two different aspects on. So if
9 there's too much demand for a line, congestion can also
10 be caused because of constraints of the line itself such
11 as there's weather temperature factors to be considered.
12 There's a lot of things that go into congestion.

13 Q. But generation curtailment is not a concept
14 that would be unique to the Grain Belt Project?

15 A. No.

16 MR. SCHULTE: No further questions. Thank
17 you, Mr. Stahlman.

18 JUDGE DIPPELL: Thank you. Are there
19 Commission questions for Mr. Stahlman? Mr. Chairman.

20 CHAIRMAN RUPP: Morning.

21 THE WITNESS: Good morning. Adjust over here
22 so I can see you.

23 QUESTIONS

24 BY CHAIRMAN RUPP:

25 Q. I have a whole page of questions I might

1 bounce around, but most of my questions are going to be
2 in reference to your rebuttal testimony.

3 A. Okay.

4 Q. So following up on the most recent
5 conversation you had with the Company's attorney, the
6 capacity factor of 74 percent you disagree with I think
7 was pretty clear?

8 A. Yes.

9 Q. In your professional opinion, what should the
10 capacity factor factored into this be?

11 A. It's hard to tell, because there isn't a
12 proposed generation project that I can point to right
13 now that they have a contract with to say that this is
14 what that Project is proposing. At least not that I'm
15 aware of.

16 Q. So you took issue with the taking of all the
17 data from the solar farm and the wind farm and
18 truncating it into one day?

19 A. Right. And I think it leads to a lot more
20 questions on like where is it going to go, is somebody
21 that's producing the wind generator going to want to
22 take I guess on their own selves to go ahead and cut off
23 how much they're producing in order and still want to
24 sell into across this line.

25 Q. I understand. How would you have presented

1 that information?

2 A. Honestly, for the purposes of this case, I
3 wouldn't, because this is a transmission line and this
4 was going into a societal cost type of study. For my
5 economic feasibility analysis, I wouldn't be worried
6 about the generation. I would just assume that there's
7 going to be generation that is going to be constructed
8 and they're going to sell power over my line and then
9 develop what the revenues associated with that are and
10 I'd say this is my feasibility analysis.

11 Q. You had discussions with the Company's counsel
12 and you discussed it in your testimony. In your
13 professional opinion, why would MISO not sign an
14 interconnection agreement with Grain Belt?

15 A. I don't know that MISO is not signing with
16 Grain Belt. The question is more which study or studies
17 would Grain Belt want to sign with MISO. That kind of
18 goes more to the demand needed on the MISO side versus
19 the PJM, can they fetch a better price by pushing more
20 power to PJM.

21 Q. So you're not concerned that MISO will not
22 sign an interconnection agreement; it's more what will
23 the revenues look like when they sign?

24 A. Yeah. When we get -- When there's a certain
25 amount built that then we can define this is the

1 project. So the way we've gone through this testimony
2 is we've taken Grain Belt at their word that this is
3 what is going to be constructed at this 2500 MW
4 converter station. And in order to -- A lot of the
5 studies assume that both phases are built. The National
6 Security assumptions was built on two phases, not one.
7 And so it's more if Phase I was there only, not building
8 Phase II goes against that public interest aspects.

9 Q. Okay. So I understand Staff's position that
10 we should deny their request to build in phases based on
11 what you have articulated?

12 A. Okay.

13 Q. Does Staff believe that if the Project went
14 forward as one phase, not two, is there a detriment to
15 Missouri ratepayers?

16 A. That can become unclear. There is questions
17 on if the Project is not feasible on the one phase only.
18 Currently there's projected upgrades.

19 Q. When you say "one phase only," my question is
20 if the line is built without phases, both phases, not
21 truncating it into Phase I and Phase II, if the line is
22 built as one phase only running from Kansas to PJM, is
23 Staff's opinion is there a detriment to Missouri
24 ratepayers?

25 A. It would operate more economically optimally

1 based on what we had from the prior Commission Order,
2 and so the risk would be substantially less if it's
3 operated at once. It's hard to say there's no risk
4 because it's like you can't even put a Band-Aid on a
5 wound without some assumption of risk.

6 Q. In your answer, you said there is less risk.
7 Compared to the 2019 Order? Is that how you're
8 clarifying that?

9 A. Yeah. So Staff has been in kind of a strange
10 position with this whole case. As you may remember, we
11 were not in favor of approval of the initial line
12 because we had questions about the economic feasibility
13 back then, but the Commission ruled against Staff. And
14 so now we have to -- We don't want to speak against the
15 Commission's Orders and Findings, so we have to kind of
16 assume that because this is already constructed. And so
17 when they come in with their amendment, we're comparing
18 that to how that affects that Order and projections on
19 that and what evidence they provided to support their
20 amendment.

21 Q. Okay. In your testimony you referenced the
22 2019 Order, Report and Order, and you quoted the \$10
23 price differential from PJM to MISO. I understand that
24 it is not Staff's role to go and analyze these things
25 and instead you are looking at the information provided

1 by the Company and poking holes and trying to come up
2 with an opinion. But when I read the statement from the
3 2019 Order, it says, quote, since power prices for PJM
4 are generally \$10 a MW higher, we're speaking in
5 generalizations.

6 A. Correct.

7 Q. I believe you stated that you have had
8 significant experience dealing with MISO on transmission
9 agreements and you are able to take them at their word
10 for some of the conversations you were having with their
11 attorney. So I'm going to ask you in your professional
12 opinion with your experience dealing with
13 interconnection issues with MISO, generally are the
14 prices in PJM higher or lower than prices paid for
15 energy sold into the MISO market in Missouri currently?

16 A. I'm not specifically aware on it. I have no
17 reason to believe that they are any different at this
18 time. So I haven't gone through and calculated the
19 average LMPs of where the proposed injection sites are
20 at this time.

21 Q. Generally speaking, you believe that the power
22 prices in PJM are roughly similar to the power prices in
23 the MISO market?

24 A. I can't say one way or the other at this time.

25 Q. On page 6 of your rebuttal testimony,

1 specifically line 18, the question was will lower energy
2 and capacity prices mean that ratepayers' rates will go
3 down. Your answer was not necessarily and then you go
4 into an explanation. Explain your answer to me. I've
5 read it but just talk to me. I've said this many times
6 I learn by conversation. That's my learning style is
7 conversational. Just talk to me about why does lower
8 energy and capacity prices not necessarily mean that
9 ratepayer rates will go down.

10 A. A lot of this goes to whether a utility, a net
11 purchaser or net seller. If you are selling energy into
12 the markets, you want to have the highest price
13 possible, correct? And when you're making those
14 off-system sales if that gives you a higher margin, that
15 goes back and reflects itself in the rates that
16 ratepayers pay. If on the other hand they are net
17 purchasers, you want to have the lowest price possible
18 for the goods and services that you're purchasing. And
19 the lower that price, then that would go into the
20 ratepayers' rates. So a lot of that goes into whether
21 the Company, the specific utility that we mentioned, is
22 a net purchaser or net seller.

23 Q. Generally do lower energy and capacity prices
24 mean that ratepayer rates will go down?

25 A. I would say generally if the utility is a net

1 seller, they go up with lower capacity and energy
2 prices. If the utility is a net seller, then the rates
3 would go down with lower energy capacity prices.

4 Q. But then again we're talking about generators.

5 A. I mean, that's for the utility on a whole,
6 yes.

7 Q. You talk about the impact of generation that
8 fluctuates hour to hour. Then you use a comparable
9 example of fuel efficient vehicle at highway speeds
10 compared to the same vehicle in stop-and-go traffic.

11 A. Yes.

12 Q. Using that example, how does -- if the price
13 of gas at the gas station on the corner goes down, how
14 does that not impact the car owner regardless of the
15 fuel efficiency of their vehicle?

16 A. So that would be assuming you are a net
17 purchaser of the gasoline at the corner. So if it's
18 going down at the corner and you're purchasing it, then
19 yes, the rates are going down for you. A large part of
20 this is, and it's hard to kind of work this in on this
21 analysis, because if it's more with how much gas is
22 being put in I guess and trying to get with this
23 example. So it's not going to work quite right.

24 What we are, and I think even Sierra Club has
25 testified to this in other dockets, that when you --

1 with the more renewables, you're seeing a lot more of
2 the shutting down of the older models of coal and
3 natural gas. That's putting more wear and tear. So
4 when I was in the Navy as a reactor operator on our
5 boats, generally the boat did not -- the reactor did not
6 break when you're up and running or when you're shut
7 down. It's when you're transitioning that that would
8 put the wear and tear on all your equipment. Sometimes
9 you would start a start-up on the reactor and then
10 something would break and so you'd have to shut back
11 down. And I think we even see this depending on how
12 much you follow with the Callaway plant, because they're
13 in fairly periodical cycles. When they stop to refuel,
14 it's generally sometimes that's when the equipment
15 breaks either when they go to shut down or when they
16 start back up.

17 Q. Continuing on in your testimony on page 7, you
18 were asked about Mr. Repsher's testimony. You stated
19 that he incorrectly applies the economic feasibility by
20 counting benefits to non-Invenergy parties as their own.
21 Who are those benefits going to?

22 A. I think that was directed to his study was
23 looking at the benefits to Missouri, and so that would
24 have factored into SPP customers, the AECI customers and
25 the MISO customers and what other ones there may be out

1 there.

2 Q. You're saying that he included estimated
3 benefits that do not offset the Project costs. So those
4 benefits whether they went to AECI or SPP, those do not
5 offset the Project cost?

6 A. No. With economic feasibility, we're looking
7 at the revenue streams that go to Invenergy in specific.
8 And when he's calculating those benefits, he is
9 including all the societal benefits that go to other
10 people in Missouri, not to Invenergy in specific. So I
11 thought his analysis would be better as a societal or in
12 that public interest aspect rather than the economic
13 feasibility analysis.

14 Q. Continuing on in your surrebuttal, I think I'm
15 on page 8 now. I think it was under the question why
16 does Staff recommend the Commission not rely on the
17 study provided by Dr. Loomis. From the way I read this,
18 were you talking about if this line was built it would
19 keep generation from being built in Missouri because
20 there would not be the need for that generation and
21 therefore there's a negative economic impact by
22 generation not being built in Missouri?

23 A. So a lot of this goes into almost economic
24 philosophy. Let me first start off and say again the
25 Loomis study was looking at benefits to non-Invenergy

1 participants, so it's not looking at the revenue streams
2 flowing to Invenergy for that feasibility analysis. If
3 I was to consider it, it would be more in that public
4 interest aspect. This gets into a broad economic
5 philosophical discussion. I think you heard two
6 different philosophies between Dr. Loomis and the Ag
7 Associations. It's just like with this endless train of
8 thought where is the caboose is kind of where I was
9 getting at on this. So you have on one aspect the
10 Loomis study presumes kind of a Keynesian approach to
11 economics. What I mean by that is a lot of times you'll
12 see the equation gross domestic product equal to
13 consumption plus investment plus government expenditures
14 and net exports. A Keynesian analysis tends to say
15 well, if we increase one of those factors, then it will
16 increase the gross domestic product. If we increase
17 spending of the government, we'll also see the GDP will
18 also go up. The contrast of that would be more of an
19 Austrian tradition look, and broadly speaking there's a
20 bunch of different schools of economic thought out
21 there. That's saying you can't just increase that.
22 That is a way to account for the economy. It's not a
23 growth model. A growth model would look more at labor,
24 capital, technology factors. And so it's two different
25 approaches. And rather than getting involved in the

1 philosophical debate, it was easier just to say don't
2 rely on it.

3 THE STENOGRAPHER: Excuse me a second. Can
4 you spell Keynesian?

5 THE WITNESS: K-e-y-n-e-s-i-a-n. It looks
6 like key nes for John Maynard Keynes, but it rhymes with
7 rains.

8 BY CHAIRMAN RUPP:

9 Q. So in your testimony you say if the Commission
10 decides to consider this information, it should consider
11 the impact of potentially offsetting employment in
12 Missouri due to generation in Missouri not being
13 constructed and the profits of this Project will flow to
14 a non-Missouri based corporation.

15 A. If I may anticipate your question, I think
16 that is going into the gross versus net aspects of it.
17 So Loomis's study was a gross analysis. It wasn't
18 considering all the negative aspects which were hammered
19 on repeatedly yesterday.

20 Q. So getting to Staff's position, is it Staff's
21 position that if this line is constructed, it is
22 offsetting generation that would have been built in the
23 state?

24 A. I think that is a definite possibility that
25 that could have happened. I think even Dr. Loomis

1 stated that that could happen.

2 Q. And who would bear the brunt of the
3 construction of new generation in Missouri?

4 A. That would be dependent on the utility. If
5 there's new construction in Missouri, so I guess there's
6 two different aspects we can look at it. That it would
7 help the area where that is being constructed for jobs
8 there but that would be the cost of whatever company
9 came through. If that was a merchant generation, the
10 generator would be subject to that.

11 Q. Do we have merchant generation in Missouri?

12 A. I thought we did. I could be wrong. I
13 thought at one point Audrain, and I think there's a few
14 others out there. Actually I would refer to either Ms.
15 Eubanks or Mr. Lange's expertise on that.

16 Q. But that would be in a nonregulated?

17 A. Correct.

18 Q. Looking at footnote number 8, I think it's on
19 page 8.

20 A. I'm there.

21 Q. I had a question about that and I can't read
22 my own handwriting, I think I was getting to -- I got a
23 sense from Staff's testimony that there was concern that
24 there was not an interconnection agreement signed with
25 MISO. But when I read this footnote, it almost seems as

1 if, yeah, just when you get it done, provide us with
2 that and we're cool. Is that?

3 A. Yeah, we would want to analyze it just to make
4 sure that there wasn't any complications to it. I think
5 that the bigger issue has been over what if the
6 interconnection agreements that are ultimately signed do
7 not reflect what is being proposed here today as the
8 current Project.

9 Q. Does that get back to a material change issue
10 that Staff has concern with?

11 A. That's where if we defined a material change.
12 They've testified that they are going to build a
13 converter station of this amount, it's going to inject
14 this other amount in these other places. All we were
15 wanting to do -- It doesn't necessarily mean that we're
16 going to have to do additional hearings. They would
17 file the application, we would look at it. If it was
18 something simple would just be even potentially Staff
19 recommendation or something.

20 Q. So we would not have another hearing or the
21 Company would not need to get approval if Staff did not
22 have an objection?

23 A. It would be hard to say that definitively but.

24 Q. Generally?

25 A. There would be less -- If it was something

1 relatively minor that issues arose, I don't know that
2 Staff would have potentially large issues with it.

3 Q. If any party objected, would we need to have a
4 hearing?

5 A. I would have to ask my attorney to be honest
6 on how that process would work.

7 MR. PRINGLE: I would assume if there's a
8 complaint filed, that could go in a hearing, Chairman
9 Rupp.

10 CHAIRMAN RUPP: Thank you.

11 BY CHAIRMAN RUPP:

12 Q. In testimony, it has been brought up that
13 there's not a bidirectional interconnection agreement
14 with MISO?

15 A. Yes.

16 Q. If the Company signs a bidirectional
17 interconnection agreement with MISO, does Staff believe
18 that is a material change?

19 A. It could be. It would be something that we
20 would want to look at. And I think the concern about
21 the injecting from MISO to other locations it kind of
22 goes more towards when they're talking about the
23 societal benefits of the line in total. So when they're
24 talking about the ability to go into SPP, they can't
25 just do that without the permissions of MISO and SPP.

1 So they're talking about reliability benefits that
2 aren't there under the current proposal. They could be
3 if they got further permissions.

4 Q. But I got a sense you were not concerned about
5 the societal benefits, more the revenue benefits
6 directly derived to Invenergy?

7 A. So with my economic feasibility analysis, yes.
8 And then the other aspects I'm concerned about was how
9 consistent is Grain Belt's testimony on the total when
10 they're saying oh, we're going to have these benefits if
11 tropical storm, not tropical storm, Winter Storm Uri
12 happens again. That they almost assume that they can
13 inject directly into SPP from MISO or PJM. And based on
14 the current interconnection agreements, I do not believe
15 that can occur. And they have agreed to a black start
16 condition that Ms. Eubanks proposed, I think.

17 Q. In your testimony, you mentioned the concern
18 about stranded equipment. Is Staff concerned about this
19 if both phases are built?

20 A. I think that's still a concern, but that is
21 mitigated by the agreements that we have in, I'm just
22 going to call it Exhibit 206, I can't remember what we
23 actually labeled it.

24 Q. So the decommissioning fund that we
25 discussed --

1 A. Yes, that mitigates concern.

2 Q. -- that mitigates. Does Staff have a concern
3 that Invenergy will seek FERC authority and escape
4 Missouri Commission authority at any point during this
5 line?

6 A. That is a definite potential. I think that
7 concern is there. I don't know that there's much we
8 could do about it.

9 Q. Do you believe that there will be sufficient
10 revenues flowing to Evergy for this Project?

11 A. I'm sorry. You said Evergy?

12 Q. Evergy, I'm sorry. Invenergy.

13 A. They all sound alike. I just don't have the
14 evidence to -- I can't say on the stand that yes, there
15 is. We tried to analyze looking at what the information
16 was provided to us, and we just cannot verify that that
17 is actually going to be the case.

18 CHAIRMAN RUPP: Judge, I believe that
19 completes all my questions. Thank you.

20 JUDGE DIPPELL: Thank you. Are there other
21 Commission questions?

22 COMMISSIONER HOLSMAN: Judge, this is
23 Commissioner Holsman.

24 JUDGE DIPPELL: Yes, go ahead, Commissioner.

25 QUESTIONS

1 BY COMMISSIONER HOLSMAN:

2 Q. I don't know if this witness can answer this
3 question but I'm going to ask anyways. Thank you for
4 your testimony.

5 A. You're welcome.

6 Q. Do you believe that if these amendments were
7 to be rejected that the Company has the existing
8 authority to continue with the original HVDC line in
9 spite of what the outcome of this case is?

10 A. So there's a little bit of a legal question
11 there. My understanding from counsel in prior
12 discussion was that there is still the existing
13 certificate for the 500 and the 3500 on PJM.

14 Q. Okay. So if the answer is yes, they have the
15 authority to proceed with the original line, do you
16 believe that the amendments offered in this case are an
17 improvement or enhancement to the benefit, the overall
18 benefit to the Missouri resident, or the Missouri
19 ratepayer I should say?

20 A. It's hard to say. To some extent when we're
21 -- The Missouri ratepayer isn't totally a function of
22 this. We kind of not opposed the increased capacity of
23 the converter station in part because of public interest
24 that the more Missouri got off the line that might be
25 better and the relocation is at a much better location

1 because we had a lot of concerns in the prior case about
2 injecting at that point with power constraints on the
3 Audrain power station. And when we're talking about the
4 ratepayer, it really questions on where this power will
5 flow. And when we're analyzing the Invenergy's
6 testimony, we're applying the Tartan criteria based on
7 the Company of Invenergy. There would be questions, I
8 don't know how interstate commerce would be affected by
9 if, you know, if we looked at is this better for a
10 specific Missouri utility, but I mean, that again goes
11 to kind of legal questions.

12 Q. Is it accurate to say that if these amendments
13 are adopted or this second Project is approved that more
14 power will be available to the state of Missouri than if
15 it is rejected?

16 A. If it is constructed as proposed, yes, the
17 converter station in Missouri is larger than the
18 converter station proposed under the existing
19 Certificate of Convenience and Necessity.

20 Q. If Phase II is not completed but Phase I is
21 completed, will there be more power to the state of
22 Missouri or less power if Phase II is completed? I know
23 that's -- how can I ask that better. Did you understand
24 the question? If only Phase I is completed, will that
25 mean more or less power for Missouri ratepayers than if

1 Phase II is completed?

2 A. I will say that the converter station with
3 Phase I is larger than the proposed CCN and that would
4 remain the same regardless of what happens to Phase II,
5 if that answers your question.

6 Q. Okay. So let me ask this question. Would
7 completion of Phase II potentially mean less power
8 delivered to the state of Missouri?

9 A. Under the current proposal as defined, I do
10 not see that Phase II resulting in less power to
11 Missouri at this time.

12 COMMISSIONER HOLSMAN: All right. Thank you
13 very much. Thank you, Judge. That's all I have.

14 JUDGE DIPPELL: All right. Are there any
15 other Commission questions? Mr. Chairman. And
16 Mr. Stahlman, if you'd continue to speak close to the
17 mike.

18 THE WITNESS: I'm sorry. I'm listening to a
19 voice out of the ceiling.

20 CHAIRMAN RUPP: There's no voice coming out of
21 the ceiling. How long have you been hearing voices?

22 (Laughter)

23 QUESTIONS

24 BY CHAIRMAN RUPP:

25 Q. To follow up on Commissioner Holsman's

1 question, can I surmise that Staff believes with this
2 application there will be more power brought into the
3 state of Missouri but with the phasing construction the
4 biggest hurdle is will there be enough revenues to the
5 Company to complete the project and be viable?

6 A. Yeah, I think there's been -- Staff has had
7 questions about the economic feasibility of the Project
8 even in the prior case and that still exists in the
9 current case. And the only feasibility analysis we've
10 been provided was only for Phase I. So we had to assume
11 based on the prior Commission Order that it was feasible
12 and it's just a question on how much that changes.

13 CHAIRMAN RUPP: Thank you.

14 JUDGE DIPPELL: Any other Commission
15 questions? Okay. I have just a couple of follow ups
16 and then I think we're done.

17 QUESTIONS

18 BY JUDGE DIPPELL:

19 Q. Are there any down sides to Missouri
20 ratepayers that you haven't already talked about if the
21 Project is built and then it turns out it's not
22 economically feasible or the revenues don't cover its
23 ongoing costs?

24 A. There's definitely going to be down sides to
25 the landowners that are in the right-of-way of the

1 Project. So on that sense I think there's kind of an
2 obligation to ensure that the Tartan criteria are met
3 before a certificate is granted. We've talked a bit
4 about the stranded assets and then also if there are
5 upgrades made because of the request it is a question on
6 how those upgrade costs would be allocated to other
7 Missourians.

8 Q. And what do you mean by upgrades?

9 A. So.

10 Q. Just so we're clear.

11 A. For example, there is the Burns substation
12 which is proposed to be much larger in anticipation of
13 the Grain Belt Project interconnecting to the Burns
14 substation. And so if something were to happen where
15 Invenergy is not able to compensate Ameren for those
16 upgrade costs, then are Ameren Missouri ratepayers going
17 to be subject to that, how is that going to be spread
18 out to other participants in the MISO market.

19 Q. And then anything else with regard to
20 ratepayers?

21 A. Those were the three that were in my
22 testimony. Nothing else comes to mind.

23 Q. Is Staff's proposed modification to ordered
24 paragraph 10 of the previous Report and Order, is that
25 part of Staff's amended position? I think it was set

1 out on page 18 of Ms. Eubanks' rebuttal.

2 A. Let me look things up to see where I'm at.
3 Okay. Order paragraph 10, this was dealing with the
4 converter station to be capable of actual delivery of
5 500 MW. I'm sorry. Repeat the question.

6 Q. Is that part of Staff's amended position?

7 A. I think that might be impacted by the material
8 change which I recommended and is part of my main
9 testimony. I don't know that Ms. Eubanks addresses that
10 condition.

11 Q. So as part of -- As part of the conditions you
12 recommended, that one remains?

13 A. That's going to remain regardless of whether
14 the Commission approves my material change condition or
15 not.

16 Q. Just wanted to clarify that. And you may have
17 talked about this, so I'm sorry if I reopen a can of
18 worms here. Was Staff able to confirm that the
19 interconnection costs based on the completed
20 interconnection studies were included in the cost
21 estimate submitted with the application? You testified
22 earlier that the studies weren't complete and there
23 weren't costs; is that correct?

24 A. Yes. There's one study that remained to be
25 completed, but I still would -- I think in the cost

1 estimate that included the projected costs up to the
2 current date and all other costs of the completed
3 studies.

4 Q. Okay. Then just a couple of clarifying
5 things. What would you need to be able to determine the
6 price differential between PJM and MISO?

7 A. I think that could be done with the publicly
8 available data. I'd want to find the -- well, verify
9 the existing interconnection points. I should say that
10 with MISO. I'm not positive if I could obtain from AECI
11 like the equivalent of an LMP analysis.

12 Q. And that's LMP?

13 A. Locational marginal price. And so you would
14 basically put, dependent on what time period you want to
15 analyze, you can come up with average prices by
16 downloading the data onto an Excel docket and
17 calculating it.

18 Q. And you mentioned earlier hard coded numbers.
19 I think we heard that term before. Can you just tell
20 me, explain what hard coded numbers are?

21 A. So with an Excel spreadsheet, we call a hard
22 coded number that is a number just inputted and there's
23 no calculation so you can't go into the formula, see how
24 that number was calculated. And there was also no
25 explanation of how a number was calculated. There

1 wasn't like a note that referred to see this other
2 workpaper or these other numbers from somewhere else.

3 Q. And then you were making a contrast between
4 the economic feasibility and societal analysis. Can you
5 explain what the difference is between those two things?

6 A. So with economic feasibility, it's looking
7 specifically at the revenue flows going to Invenergy in
8 this case versus the investment that Invenergy has to
9 make to do this Project, and with societal it's looking
10 at a much broader scope. It is looking at -- it could
11 be average Missourians. It could be looking at other
12 people besides Invenergy.

13 JUDGE DIPPELL: Okay. I appreciate your
14 clarifications. I think that's all of the bench
15 questions. Is there going to be further
16 cross-examination? I'm assuming yes. We'll just go
17 down the line. Is there further cross-examination based
18 on the Commission and my questions from MLA?

19 MR. AGATHEN: No, Your Honor.

20 JUDGE DIPPELL: Ag Associations.

21 MR. HADEN: No, Your Honor.

22 JUDGE DIPPELL: Ms. Stemme.

23 MS. STEMME: No questions.

24 JUDGE DIPPELL: Public Counsel.

25 MR. WILLIAMS: Yes, thank you. These are

1 intended to be for clarification.

2 CROSS-EXAMINATION

3 BY MR. WILLIAMS:

4 Q. Mr. Stahlman, are you familiar with Dogwood
5 Energy at all?

6 A. A little bit. Not much. I know it exists.

7 Q. Do you know what it is?

8 A. I think that was a merchant generation, a
9 company that does merchant generation.

10 Q. And do you know where it's located?

11 A. In Missouri, I think.

12 Q. And then do you remember in response to --
13 Well, Chairman Rupp was asking you questions about
14 reduction in market prices from energy coming through
15 the Grain Belt transmission line if it's built and its
16 impact on the market in MISO. You talked about the
17 impact to ratepayers being, as I understood it, positive
18 if the customer -- or the retail customer -- ratepayer
19 is being served by a net seller into the market and
20 negative if it's a net purchaser out of the market?

21 A. Yes.

22 Q. Would you explain what premises underlying
23 your coming to those conclusions, which if I heard you
24 correctly, I think you didn't state what you intended it
25 in response to Chairman Rupp.

1 A. So it would be that the LMP to a generator
2 owned by the utility would see its capacity energy
3 prices go down and so ultimately it's going to be kind
4 of on whatever typical -- it gets complex but.

5 Q. Let me try this. Were you referring to
6 vertically integrated customers, ratepayers of
7 vertically integrated utilities?

8 A. Yes.

9 Q. And part of the rates are built upon the
10 utility's rate base which includes its own generation;
11 is that correct?

12 A. Correct.

13 Q. So what is the interplay between market prices
14 and rates with a utility that owns its generation?

15 A. So a utility that owns its own generation is
16 going to have a certain amount of operational
17 expenditures and just investment cost, and those go into
18 the rates that we use to calculate utility ratepayer
19 rates. And so just with the way RTO markets work, all
20 the utility in generation would go into a market into
21 the market and they purchase back what they need. And
22 so if the prices were to lower, and they're selling on
23 net to the overall market, that lessens the revenue that
24 the Company would receive to offset the investment cost
25 and the operational expenditures by that utility. And

1 so to make up that difference that would be brought in
2 through a rate case and the resulting rates would
3 increase.

4 Q. Does that analysis underlie your statements
5 about the impacts on ratepayers of being a net seller
6 and net -- net purchaser or net seller into the market?

7 A. Yes. In my testimony, I say it depends on.
8 It doesn't -- Lower capacity energy prices do not
9 necessarily mean lower rates for utility ratepayers.

10 MR. WILLIAMS: Thank you.

11 JUDGE DIPPELL: Is there further cross based
12 on bench questions from Associated?

13 MR. ELLINGER: Just a couple. Thank you,
14 Judge. Mr. Stahlman, good morning.

15 THE WITNESS: Good morning.

16 CROSS-EXAMINATION

17 BY MR. ELLINGER:

18 Q. I believe it was Commissioner Holsman asked
19 you a couple questions about power under Phase I,
20 whether more power would be in Missouri or not. I think
21 that was Commissioner Holsman. There's been a lot of
22 questions so far today. Do you recall those general
23 questions?

24 A. Yes.

25 Q. Isn't it correct that Phase I would consist of

1 an infrastructure Project that would go from Kansas to
2 Missouri?

3 A. Yes.

4 Q. I'm sorry. Go ahead. Answer that question.

5 A. Yes.

6 Q. And that there would be a converter station
7 located in Missouri to allow power to be delivered
8 throughout transmission lines in Missouri?

9 A. Yes.

10 Q. Phase II would then extend outside of
11 Missouri, correct?

12 A. Phase II is designed to take power from Kansas
13 to the Illinois-Indiana border.

14 Q. But Phase II would be an additional portion of
15 construction that would start in Missouri and end in
16 Indiana or Illinois?

17 A. My understanding of it is it would also
18 involve Kansas construction as well.

19 Q. But it would not involve additional converter
20 stations in Missouri, right?

21 A. That's my understanding, yes.

22 Q. And the power that would come through the
23 converter station in Missouri under Phase I would allow
24 industries, businesses in Missouri to access that power
25 coming out of Kansas; is that correct?

1 A. That's my understanding, yes.

2 Q. It's your understanding that there is a demand
3 for this type of energy in the state of Missouri from
4 businesses and industries?

5 A. I mean, just loosely speaking there's a demand
6 for energy and there is interest in energy from
7 renewable energy sources, yes.

8 Q. This Project would facilitate delivery of
9 those resources into Missouri, correct?

10 A. That is what is being discussed, yes.

11 MR. ELLINGER: No further questions. Thank
12 you, Judge.

13 JUDGE DIPPELL: Anything from Sierra Club.

14 MS. RUBENSTEIN: No, thank you.

15 JUDGE DIPPELL: Renew Missouri.

16 MS. GREENWALD: No, thank you.

17 JUDGE DIPPELL: Clean Grid Alliance.

18 MR. BRADY: No, thank you.

19 JUDGE DIPPELL: MEC.

20 MS. WHIPPLE: Yes, Your Honor. Thank you.

21 Good morning, Mr. Stahlman.

22 THE WITNESS: Good morning.

23 CROSS-EXAMINATION

24 BY MS. WHIPPLE:

25 Q. I'd like to follow up on some of the questions

1 that you received from Chairman Rupp about the phasing
2 of the Project. Do you recall generally that
3 discussion?

4 A. I think you would have to repeat the question.

5 Q. I'm going to ask you a new question, but do
6 you remember generally discussing phasing with Chairman
7 Rupp?

8 A. I think so.

9 Q. Okay. Good. Here's a new question. If Grain
10 Belt's operation is delayed until both phases are
11 completed, the delivery of the low-cost Kansas energy to
12 Missouri will also be delayed, correct?

13 A. Can you repeat the question.

14 Q. Yes. If Grain Belt's operation is delayed
15 until both phases, Phase I and Phase II, are completed,
16 then the delivery to Missouri of the low-cost Kansas
17 energy will also be delayed, correct?

18 A. I think there's kind of a non sequitur in that
19 question. The delivery of energy is dependent on
20 construction rather than the phasing of it. It's not
21 been clear in the record that the phasing would actually
22 delay the construction of the entire line.

23 Q. Well, let me see if we can clear that up a
24 little bit. Is it Staff's position that constructing
25 the entire line Phases I and II will take more time or

1 less time than the construction of just Phase I?

2 A. I don't know. I mean, that's -- I don't know.

3 Q. Is it reasonable to assume that the
4 construction of the entire line all the way from Kansas
5 to Indiana would take more time than the construction of
6 the line just from Kansas to Missouri?

7 A. It depends. I mean, it depends on what crews
8 and things that Grain Belt would construct to build the
9 line.

10 Q. Well, let me ask it this way. Did Staff give
11 any consideration whatsoever to whether or not its
12 insistence that the line be constructed in entirety and
13 not in phasing might cause delay in the delivery of this
14 low-cost wind power, wind and solar power to Missouri?

15 A. That goes to questions of societal test. When
16 we looked at it, we were looking at it from what we've
17 got on record is that the optimal solution is to
18 construct both phases that was admitted to by the Grain
19 Belt witnesses and that's in line with what Staff is
20 saying. So it would harm public interest to construct
21 only one phase.

22 Q. Well, let's drill down on that a little bit
23 too, because I want to make sure we really understand
24 Staff's position. Is it Staff's position that it is
25 optimal to construct Phase I and Phase II simultaneously

1 so that the Grain Belt line does not go into operation
2 at all until Phase II is completed?

3 A. No.

4 Q. Would you please tell us then what Staff's
5 position is about the construction of the line in
6 phasing?

7 A. I think that the Staff is saying that the
8 benefits that are assumed by Grain Belt is that both
9 phases are constructed and that constructing only the
10 single phase is against the public interest.

11 Q. But is Staff now saying that Staff is
12 comfortable with Phase I being constructed and allowed
13 to go into operation assuming Phase II construction is
14 shortly commenced thereafter?

15 A. I'm not sure I understand. Can you rephrase
16 your question.

17 Q. I'll try. Is Staff comfortable with Grain
18 Belt constructing Phase I and allowing it to come into
19 operation and then at some time perhaps very shortly
20 afterward commencing the construction of Phase II?

21 A. I think there's a lot of financial questions
22 that go to -- there's financial conditions that we've
23 expressed for the phasing. Also it goes into the
24 economic feasibility question as a whole.

25 Q. Right. But would Staff -- Is Staff then not

1 opposed to Grain Belt constructing Phase I and allowing
2 it to go into operation before it begins the
3 construction of Phase II at whatever time frame perhaps
4 this Commission would order?

5 A. If it met the conditions recommended by Staff,
6 I think that would be acceptable.

7 Q. Thank you. I think that does help because I
8 think Staff is acknowledging, or I don't imagine you'll
9 disagree with me, that there are Missourians,
10 particularly, you know, my client, Missouri Electric
11 Commission, who are very eager to take advantage of the
12 low-cost energy that will be transmitted over this line
13 as soon as possible, right?

14 A. Sure.

15 Q. And can you agree with me that constructing
16 Phase I which, of course, will then drop this low-cost
17 energy into Missouri as soon as possible benefits
18 Missourians; that's just logical, right?

19 A. It would benefit your client in particular.

20 Q. Yes. Yes. And conversely delaying the
21 operation of Phase I such that that power wouldn't be
22 delivered to Missouri as soon as possible would be a
23 detriment to MEC and all of its municipal members,
24 correct?

25 A. It presumes that the Project is economically

1 feasible on the whole.

2 Q. Of course.

3 A. So if we assume that the Tartan criteria are
4 met, then yes, bringing power in sooner would be more
5 advantageous than later.

6 Q. Very good. And of course, I think you'll
7 agree with me Missouri Municipal they are ratepayers,
8 right?

9 A. They are not regulated by the Missouri Public
10 Service Commission, but they do pay money for their
11 energy.

12 Q. Right. We all know that, right?

13 A. Yes.

14 Q. Unfortunately none of us get our energy for
15 free, do we?

16 A. Correct.

17 Q. I'd like to ask you just a couple of questions
18 too about, and if I misunderstood I hope you'll correct
19 me, I want to talk to you about Staff's concern about
20 whether or not Grain Belt will displace new generation
21 in Missouri. I just want to make sure I understood
22 that. Does Staff believe that Missouri has wind and
23 solar resources equal to those that are available in
24 western Kansas?

25 A. I don't know what you mean by that question.

1 Q. Well, let me --

2 A. Are you talking about potential that -- So I
3 mean, Missouri does have wind and energy resources from
4 renewable energy available to it.

5 Q. It sure does.

6 A. Through legislation there's also been some
7 notion that there is preference for Missouri-based
8 renewable energy.

9 Q. And there would be a lot of reasons for that,
10 right, economic and political, and so forth, to prefer
11 Missouri generated energy, right?

12 A. The legislature is going to do what the
13 legislature does.

14 Q. Right. But now I'd like to ask for Staff's
15 expertise. Does Staff believe that Missouri has wind
16 resources that are equal to the wind resources that are
17 available in western Kansas?

18 A. I don't know what you mean by equal.

19 Q. Equal in ability to generate large capacities
20 of power over perhaps more regular intervals?

21 A. I mean, there is wind resources in Missouri
22 that have been constructed.

23 Q. And are Kansas, western Kansas wind resources,
24 are they rated or accredited higher than those currently
25 so rated in Missouri?

1 A. I'm not sure about actually accredited in the
2 RTO markets. There is from my understanding, and this
3 would be more under Staff witness Claire Eubanks, that
4 the potential from the wind resources may be higher in
5 Kansas than some portions of Missouri and other places
6 that there's probably higher in Missouri some portions
7 than what there would be in Kansas depending on
8 locations.

9 Q. Okay. Well, for now even assuming for
10 purposes of this question that Missouri wind resources
11 are equal to those in western Kansas, does Staff prefer
12 the displacement of Missouri farmland for a wind farm
13 over the amount of land that would be crossed by this
14 single transmission line?

15 A. I am not aware of Staff's opinion on that. We
16 just evaluate the projects that come before us as
17 proposed.

18 Q. But I thought I understood, and you can
19 correct me if I misunderstood, I thought I understood
20 that Staff had expressed concern that this line, Grain
21 Belt's line, will displace new generation in Missouri;
22 is that correct?

23 A. It was in contrast to the gross study provided
24 by Dr. Loomis, and what that was driving at is there are
25 other factors that may net with some of Dr. Loomis's

1 assumptions.

2 Q. So then Staff doesn't have its own concern
3 about whether or not Grain Belt will displace new
4 generation in Missouri?

5 A. We're not going to favor Grain Belt over any
6 other utility. We're just saying that to the extent
7 they're saying that this is going to be, and this is
8 specific to Dr. Loomis's study, that there's mitigating
9 aspects to all the benefits that he was citing.

10 Q. Okay. I think I do understand it better. So
11 if there ever was confusion about whether or not Staff
12 has its own concern that Grain Belt will displace new
13 generation in Missouri, we've put that to rest. Staff
14 does not have a standalone concern that needs to be
15 addressed or mitigated on that topic, right?

16 A. No. What we're looking at is the study
17 provided by Dr. Loomis in that statement. We're looking
18 solely at what Grain Belt was citing as benefits.

19 Q. Right. So Staff does not see a negative shall
20 we say?

21 A. I don't know what you're talking about.

22 Q. All right. Maybe I have misunderstood. I
23 think we've come to the conclusion that Staff -- in the
24 list of things that Staff might create for its concerns
25 over this Project, we would not add to that list that

1 Staff is worried that Grain Belt will displace new
2 generation in Missouri and the jobs that would come from
3 that, and so on?

4 A. I'm sorry. I'm lost with your line of
5 questioning. I mean, generally we are just evaluating
6 the evidence that Grain Belt is providing. If they're
7 citing by Dr. Loomis that there's going to be more jobs
8 and things, then what I was saying is that is
9 essentially a gross study and not a net study.

10 MR. WHIPPLE: Very good. Thank you,
11 Mr. Stahlman. That's it, Your Honor. Thank you.

12 JUDGE DIPPELL: Is there any further
13 cross-examination based on bench questions from Grain
14 Belt.

15 MR. SCHULTE: Just a few.

16 FURTHER CROSS-EXAMINATION

17 BY MR. SCHULTE:

18 Q. Mr. Stahlman, you mentioned that there wasn't
19 any evidence in the record with regard to delays that
20 could occur if Grain Belt was required to construct the
21 entire Project at the same time?

22 A. I think that was in discussion with MEC.

23 Q. Right. So have you reviewed the surrebuttal
24 testimony of Kevin Chandler?

25 A. I think briefly I've looked through it.

1 Q. Are you aware of Mr. Chandler's discussion of
2 the status of land acquisition in Illinois versus the
3 status of land acquisition in Missouri? I think it's
4 been a discussed a lot in this proceeding.

5 A. Yes.

6 Q. And have you done any analysis of how land
7 acquisition in Illinois also impacts the ability to
8 finalize engineering and design for the portion of the
9 project in Illinois?

10 A. I have not.

11 Q. And have you done any analysis of how the
12 process of land acquisition and land access in Illinois
13 impacts the timing of obtaining environmental permits
14 for the portion of the Project in Illinois?

15 A. I have not.

16 Q. And then do you still have the Report and
17 Order on Remand from the 2016 case?

18 A. Yes.

19 Q. Could you turn to page 25, please.

20 A. Okay.

21 Q. I'm looking specifically at paragraphs 77 and
22 78.

23 A. Okay.

24 Q. It states there western Kansas has some of the
25 highest wind speeds in the country routinely reaching

1 9.5 to 9.0 meters per second at 80 meters above the
2 ground, a typical hub height for wind turbines. Wind
3 speeds in western Kansas are substantially higher than
4 states to the east such as Missouri, Illinois and
5 Indiana. Higher wind speeds lead to higher capacity
6 factor meaning that the wind generator runs at a higher
7 average percentage of its maximum power output. Do you
8 see that?

9 A. Yes.

10 Q. And then the next paragraph states because
11 wind power varies proportionately to wind velocity by
12 the third power, a Kansas wind site with an average of
13 8.8 meters per second produces almost double the power
14 of a site in Missouri with a 7.0 meter per second
15 average. This exponential effect substantially reduces
16 the cost of wind energy produced by facilities located
17 in areas with higher average wind speeds. Did I read
18 that correctly?

19 A. Yes.

20 Q. Do you have any reason to contest those
21 conclusions?

22 A. I think those statements are clear.

23 MR. SCHULTE: Thank you. I don't have any
24 further questions.

25 JUDGE DIPPELL: Thank you. Is there redirect?

1

REDIRECT EXAMINATION

2

BY MR. PRINGLE:

3

Q. Mr. Stahlman, there was some talk about the RTO study with MISO. If those studies are finalized, all the studies are finalized, is that any guarantee that an interconnection agreement will be entered into?

7

A. No.

8

Q. Do you think that a finding of economic feasibility should rely upon reasonable assumptions of Project cost and revenues?

10

11

A. Yes.

12

Q. And in your opinion, Grain Belt has not provided evidence that would enable you to confirm whether the projected revenues of this Project are reasonable; is that correct?

15

16

A. Yes.

17

MR. PRINGLE: Thank you, Mr. Stahlman. No further questions.

18

19

JUDGE DIPPELL: Thank you. Thank you, Mr. Stahlman. I believe that concludes your testimony and you may be excused.

20

21

22

THE WITNESS: Thank you.

23

(Witness excused.)

24

JUDGE DIPPELL: I want to take a little assessment of where we are. I'd like to delay the lunch

25

1 break until 1:00 if possible. Since that concludes
2 Staff's witnesses. I'm correct on that, Mr. Pringle? I
3 didn't skip anybody?

4 MR. PRINGLE: Yes, you are, Judge. That's the
5 end of Staff's list of witnesses.

6 JUDGE DIPPELL: Thank you. The next witness
7 we have on the list is Clean Grid Alliance's witness
8 Mr. Goggin who's been very patiently waiting on WebEx
9 for the entire week, I think. I'm assuming there won't
10 be any problem with Mr. Goggin testifying next.

11 MR. BRADY: Depends on how you define problem.
12 Yeah, he's ready to go.

13 JUDGE DIPPELL: Okay. And then just with
14 regard to the other witnesses coming up, are there any
15 of those witnesses -- I'll just run through the list
16 just to kind of get a feeling for the amount of
17 questioning, and so forth. I'd like to wrap things up
18 today if possible. I think you all would like to as
19 well.

20 So I'm just going to kind of go through the
21 list and if you could just kind of let me know what the
22 status is. So the Ag Associations' witness Mr. Hawkins.
23 Is there going to be cross-examination of Mr. Hawkins?

24 CHAIRMAN RUPP: No.

25 JUDGE DIPPELL: Okay. Sierra Club's witness

1 Mr. Milligan. Am I saying that right? I think I
2 spelled it wrong.

3 MR. AGATHEN: I will have cross.

4 MS. WHIPPLE: Very brief.

5 JUDGE DIPPELL: Ms. Stemme, will there be
6 cross-examination for her? Okay. And obviously if this
7 changes between now and when that witness comes up, I'm
8 not going to hold you to this. I just am trying to get
9 a feel. Mr. Twitty for MEC.

10 MR. AGATHEN: Yes, Your Honor, all of the MEC
11 witnesses.

12 JUDGE DIPPELL: All of the MEC witnesses.
13 Okay. And Mr. Owen for Renew.

14 MR. AGATHEN: I've got one question.

15 JUDGE DIPPELL: Okay. Okay. I appreciate
16 that information. And since I didn't give you
17 pre-warning, and Mr. Goggin, you're being very patient,
18 but since I didn't give you pre-warning about the
19 delayed lunch break, does anybody need to take a short
20 break right now? Let's go ahead and take a break and
21 return at 12:00. Let's change it to ten minutes. Let's
22 come back at five till. We can go off the record.

23 (A recess was taken.)

24 JUDGE DIPPELL: All right. We're back on the
25 record after our short break. And when I was going

1 through the list, I didn't say I do think I have a few
2 questions and the Commissioners may have some questions
3 of Mr. Hawkins. So even if there's no cross from
4 everyone else, just wanted to put that out there.

5 MR. HADEN: Judge, on that front, I just spoke
6 with Mr. Brady. He has been gracious enough to be
7 amenable to have Mr. Hawkins go ahead of Mr. Goggin if
8 that suits the bench and the other attorneys.

9 JUDGE DIPPELL: If the other attorneys don't
10 have any objection to that.

11 MR. HADEN: I appreciate the courtesy. Thank
12 you all.

13 JUDGE DIPPELL: And with apologies to
14 Mr. Goggin, we can do that.

15 MR. HADEN: Thank you, Judge.

16 JUDGE DIPPELL: Give me just one minute and
17 then we'll get started. Thank you. I forgot to ask for
18 the return of the exhibit to the witness stand for
19 future reference. Okay. Well, then in that case,
20 Mr. Haden, go ahead.

21 MR. HADEN: Your Honor, I would call Garrett
22 Hawkins to the stand.

23 JUDGE DIPPELL: Do you solemnly swear or
24 affirm that the testimony you're about to give at this
25 hearing will be the truth?

1 THE WITNESS: I do.

2 JUDGE DIPPELL: Thank you. If you could spell
3 your name for the court reporter.

4 THE WITNESS: Yes. Garrett Hawkins,
5 G-a-r-r-e-t-t H-a-w-k-i-n-s.

6 JUDGE DIPPELL: And go ahead when you're
7 ready, Mr. Haden.

8 MR. HADEN: Good morning, Mr. Hawkins.

9 GARRETT HAWKINS,
10 having been first duly sworn, was examined and testified
11 for the record:

12 DIRECT EXAMINATION

13 BY MR. HADEN:

14 Q. Could you state for me your employer and your
15 position there.

16 A. The Missouri Farm Bureau Federation. At that
17 organization I serve as the President and the CEO.

18 Q. Are you the same Garrett Hawkins that
19 submitted certain rebuttal testimony to this body on
20 April 19, 2023, in this proceeding?

21 A. I am.

22 MR. HADEN: Your Honor, I actually did not
23 file a prefiled exhibit list, but I would ask that that
24 -- I think it's already admitted or it's on the record
25 that it be given Exhibit No. 400, and I've got a copy

1 with the handwritten numbers if the Court would like it.

2 JUDGE DIPPELL: That's fine. We have that as
3 prefiled rebuttal testimony.

4 MR. HADEN: Thank you, Judge. I tender the
5 witness for cross.

6 JUDGE DIPPELL: And did you offer that for
7 admittance?

8 MR. HADEN: I would offer it for admission. I
9 would offer that exhibit for admission.

10 JUDGE DIPPELL: Would there be any objection
11 to Exhibit No. 400? Seeing none, I will admit Exhibit
12 No. 400.

13 (AG ASSOCIATION/FARM BUREAU'S EXHIBIT 400 WAS
14 RECEIVED INTO EVIDENCE AND MADE A PART OF THIS RECORD.)

15 JUDGE DIPPELL: You are tendering the witness?

16 MR. HADEN: I tender the witness for cross,
17 Your Honor.

18 JUDGE DIPPELL: Would there be any -- Did
19 anybody come up with any cross-examination questions on
20 the break? Seeing none, then we can proceed with
21 questions from the Commission and bench. Any questions?

22 COMMISSIONER HOLSMAN: Judge, I am going to
23 have a couple questions. I'm trying to actually get
24 into the WebEx through my laptop so you can see me for
25 this one. If any of the other Commissioners have

1 questions, let them go. If they don't, I just ask for
2 about three minutes here so I can try and get in that
3 way.

4 JUDGE DIPPELL: We can wait for you to
5 connect, Commissioner.

6 COMMISSIONER KOLKMEYER: I have one.

7 JUDGE DIPPELL: Commissioner Kolkmeyer, go
8 ahead.

9 COMMISSIONER KOLKMEYER: Yes, thank you,
10 Judge. Good morning.

11 THE WITNESS: Good morning.

12 QUESTIONS

13 BY COMMISSIONER KOLKMEYER:

14 Q. Is your testimony that you submitted or going
15 to submit basically what you gave in Mexico to the
16 public hearing that day?

17 A. Yes, all the main tenets are there,
18 Mr. Commissioner.

19 COMMISSIONER KOLKMEYER: Okay. Thank you.

20 JUDGE DIPPELL: We'll just give Commissioner
21 Holsman a couple minutes to work with the technology.
22 We've had several mechanical blips this week behind the
23 scenes and some technological ones up here on the bench
24 as well.

25 COMMISSIONER HOLSMAN: Judge, I'm still

1 working on it, but it looks like it's going to work for
2 me. Just give me just a couple more seconds here.

3 JUDGE DIPPELL: Take your time, Commissioner.

4 COMMISSIONER HOLSMAN: You know what, I'm just
5 going to go ahead and go through my phone, because the
6 laptop is asking me to log into WebEx and I don't have
7 that information with me. So I will do my best. Give
8 me one more second here. All right.

9 JUDGE DIPPELL: There you are.

10 COMMISSIONER HOLSMAN: Can you see me?

11 JUDGE DIPPELL: Yes, we can see you.

12 COMMISSIONER HOLSMAN: Okay. There we go.
13 All right. Thank you. Again, I apologize for having to
14 do this remotely but I appreciate your patience. How
15 are you doing, Mr. Hawkins? Thank you for testifying
16 today.

17 QUESTIONS

18 BY COMMISSIONER HOLSMAN:

19 Q. I realize that Commissioner Kolkmeyer asked
20 you if you were going to provide similar testimony that
21 was on the record for the public hearing. But I want to
22 take an opportunity to ask you a few questions that you
23 might be able to elaborate on similar to some of the
24 questions I had asked Mr. Chandler from the Company. Is
25 that reasonable?

1 A. Yes.

2 Q. All right. Can you share any concerns you
3 have or that have been shared with you about the Company
4 eliminating the structure payments for landowners along
5 the Tiger Connector route?

6 A. Commissioner, can you repeat the question one
7 more time?

8 Q. Can you share any concerns or have been shared
9 with you about the Company eliminating the structure
10 payments for landowners along the Tiger Connector route?

11 A. Mr. Commissioner, I think our overarching
12 concern all along has been ensuring that if this Project
13 moves forward that Invenergy treats landowners with the
14 utmost respect and provides the highest level of
15 compensation given the burden that they are going to
16 bear. So as you think through the compensation
17 structure, all we have asked all along is that fairness
18 be given to landowners given this is a Project that they
19 don't want coming across the property that they don't
20 want to be forced to sell.

21 Q. Do you agree -- Earlier I asked Staff witness
22 if this amendment is not approved if the Company has the
23 authority within the original CCN to go ahead and build
24 the original line. Do you think that that's an accurate
25 statement that they would have the authority under the

1 original CCN to construct the original line without this
2 amendment?

3 A. I don't have a legal opinion to offer to that
4 question.

5 Q. Okay. Is there any harm to your organization
6 or your members if the landowner compensation for the
7 Tiger Connector is 150 percent of the fair market value
8 versus what the original offering landowners were along
9 the existing line?

10 A. Generally speaking, we believe landowners
11 along the line, the vast majority will benefit more
12 favorably from the 150 percent fair market value. There
13 could be some instances where the previous structure
14 could perhaps work better. That's where we as our
15 organization would encourage the Company to do what is
16 best for each specific landowner and we believe that
17 that is easy enough and flexible enough to be able to
18 figure out. So do what is in the best interest of the
19 landowner.

20 Q. Is it possible that landowners along the Tiger
21 Connector route might be worse off in terms of
22 compensation under these new amendments?

23 A. I mean, that's a question, Mr. Commissioner,
24 that's difficult to answer given that I don't know the
25 circumstance of each landowner that's potentially

1 affected by the proposal. When discussions were
2 happening in the legislature, we truly believed that 150
3 percent should be the base level or the floor as we
4 think about these types of takings. So you know, again
5 I would encourage and what we have continued to do is
6 encourage the Company to do what's right. As they look
7 at this Project, I would continue to assert that
8 obtaining easements from landowners is a drop in the
9 bucket compared to the overall cost of the Project. So
10 it certainly would behoove them given the track record
11 over the last decade let's step up efforts to be fair
12 with landowners in the form of compensation.

13 Q. Should the Company either by choice or by
14 Order provide the landowners along the Tiger Connector
15 route with the option to choose which compensation model
16 they would prefer to receive, which one would you -- is
17 there a preference in terms of which model your
18 organization would support?

19 A. I think offering that discretion depending on
20 what is the most financially beneficial for the
21 landowner would be amenable to us. How do you get
22 there? Well, I guess I would love for Invenergy to go
23 ahead and make that a corporate decision and work with
24 landowners accordingly. Absent that, then I would
25 encourage the PSC to consider including that in the

1 Order again always looking out for the interests of
2 landowners who are bearing the brunt of said Project.

3 Q. Are you aware of any concerns that have been
4 expressed by landowners about the agricultural
5 mitigation policies contained in the Landowners Protocol
6 or the Missouri Agriculture Impact Mitigation Protocol?

7 A. With regard to any type of utility
8 infrastructure, there are always concerns,
9 Mr. Commissioner, with construction as well as
10 maintenance of the rights-of-way or easements. In this
11 case with a Project of this scale, yes, we hear
12 repeatedly from our farmers and ranchers about concerns
13 about how it will impede their operations, their current
14 operations on a daily basis, but we also have to
15 continue to note that as technology evolves in
16 agriculture and more technology is adapted on the farm,
17 there will be hindrances or interruptions potentially
18 with how people are able to operate. Not only that, but
19 we have generational farms as they look at how to bring
20 the kids home to the farm. We have so many of our
21 members that are diversifying their income streams by
22 pursuing agritourism, for instance.

23 It's hard to imagine a young couple wanting to
24 do agritourism on an operation that's now what you see
25 are these large structures that the family never wanted

1 to begin with. So there are things to be considered
2 that a farm family it's not just the day-to-day
3 operations but for those who are going to follow mom or
4 dad or grandma and grandpa on the farm, they will be
5 dealing with these structures for the rest of their
6 working lives.

7 Q. Are you aware of any landowners sharing any
8 industry best practices with Grain Belt beyond what has
9 already been incorporated into the protocols?

10 A. I don't know. I'm not aware.

11 Q. Have you or anyone from your organization
12 requested any additional changes to either the Landowner
13 Protocols or the Missouri Agriculture Impact Mitigation
14 Protocol?

15 A. Not to my knowledge. Well, excuse me,
16 Mr. Commissioner. We did -- I will say last summer we
17 did encourage the Company to consider burying the line.
18 That was one thing that we did offer as a recommendation
19 as we thought about how to limit the impact or the
20 surface impact to landowners as much as possible. So
21 that is one instance.

22 Q. Yesterday I had a fairly lengthy inquiry with
23 Company witness Mr. Chandler about landowner concerns
24 and requested modifications to the siting of the route
25 in response to landowner feedback received at the

1 community meetings. You were present to hear that
2 exchange. Are there any statements you would like to
3 have an opportunity to respond to?

4 A. I was not there. I would say generally
5 speaking though our members have been very vocal about
6 any type of utility infrastructure that it needs to be
7 minimally as intrusive as possible. So following
8 existing rights-of-way, following section lines, going
9 along highway corridors, et cetera. So that would go
10 along with this Project as well.

11 Q. Yesterday in testimony the Company said that
12 they had moved the original proposed line that had
13 multiple irrigation issues, circle irrigations that were
14 eventually mitigated on the new route. Would you find
15 that to be an accurate statement?

16 A. I can't answer. I don't know.

17 Q. We also talked yesterday about the USDA
18 organic rating that is received from the USDA. Are you
19 aware of the Company addressing those issues for those
20 farmers?

21 A. I am not aware.

22 Q. During the public testimony part of this
23 process, we heard from landowners who said if they just
24 moved the lines, you know, 50 feet to one direction or
25 another because of intentional trees or hedge rows that

1 have been aging for a while that they would be more
2 amenable to a voluntary position. Are you aware has the
3 Company had any outreach with any of those individuals
4 who testified in the public hearings and made requests
5 that would have to do with micrositing?

6 A. I'm not aware, Mr. Commissioner. I guess
7 generally speaking I would hope that the Company is
8 taking seriously the concerns of those along the
9 affected route and considering accommodations or
10 concessions, but I'm not aware of the specifics that
11 you're referencing.

12 Q. Okay. Thank you. My last question is, in
13 general, if this amendment -- so we've already
14 established that without these amendments the Company
15 can still proceed with the original line. With these
16 amendments added if they were to be adopted, do you
17 believe that your members would be better off or worse
18 off given the material changes to the Project?

19 A. Mr. Commissioner, it's difficult to say. You
20 know, what I would say is once this Project was proposed
21 last summer post legislative session what we were
22 adamant about as Farm Bureau and the other organizations
23 was that the Company should follow the spirit of HB
24 2005, all of the provisions of HB 2005 in light of Tiger
25 Connector. So what we continue to advocate for is that

1 this Company, a for-profit private entity go above and
2 beyond in trying to prove itself that it is here to
3 benefit Missourians and recognizes the brunt that
4 Missouri landowners are being asked to bear for a
5 Project that they didn't ask for. So that's what we
6 continue to hear from our members over and over again
7 that failed policies have allowed this to happen and
8 here we are trying to fight for private property rights.

9 Q. Okay. Thank you. Yesterday in testimony it
10 was mentioned that of the 87 percent of Phase I that was
11 already under contract that 70 percent of that was in
12 Phase I in Missouri. Do you agree with that statement?

13 A. Can you please repeat that, Mr. Commissioner.

14 Q. Sure. Yesterday in testimony information was
15 presented that of the 87 percent that was already under
16 existing contract for lease agreements that 70 percent
17 of them were in the state of Missouri along the Phase I
18 route. Do you think that is accurate?

19 A. I don't know. The Company hasn't shared that
20 with me directly. So I don't know.

21 Q. Okay. My follow-up question is of the 70
22 percent who are already under lease agreement who have
23 already committed to a payment structure, a payment
24 compensation, have you heard from them in support of
25 this Project?

1 A. What I can say in all confidence,
2 Mr. Commissioner, that the very few people I have heard
3 from in my three years as Farm Bureau President who
4 support the Project pales in comparison to the number of
5 people who I hear from on a regular basis who adamantly
6 oppose the Project.

7 Q. So you would suggest that of the 30 percent
8 remaining to not have a voluntary compensation lease
9 agreement in place that they are more vocal than the 70
10 percent who are already under agreement?

11 A. I think, Mr. Commissioner, I think we need to
12 -- how do you define voluntary for those that have,
13 quote, unquote, entered into an agreement. I hear from
14 members all the time who feel like they are being beat
15 into submission and feel like they can't bear the burden
16 of legal costs and go ahead and sign an agreement to try
17 to forego that added expense. So if that's voluntary,
18 that's certainly a broad way to look at it. But for our
19 folks who don't want to fight the fight, we continue to
20 contend that's not fair.

21 COMMISSIONER HOLSMAN: All right. Well, I
22 appreciate you taking time to offer your testimony
23 today. Judge, that concludes my questions. Thank you.

24 JUDGE DIPPELL: Thank you. Commissioner
25 Coleman, you had a question.

1 COMMISSIONER COLEMAN: Thank you, Judge.

2 QUESTIONS

3 BY COMMISSIONER COLEMAN:

4 Q. So yesterday there was some conversation with
5 witnesses regarding job creation. And often when these
6 types of projects or cases come before the Commission
7 that's one of the concerns and issues. It was brought
8 up at the local public hearing in Mexico the fact that
9 there may or may not be significant job creation that
10 goes into play with building this connector and what's
11 going to be there, what type of benefit to the community
12 or the counties there would be after completion. Does
13 Farm Bureau have an opinion on the job creation
14 information we've been given and/or any evidence that in
15 previous projects that you all have monitor that you
16 really see that happening?

17 A. Commissioner, it's an excellent question, but
18 I don't have anything on hand based on previous
19 experience with projects that lend our members to
20 talking a great deal about job creation, because so many
21 times those jobs are such short term in nature the
22 longer impacts for the communities aren't there in a
23 sustainable fashion.

24 Q. And that's one of the things that long-term
25 impact that, you know, it's up in the air.

1 A. That's correct. The workers are there for a
2 short time, but the infrastructure, the towers are there
3 in perpetuity and that's the point of our members.

4 COMMISSIONER COLEMAN: Thank you. Thank you,
5 Judge.

6 JUDGE DIPPELL: Any other Commission
7 questions? All right. I think that takes care of the
8 Commission questions. Is there any further
9 cross-examination based on questions from the
10 Commissioners? I'm going to throw it out to the group.
11 I'm not seeing anything. Is there redirect?

12 MR. HADEN: Just one quick question.

13 REDIRECT EXAMINATION

14 BY MR. HADEN:

15 Q. So going back to Commissioner Holsman's
16 questions, he was asking you about the 70/30 split of
17 landowners that have made a deal -- well, or potentially
18 I think we heard yesterday in testimony too there has
19 been a little bit of litigation, just a very few cases
20 to completion. Has anybody come to you as a member who
21 has already either through litigation or voluntary sale
22 had an easement go to Grain Belt and say that they
23 really support the Project now and want it to move
24 forward?

25 A. No.

1 Q. You haven't heard from a single person that's
2 told you that?

3 A. No.

4 MR. HADEN: Thank you.

5 JUDGE DIPPELL: Thank you, Mr. Hawkins. That
6 concludes your testimony and you may be excused.

7 THE WITNESS: Thank you.

8 (Witness excused.)

9 JUDGE DIPPELL: All right. Then I think we
10 are ready to go back to Clean Grid Alliance.

11 MR. BRADY: Thank you, Your Honor. We call
12 Michael Goggin.

13 JUDGE DIPPELL: And Mr. Goggin is on the
14 WebEx.

15 THE WITNESS: Hi.

16 JUDGE DIPPELL: If we can pull him up.
17 Mr. Goggin, go ahead and I'm going to swear you in so I
18 can see you and then we'll get you pulled up on the
19 screen for everyone else. Raise your right hand if
20 you're able. Do you solemnly swear or affirm that the
21 testimony you're about to give at this hearing will be
22 the truth?

23 THE WITNESS: Yes.

24 JUDGE DIPPELL: And then would you please
25 state your name and spell it for the court reporter.

1 THE WITNESS: Sure. It's Michael Goggin.

2 That's M-i-c-h-a-e-l G-o-g-g-i-n.

3 JUDGE DIPPELL: Okay. Thank you. Now
4 everyone can see you, I think. So go ahead with your
5 testimony or your witness, Mr. Brady.

6 MR. BRADY: Thank you, Judge.

7 MICHAEL GOGGIN,
8 having been first duly sworn, was examined and testified
9 as follows:

10 DIRECT EXAMINATION

11 BY MR. BRADY:

12 Q. Mr. Goggin, who is your employer?

13 A. I'm employed by Grid Strategies LLC.

14 Q. What is your title with Grid Strategies?

15 A. Vice President.

16 Q. Did you prepare a written testimony for this
17 case on behalf of Clean Grid Alliance?

18 A. Yes.

19 Q. Did you prepare a written rebuttal testimony
20 accompanied by 11 schedules identified as MG-1 through
21 MG-11?

22 A. Yes.

23 Q. And did you prepare written cross-surrebuttal
24 testimony on behalf of Clean Grid Alliance?

25 A. Yes.

1 Q. Looking at those two pieces of testimony, do
2 you have any corrections to the testimony or schedules?

3 A. No.

4 Q. If I were to -- Are your answers to the
5 questions in the rebuttal and cross-surrebuttal
6 testimony true and accurate to the best of your
7 knowledge?

8 A. Yes.

9 Q. If I were to ask you today the same questions
10 contained in the rebuttal and cross-surrebuttal
11 testimony, would your answers be substantially similar
12 to what is in the written testimony you've prepared?

13 A. Yes.

14 MR. BRADY: The testimony that Mr. Goggin has
15 verified was prefiled in the case, the rebuttal
16 testimony and Schedules MG-1 through MG-11 were prefiled
17 on April 19 and identified in EFIS as Item No. 135. The
18 cross-surrebuttal testimony was prefiled in this case on
19 May 15 and is identified in EFIS as Item No. 161. Your
20 Honor, I move for the admission of these documents into
21 the record with the verified rebuttal testimony and
22 Schedules MG-1 and MG-11 marked as Exhibit No. 600 and
23 the cross-surrebuttal testimony that Mr. Goggin has
24 verified marked as Exhibit 601.

25 JUDGE DIPPELL: Yes. Thank you. Those are

1 the numbers that I have. And I'm sorry. You offered
2 that testimony?

3 MR. BRADY: Yes. I move for the admission of
4 that testimony.

5 JUDGE DIPPELL: Is there any objection to
6 Exhibits 600 and 601? Seeing none, I will admit those.

7 (CLEAN GRID ALLIANCE EXHIBITS 600 AND 601 WERE
8 RECEIVED INTO EVIDENCE AND MADE A PART OF THIS RECORD.)

9 JUDGE DIPPELL: If there's any confusion on
10 the numbering, I renumbered those. They were originally
11 I think numbered with the schedules separately but I put
12 the schedules as part of the testimony.

13 MR. BRADY: Correct. The schedules, he only
14 has Schedules MG-1 through MG-11. Those are all with
15 the rebuttal testimony and included as Exhibit No. 600.

16 JUDGE DIPPELL: Yes. Okay then. We're ready
17 then for cross-examination. Is there going to be
18 cross-examination of this witness? Yes. Okay.

19 MR. AGATHEN: Yes, Your Honor.

20 JUDGE DIPPELL: MEC.

21 MS. WHIPPLE: Thank you, Your Honor. Yes.
22 Good afternoon, Mr. Goggin.

23 THE WITNESS: Good afternoon.

24 CROSS-EXAMINATION

25 BY MS. WHIPPLE:

1 Q. Would you tell us, please, are Kansas
2 renewable resources delivered over Grain Belt going to
3 be in your opinion a higher or a lower cost option than
4 the resources that are currently available in Missouri?

5 A. As I explained in my rebuttal testimony, they
6 would be lower costs and this is due to their higher
7 capacity factor on their grid of productivity which
8 reduces the cost per MW hour because those fixed costs
9 of building and operating the plant can be spread across
10 more MW hours; and as I establish in my testimony, there
11 is a significant difference in the productivity of both
12 wind and solar resources higher in the Kansas resource
13 area than resources that are available in Missouri. I
14 also in my testimony note that there are significant
15 impediments to interconnecting new renewable resources
16 in Missouri or in the MISO footprint due to transmission
17 congestion that is increasing interconnection costs
18 resulting in Project curtailment and congestion that
19 reduces the value of wind and solar resources available
20 in MISO and other parts -- in Missouri and other parts
21 of MISO. And Grain Belt Express Project would be able
22 to deliver the resources directly from Kansas and
23 overcome those limitations.

24 MS. WHIPPLE: Very good. Thank you. That's
25 all I had, Your Honor.

1 JUDGE DIPPELL: Is there anything from
2 Associated Industries.

3 MR. ELLINGER: No questions, Judge. Thank
4 you.

5 JUDGE DIPPELL: Sierra Club.

6 MS. RUBENSTEIN: No questions. Thank you.

7 JUDGE DIPPELL: Renew Missouri.

8 MS. GREENWALD: No, thank you.

9 JUDGE DIPPELL: Grain Belt.

10 MR. SCHULTE: Yes, please, thank you. Good
11 afternoon, Mr. Goggin, if it's afternoon where you're
12 joining us from.

13 THE WITNESS: It is good afternoon.

14 CROSS-EXAMINATION

15 BY MR. SCHULTE:

16 Q. I note that before your tenure at Grid
17 Strategies you were at the American Wind Energy
18 Association now known as American Clean Power
19 Association?

20 A. That's correct.

21 Q. And overall you've been working on renewable
22 energy transmission and electricity market issues for
23 over 15 years?

24 A. That's correct.

25 Q. And over those 15 years, do you work closely

1 with wind and solar developers?

2 A. Yes, I do.

3 Q. Have you reviewed the 74 percent capacity
4 factor assumption put forth by Grain Belt in this
5 proceeding?

6 A. I've done some percent reanalysis, yes.

7 Q. Are you familiar with the amount, and I'll
8 direct you to your, I want to make sure I call it the
9 right thing, cross-surrebuttal testimony.

10 A. Yes.

11 Q. Around page 5, actually specifically on page 5
12 you reference that capacity factor?

13 A. Yes, I'm there.

14 Q. Actually I'm going to have you flip to page 6
15 if you don't mind. It's line number 110.

16 A. I'm there.

17 Q. I'm sorry. I'm going to actually start up on
18 108 so we get a complete sentence. As noted on page 6
19 of Repsher's report, -- and that's Mark Repsher, the
20 witness for Grain Belt; is that correct? That's your
21 understanding? Sorry.

22 A. Yes.

23 Q. Just want to make sure the record is clear.
24 -- around 9,300 MW of nameplate wind and solar capacity
25 (6,021 MW of wind plus 3,262 MW of solar) can be

1 interconnected to the 5,000 MW Grain Belt Express line
2 because of the synergies between wind and solar
3 resources due to the negative correlation in the timing
4 of their output. Did I read that correctly?

5 A. That's correct.

6 Q. And based on your experience working with wind
7 and solar developers, do you believe it's reasonable to
8 assume that wind and solar developers would be willing
9 to interconnect or willing to interconnect their
10 Projects to the Grain Belt Project at levels that exceed
11 the 5000 MW capacity?

12 A. I do. And this is commonly done with building
13 transmission lines, interconnecting renewable resources
14 to have the renewable nameplate capacity exceed the
15 rated capacity of the transmission line. This can be
16 done because particularly with wind and solar resources
17 there are negative correlations, as I explained in my
18 testimony, between their output profiles. Solar
19 obviously produces during the day. Wind in most of the
20 country, including Kansas, produces, tends to produce
21 more at night. That's true seasonally as well. Solar
22 obviously is greatest in the summer. Wind resources
23 tend to be highest in the other months of the year. And
24 so when you put these two resources together, because
25 they're not intended to produce at the same time, you

1 can install more nameplate capacity relative -- of the
2 renewable resources relative to the capacity of the
3 transmission line.

4 There's also geographic diversity among wind
5 and among solar resources, particularly for wind
6 resources. Just as weather systems move through wind
7 projects, they're not in lockstep. There's a pretty
8 significant drop in the correlation between the output
9 of any two wind projects as the geographic distance
10 between them increases. And given the amount of, you
11 know, wind resources and solar resources we're talking
12 about here, there's inherent geographic diversity just
13 would have to spread those resources over a significant
14 geographic area to be able to build that much wind and
15 solar. And that geographic diversity from having those
16 disbursed resources is going to further reduce the
17 coincidence and the correlations between any two wind
18 projects or any two solar projects. That allows you to
19 get even more of that geographic diversity that helps
20 ensure that the other resources are not intended to
21 produce all at the same time. I think when you take
22 account for those diversity benefits it makes the amount
23 of curtailment that you would expect during the few
24 hours per year when you do have total wind and solar
25 output exceeding the capacity of the transmission line

1 it keeps that curtailment at an acceptable level that is
2 economically palatable to get to the renewable
3 developers.

4 MR. SCHULTE: No further questions. Thank
5 you, Mr. Goggin.

6 JUDGE DIPPELL: Thank you. Is there anything
7 from Public Counsel.

8 MR. WILLIAMS: Thank you, no.

9 JUDGE DIPPELL: Staff.

10 MR. PRINGLE: Yes, Judge. Thank you. Good
11 afternoon, Mr. Goggin.

12 THE WITNESS: Good afternoon.

13 CROSS-EXAMINATION

14 BY MR. PRINGLE:

15 Q. And on questioning from Grain Belt you
16 mentioned that you had done a cursory review of the
17 Guidehouse study?

18 A. Yes, that's correct. Of the Repsher report I
19 believe is what I was being asked about, yes.

20 Q. For the record that's the PA Consulting study.
21 Apologies for that. With regard to Mr. Repsher's study,
22 did you review any workpapers regarding his proposed 74
23 percent capacity factor?

24 A. No, I did not. When I said "cursory," what I
25 was referring to is in my testimony I discussed the

1 typical capacity factors for weighted solar projects
2 that we see in the Kansas resource area. I would note
3 that those are increasing over time as technology for
4 both wind and solar improves. But doing that analysis,
5 you know, I think wind and solar alone could probably --
6 the amount of capacity that is being talked about in the
7 report could support a capacity factor of 80 percent of
8 the 5000 MW rated capacity of the transmission line. So
9 it would be delivering on average about 4000 MW over the
10 5000 line. That's without taking into account any
11 curtailment that might reduce that somewhat.

12 As I noted just a few minutes ago, because of
13 the diversity output, the diversity of the output
14 profiles I expect that curtailment to be minimal
15 acceptable. So I think, you know, based on kind of that
16 starting 80 percent figure I think 74 percent figure
17 after accounting for that curtailment is highly
18 reasonable.

19 Q. You did not review any workpapers about that;
20 that was your answer, correct?

21 A. That's correct, I did not review any of the
22 workpapers.

23 Q. And what is your definition of a capacity
24 factor?

25 A. So capacity factor is the amount of energy

1 produced over some period divided by the total
2 theoretical maximum that that resource based on its
3 nameplate capacity could have produced.

4 MR. PRINGLE: Thank you, sir. No further
5 questions.

6 JUDGE DIPPELL: Are there questions from
7 Missouri Landowners Alliance.

8 MR. AGATHEN: Yes, thank you, Your Honor.
9 Good afternoon, Mr. Goggin.

10 THE WITNESS: Good afternoon.

11 CROSS-EXAMINATION

12 BY MR. AGATHEN:

13 Q. My name is Paul Agathen, and just for your
14 benefit you should know I represent a group of clients
15 who are opposed to the Grain Belt line. Could you turn,
16 please, to page 4 of your rebuttal testimony?

17 A. Okay. I'm there.

18 Q. At lines 87 to 90 you state that the Grain
19 Belt Project will be capable of delivering 2500 MW to
20 delivery points in Missouri. Is that essentially
21 correct?

22 A. That's correct.

23 JUDGE DIPPELL: Sorry, Mr. Goggin. Did you
24 answer?

25 THE WITNESS: I'm sorry. I said that's

1 correct.

2 JUDGE DIPPELL: Yes. We didn't catch that.
3 Thank you.

4 BY MR. AGATHEN:

5 Q. Not all 2500 MW will necessarily be purchased
6 by utilities which serve retail customers in Missouri,
7 will it?

8 JUDGE DIPPELL: Sorry, Mr. Goggin. Can you
9 get just a little closer to your mike. For some reason
10 you cut out when you're further back.

11 THE WITNESS: I'm not sure what happened.

12 JUDGE DIPPELL: It's still very quiet.

13 THE WITNESS: Can you hear me now?

14 JUDGE DIPPELL: We can but you're very quiet
15 for some reason.

16 THE WITNESS: I'll speak loudly. I'm not sure
17 what changed. My understanding is that at this point in
18 what's been publicly disclosed that the contracting for
19 that 2500 MW that would be delivered into Missouri, some
20 of that has not been determined in terms of who will be
21 the offtaker.

22 BY MR. AGATHEN:

23 Q. Right. But portions of that 2500 MW could be
24 delivered to other states. For example, it could be
25 delivered to Inergy, right?

1 A. That's theoretically possible.

2 Q. And TVA?

3 A. I suppose that's also theoretically possible.
4 That would require, you know, a contract and a
5 transmission reservation to make those types of flows
6 but it's theoretically possible.

7 Q. Isn't TVA able to tie directly to the
8 connection at Associated's substation?

9 A. I'm not sure.

10 Q. Actually couldn't some or all of the 2500 MW
11 be delivered to virtually every state within MISO?

12 A. That would also require being able to deliver
13 within MISO. It would require a study of the
14 point-to-point transmission, the feasibility of doing a
15 point-to-point transmission delivery and, you know,
16 there is congestion within MISO that in many cases may
17 prevent that type of delivery.

18 Q. But there are cases where it could be
19 delivered to other states in MISO?

20 A. It's theoretically possible, sure.

21 Q. On a different subject, could you please turn
22 to page 6 of your rebuttal testimony?

23 A. I'm there.

24 Q. Are you there?

25 A. Yes, I'm there.

1 Q. At lines 133 to 135 you state that according
2 to Lawrence Berkeley National Laboratory, in 2022 the
3 average capacity factor for Kansas wind projects
4 installed from 2016 to 2020 was 43.4 percent, correct?

5 MR. BRADY: I'm going to object. Actually,
6 Mr. Goggin, you said -- you misstated 2022. I think in
7 the record the testimony says 2021. Data shows that in
8 2021 the average capacity factor for Kansas wind
9 projects installed during 2016 to 2020 was 43.4 percent.

10 JUDGE DIPPELL: Mr. Agathen, can you give me
11 that citation again.

12 MR. AGATHEN: That was at page 6 of his
13 rebuttal testimony, lines 133 to 135. And he's citing
14 the Lawrence Berkeley National Laboratory.

15 JUDGE DIPPELL: Okay. I'm there.

16 MR. BRADY: And I was just correcting he had
17 said it was 2022. I'm just saying it was actually 2021.
18 So I'm fine with the question going forward.

19 JUDGE DIPPELL: All right. The witness may
20 need the question asked again.

21 BY MR. AGATHEN:

22 Q. Does that --

23 A. That's okay. I heard it. Yeah, the text says
24 2021. That was the analysis I did, not did 2022.
25 Notwithstanding that, the statement is correct.

1 Q. The 43.4 percent capacity factor for Kansas?

2 A. That's correct. For the projects that were
3 installed in the 2016 to 2020 period.

4 Q. And I don't know if you know the answer to
5 this or if you've got the document in front of you, but
6 according to that same Lawrence Berkeley National
7 Laboratory report, a comparable capacity factor for wind
8 generation in Iowa was 41 percent, correct?

9 A. I don't have the document in front of me, but
10 I have no reason to doubt that.

11 Q. Thank you. This comparison of different
12 capacity factors for different states in different areas
13 for wind generation, they don't account for the
14 difference in the cost of transmission facilities needed
15 to get the power to Missouri, do they?

16 A. No. This is just a capacity factor analysis,
17 and I would note given the example you cited of the Iowa
18 capacity factor, there is significant transmission
19 congestion between Iowa and Missouri that would limit
20 the deliverability of those wind resources barring
21 significant transmission upgrades that would also have a
22 cost.

23 Q. In other words, just looking at capacity
24 factors doesn't take into account any cost of
25 transmission?

1 A. No, it's not intended to.

2 Q. Do you perhaps have a copy with you of the
3 Report and Order on Remand from the Commission's last
4 case? That was --

5 A. I do not.

6 Q. Could you accept subject to check that in that
7 Order at page 26, paragraph 80, the Commission found
8 that a levelized cost analysis is the best financial
9 technique to compare different energy generation
10 sources?

11 A. Subject to check, I believe you that that's
12 what the statement says.

13 Q. Thank you. And again subject to check, would
14 you accept that the Order at page 26, paragraph 81,
15 stated that Grain Belt witness David Berry testified
16 credibly that the Grain Belt Project's total delivered
17 cost of energy is less than any other renewable or
18 conventional energy alternative such as Missouri wind
19 energy, Missouri utility scale solar energy and combined
20 cycle gas energy?

21 A. Subject to --

22 MR. BRADY: Can you -- I just have a copy of
23 the Order in front of me now. Was that paragraph 81?

24 MR. AGATHEN: Yes, page 26.

25 MR. BRADY: Okay.

1 THE WITNESS: Subject to check, I take you at
2 your word that that's correct.

3 BY MR. AGATHEN:

4 Q. Thank you. So Mr. Berry's levelized cost
5 analysis which compared the total delivered cost of
6 energy for Missouri, including the cost of transmission,
7 was in addition to just the cost of energy, right?

8 MR. BRADY: I'm going to object. The document
9 says what the document says. So he doesn't need
10 Mr. Goggin to confirm what the Commission has already
11 acknowledged in its prior Order. He's fine to cite
12 that. It's already in the record. He's fine to cite it
13 in his brief.

14 MR. AGATHEN: I just want to make sure that
15 the record is clear that Mr. Berry's testimony in that
16 case did include the cost of transmission.

17 JUDGE DIPPELL: I'm not sure the witness has
18 an answer to that and as has been stated the Order says
19 what the Order says and I've admitted the Order. So you
20 can argue that. You can cite to that in your brief and
21 argue that in your brief and explain it. I don't think
22 we need the witness to explain that. But if you have
23 questions about the witness's knowledge, go forward and
24 ask those questions.

25 BY MR. AGATHEN:

1 Q. I'll start with a different question here
2 then. Did you perform a levelized cost analysis
3 comparing the total cost of bringing Grain Belt energy
4 to Missouri to the total cost of other potential
5 alternatives such as wind generation in Iowa?

6 A. I did not.

7 Q. Do you know of any other witness in this case
8 who performed such a levelized cost analysis?

9 A. I do not.

10 Q. Did you conduct a levelized cost analysis
11 comparing the delivered cost of solar power from
12 different locations?

13 A. I did not.

14 Q. On a different subject, could you turn to page
15 18 of your testimony.

16 MR. BRADY: Of the rebuttal testimony?

17 MR. AGATHEN: Yes.

18 MR. BRADY: Thank you.

19 THE WITNESS: I'm there.

20 BY MR. AGATHEN:

21 Q. At line 30 -- excuse me. At line 357, you
22 referred to an area called MISO north; is that correct?

23 A. That's correct.

24 Q. Do you know what states are included in that
25 area?

1 A. When I was using that, I was referring to
2 everything except MISO south which is generally -- so
3 it's everything except Arkansas, Louisiana and
4 Mississippi and parts of Texas.

5 Q. Do you know what states specifically would be
6 included in MISO north, at least some of them?

7 A. Sure. It would be the Dakotas, Missouri,
8 Minnesota, Iowa, Wisconsin, parts of Illinois and
9 Indiana, I guess part of Kentucky. Did I say Michigan?
10 Michigan as well.

11 Q. You know your geography. Could you turn,
12 please, to page 22 of your rebuttal testimony.

13 A. I'm there.

14 Q. Are you there?

15 A. Yes, I'm there, yes.

16 Q. Beginning at line 452, you state that Kansas
17 renewable resources delivered via the Project are a
18 lower cost option than resources available in or
19 currently deliverable to Missouri and then you go on to
20 state three or four reasons why that is so. Is that
21 generally correct?

22 A. That's correct.

23 Q. In conjunction with that statement, did you
24 conduct a levelized cost of energy analysis which
25 included the cost of building the Grain Belt Project?

1 A. I did not. That's because as I explained in
2 the section many of the costs associated --

3 JUDGE DIPPELL: Hang on just a minute,
4 Mr. Goggin. Sorry. You kind of cut out again.

5 THE WITNESS: Sure, I can start over. I did
6 not and that's because as I explained in this section
7 transmission congestion --

8 JUDGE DIPPELL: I'm going to have to stop you
9 again. You keep coming and going. Do you have another
10 microphone or?

11 THE WITNESS: I can switch to my phone.

12 JUDGE DIPPELL: Yeah, we can try you without
13 your video to see if that is better.

14 Let's go off the record quickly.

15 (Off the record.)

16 JUDGE DIPPELL: Let's go ahead and go back on
17 the record. I'm sorry, Mr. Agathen, you may have to
18 repeat your question.

19 BY MR. AGATHEN:

20 Q. Okay. Mr. Goggin, do you want me to repeat it
21 or are you aware of what the question was?

22 A. I remember where we were. So I was stating
23 that I did not conduct a levelized cost analysis
24 because, as I explained in the section, there are
25 significant transmission upgrade costs that would be

1 associated with making resources within MISO
2 deliverable. The cost and timeline associated with
3 those upgrades is uncertain, but it is lengthy in terms
4 of the delays and the costs are quite significant now.
5 There's also congestion and curtailment risks that will
6 severely affect the value of those resources within MISO
7 whereas those concerns do not apply to the resources
8 delivered via Grain Belt because the transmission line
9 is resolving that congestion. And because of the
10 uncertainty around those costs and reductions in value
11 and delays associated with MISO resources, I did not
12 think it was feasible to do an apples to apples
13 comparison between resources delivered via Grain Belt
14 versus resources available within MISO.

15 Q. You wouldn't happen to know how Mr. Berry
16 conducted the analysis of both scenarios, do you?

17 A. Not off the top of my head, no, I don't.

18 MR. AGATHEN: That's all I have, Judge.

19 JUDGE DIPPELL: Thank you. Is there any cross
20 from the Ag Associations.

21 MR. HADEN: None, Your Honor, thank you.

22 JUDGE DIPPELL: Ms. Stemme.

23 MS. STEMME: No questions.

24 JUDGE DIPPELL: Are there questions for
25 Mr. Goggin from the Commissioners? Mr. Chairman.

1 CHAIRMAN RUPP: Thank you, Judge.

2 QUESTIONS

3 BY CHAIRMAN RUPP:

4 Q. This is Commissioner Rupp, Mr. Goggin.

5 A. Hello.

6 Q. I believe it was your -- I think it was your
7 rebuttal page 5, line 93.

8 A. Okay, I'm there.

9 Q. Is that where you were responding to witness
10 Eubanks from the Commission the difference between
11 capacity factor and capacity value? I don't have it
12 pulled up in front of me.

13 MR. BRADY: Chairman, I think that's his
14 cross-surrebuttal.

15 CHAIRMAN RUPP: Cross-surrebuttal. Thank you.

16 MR. BRADY: Mr. Goggin, it's your
17 cross-surrebuttal page 5, line 93.

18 CHAIRMAN RUPP: Thank you. Now I have it
19 pulled up.

20 BY CHAIRMAN RUPP:

21 Q. Can you explain the difference between
22 capacity factor and capacity value that you are
23 referencing in line 93 to 95?

24 A. Sure. So capacity factor, and that's what the
25 74 percent offered by Repsher's report is a measure of

1 energy production. As I answered a few minutes ago,
2 that's measured as the actual production of energy
3 divided by the maximum theoretical amount. And so
4 capacity factor was an energy measure. Capacity value
5 is a measure of capacity that is dependable or useful
6 for meeting peak electricity demand needs and that is
7 generally lower for wind and solar resources. And
8 because witness Stahlman is referring to how MISO and
9 SPP accredit renewable resources, that deals with
10 capacity value issues, but it's a totally separate issue
11 from capacity factor. And that's the point I was making
12 there is that 74 percent capacity factor is a different
13 measure than the capacity value that MISO and SPP
14 accredit renewable resources.

15 Q. Thank you for clarifying that. And I believe
16 it was in your testimony you espoused the belief that
17 wind generated in Kansas, you know, is more beneficial
18 to driving down wholesale prices than wind generated in
19 Missouri and I understood your reasoning.

20 A. Yes, that's correct. And that's because the
21 resources are more productive. So there's more energy
22 being injected relative to resources in, you know,
23 Missouri and, you know, all wind and solar resources
24 offers into the market at essentially zero marginal cost
25 reflecting that as no fuel price. So adding those zero

1 marginal cost resources depresses on energy market
2 prices which is beneficial for consumers and having more
3 MW hours injected causes more price reduction.
4 Similarly on the capacity side, similar to adding
5 additional supply into the capacity market tends to
6 drive down price. More productive wind and solar
7 resources generally offer a higher capacity value. So
8 similarly you would have greater benefit from the more
9 productive resources relative to those that are
10 available in Missouri.

11 Q. And those would be contracted by a regulated
12 utility through a PPA?

13 A. That's likely how it would play out. In the
14 energy market impact, that's going to -- the benefit
15 would accrue in the MISO market regardless of those
16 contracts. The energy market kind of operates on a
17 separate plane from bilateral power purchase agreements
18 that are outside of the wholesale market. Regardless of
19 the contracts, you know, the wind being injected into
20 Missouri in the energy market is going to have that
21 effect of power prices regardless of who the offtaker,
22 the customer is.

23 Q. Now, this is a Missouri specific question and
24 you may have no knowledge of this. But are you aware
25 that the Missouri Office of Public Counsel in many rate

1 cases have put forth the argument that purchased power
2 agreements entered into by Evergy have been bad business
3 decisions and noneconomical for Missouri ratepayers
4 compared to other generation options they could have
5 explored? Have you read that or are you familiar with
6 that at all?

7 A. I am not familiar with that.

8 CHAIRMAN RUPP: Great. That is all I had.
9 Thank you.

10 JUDGE DIPPELL: Thank you. Are there any
11 other Commission questions?

12 COMMISSIONER HOLSMAN: Yes, Judge. I have a
13 couple.

14 JUDGE DIPPELL: Go ahead, Commissioner.

15 COMMISSIONER HOLSMAN: Okay. Thank you.

16 QUESTIONS

17 BY COMMISSIONER HOLSMAN:

18 Q. Thank you for your testimony, Mr. Goggin. We
19 have heard throughout this hearing from different
20 stakeholders that one of the concerns is there haven't
21 been generator contracts established. And in your
22 testimony you mention that that's not uncommon for
23 renewable energy projects to have the transmission go
24 first and that a field of dreams scenario, if you build
25 it they will come, is in place. Can you speak a little

1 bit to your belief that the contracts from generators
2 will be there if this Project moves forward.

3 A. Yes. And your statement is absolutely right
4 that if you build it they will come is the mantra. My
5 experience over the last 15 plus years has been that
6 every time there's been proactive transmission expansion
7 to resource areas with high quality renewable resources
8 that those transmission lines are typically immediately
9 subscribed if not oversubscribed just given the
10 compelling economics of the wind and solar resources in
11 those areas, and this is based on experience in Texas
12 with the competitive renewable energy zone transmission
13 lines, in other parts of MISO with the multi-value
14 projects, in the Southwest Power Pool with the priority
15 projects there, experience in California with the
16 Tehachapi wind transmission interconnection as well as
17 other expansions of transmission.

18 Everywhere this has happened to a renewable
19 resource area the renewable resources have been built
20 and contracted as the transmission line came into
21 service, and this kind of timing mismatch with building
22 the transmission before the generation and the contracts
23 for the generation are in place is necessary because of
24 the type of mismatch and that it takes so much longer to
25 permit and build a transmission line than it takes to

1 permit and build a renewable resource; that the
2 transmission line necessarily has to go first.

3 Q. Thank you. MISO has been working to implement
4 its long-range transmission plan focusing on Tranche 1
5 currently. Maybe those projects will start coming
6 online in 2028. Is it possible that the Grain Belt
7 Project would become unnecessary because the Tranche 1
8 projects are being built?

9 A. I address this in my rebuttal testimony. I
10 think that the Tranche 1 projects are going to be highly
11 beneficial. I would note that transmission development
12 takes a long time. There often are permitting
13 challenges that can delay those projects. This was the
14 case for many of the multi-value projects, the last
15 being round of transmission expansion that MISO
16 undertook. I would note that one of those transmission
17 lines is still not completed, you know, over a decade
18 later because of permitting and other objections.
19 That's the Cardinal-Hickory Creek transmission line. So
20 there is that risk of those projects not being in place
21 by the currently scheduled date.

22 I would also note that there's extremely high
23 demand for renewable resources with the Inflation
24 Reduction Act providing long-term and expanded tax
25 credits for wind and solar resources. I think that

1 trend is going to continue. There's going to be
2 continued economic interest in procuring renewable
3 resources. And so I think it's likely that there's
4 going to be demand for such a large amount of renewables
5 that both the Tranche 1 projects and the Grain Belt
6 Express Projects will be needed to meet that demand.

7 Q. Is it fair to say that you have witnessed or
8 experienced, been a part of, studied, a number of
9 transmission projects around the country?

10 A. Yes. At this point I think I've had some
11 engagement with every major --

12 JUDGE DIPPELL: I'm sorry, Mr. Goggin. You
13 faded out for us here in the hearing.

14 THE WITNESS: I just said that I think over
15 the last 15 years I've had some engagement in every
16 major transmission expansion for renewable resources in
17 the United States.

18 JUDGE DIPPELL: Thank you.

19 BY COMMISSIONER HOLSMAN:

20 Q. Okay. So I'm going to ask this. This is my
21 final question. In the state of Missouri, we have a
22 long history of property rights and valuing our
23 landowners and having agriculture be if not the leading
24 major industry in this state. How would you compare the
25 way that the Company has approached interacting with the

1 landowners and the compensation packages that have been
2 provided versus other states and other companies in
3 other projects that you've been a part of?

4 A. So I should disclose that my engagement with
5 this process and with those other transmission lines has
6 not really delved into that issue. So I don't think I
7 have the knowledge to answer that question. I deal more
8 with kind of the issues I talked about here in my
9 testimony, the resource supply and economics and the
10 need. I don't get into the landowner interactions in my
11 work. I don't have the knowledge to answer that
12 question unfortunately.

13 JUDGE DIPPELL: Commissioner Holsman, can you
14 repeat that for the court reporter? You cut out.

15 BY COMMISSIONER HOLSMAN:

16 Q. I said can you acknowledge that there has been
17 a tension between those stakeholders and the other
18 projects you've been a part of?

19 A. Certainly, yes, there's always some
20 negotiation between the project developers and the
21 landowners. That's, you know, as is true with any
22 business transaction, there's going to be a negotiation.

23 Q. And the projects that you've been a part of
24 that have come to completion, the data and financial
25 projections that have been a part of that, have they

1 more likely been accurate or have come to fruition in
2 your experience?

3 A. Yes. I reviewed a number of retrospective
4 analyses that MISO and Southwest Power Pool and others
5 have done for transmission investments, and what they
6 found is that the benefits are as large if not larger
7 than what the expected going into the project -- into
8 the transmission project development. So the track
9 record has been that the benefits expand or exceed
10 expectations.

11 COMMISSIONER HOLSMAN: All right. Thank you
12 very much for your testimony today. Judge, that is all
13 I have.

14 JUDGE DIPPELL: Thank you, Commissioner. Are
15 there any other Commission questions? All right. Then
16 with that, I hate to break at the end of your testimony
17 but I think that we're overdue for a lunch break. Will
18 there be any further cross-examination of Mr. Goggin
19 based on those questions? How long?

20 MR. PRINGLE: Two questions.

21 JUDGE DIPPELL: Two questions. And will there
22 be redirect --

23 MR. BRADY: Yes.

24 JUDGE DIPPELL: -- at this point.

25 MR. BRADY: Yes.

1 JUDGE DIPPELL: Will it be extensive?

2 MR. BRADY: No.

3 JUDGE DIPPELL: Okay. Let's go ahead and
4 finish him then. So no cross-examination except for
5 Staff based on Commission questions. All right. Staff,
6 go ahead.

7 MR. PRINGLE: Thank you, Judge.

8 FURTHER CROSS-EXAMINATION

9 BY MR. PRINGLE:

10 Q. Mr. Goggin, can you hear me?

11 A. Yes.

12 Q. What is your definition of economic
13 feasibility?

14 A. Off the top of my head, I would say that it's
15 the ability of a proposed investment to generate
16 sufficient revenue to recover its costs with an adequate
17 rate of return to make the investment worthwhile to the
18 investors.

19 Q. And then in your opinion, would the most
20 economically optimal result be that the entire Project
21 is constructed?

22 A. I haven't gone into that in detail, but I
23 would say in general transmission does offer economies
24 of scale and larger investments tend to have a lower
25 cost for MW delivered and more benefits than smaller

1 investments, but I haven't done the detailed analysis
2 for the phases here.

3 MR. PRINGLE: Thank you, sir. No further
4 questions.

5 JUDGE DIPPELL: Any other cross-examination
6 from MLA, Ag Association.

7 MR. AGATHEN: None from me, Your Honor.

8 MR. HADEN: No, Your Honor. Thank you.

9 JUDGE DIPPELL: Ms. Stemme.

10 MS. STEMME: No.

11 JUDGE DIPPELL: Is there redirect?

12 MR. BRADY: Yes.

13 Travis, I was concerned we weren't going to
14 get the economic feasibility question.

15 MR. PRINGLE: I'm always good for it.

16 REDIRECT EXAMINATION

17 BY MR. BRADY:

18 Q. Michael, can you hear me?

19 A. Yes.

20 Q. Great. Mr. Agathen had asked you some
21 questions about levelized cost of energy in his
22 questions relative to the last case, the EA-2016-0358.
23 Are you familiar -- You're familiar with levelized cost
24 of energy, correct?

25 A. That's correct.

1 Q. Are there -- and what did Mr. Repsher use for
2 his justification of economic feasibility in this case?

3 A. So it was heavily based around analysis of the
4 energy and capacity market impacts of the additional
5 supply. I think that's a reasonable method for the
6 analysis. At this point, you know, as I mentioned, the
7 potential cost of developing resources within MISO is
8 uncertain due to the need for transmission upgrades
9 there. Similarly the exact pricing of generation
10 contracts, wind and solar resource that would deliver
11 via the Grain Belt line is also not known. In the
12 absence of that information, I believe that looking at
13 wholesale market price impacts is a reasonable proxy for
14 the value of the line because it does reflect the
15 ability of, you know, low-cost power to flow over the
16 line and to be injected into MISO and especially into
17 Missouri.

18 And I will note that wholesale power prices
19 when there is reduction in a wholesale sale price of
20 energy and capacity that does tend to translate into
21 savings for customers because those market prices are
22 used as a benchmark against which generation contracts
23 are signed, against which resource -- or retirements are
24 evaluated and so there is a, you know, obviously how
25 those prices flow through the customers depends on the

1 contract structure. But over the medium to long-term
2 those prices do tend to translate into savings for
3 customers because they're used as a benchmark and they
4 derive resource pricing in the bilateral PPA market.

5 Q. Thank you. That was a little bit more than
6 what I was expecting. I think what you just gave me may
7 be the answer to my next question. So confirm that. So
8 you're familiar with levelized cost of energy. You've
9 nailed down and explained you've identified that you're
10 familiar with Mr. Repsher's analysis. And which
11 analysis would be better in this situation for economic
12 feasibility?

13 A. I think Mr. Repsher's analysis is a reasonable
14 way to estimate the feasibility and the economic
15 benefits of the line, you know, just given that there
16 are certain key inputs are not available to do the
17 levelized cost analysis. I would also note that the
18 levelized cost analysis while useful alone I think is
19 not sufficient for really evaluating costs and benefits
20 and part because levelized cost of energy is just a
21 measure of the cost of energy. It doesn't speak to the
22 value of that energy. It doesn't account for the cost
23 or value of capacity. As I noted, there's differences
24 in the capacity value that renewable resources delivered
25 through the line would be higher than that likely

1 offered by resources within MISO. As I mentioned, it
2 doesn't account for potential costs of upgrades for
3 transmission within MISO. In short, there's a number of
4 things that are not included in levelized cost of energy
5 analysis that, you know, make it useful but alone it's
6 not sufficient. So I think the analysis presented by
7 Mr. Repsher is a reasonable estimate of the value of the
8 line and the economic feasibility of the line.

9 Q. Does a levelized cost of energy account for
10 congestion?

11 JUDGE DIPPELL: The court reporter didn't
12 catch the answer. So we're going to have him repeat it.

13 BY MR. BRADY:

14 Q. Does a levelized cost of energy analysis
15 account for congestion?

16 A. It does not. Because the value of the --
17 congestion affects the value of energy as I explained in
18 my rebuttal testimony and if, you know, renewable
19 resources within MISO are generating at points on the
20 grid where there is significant congestion, that is
21 going to suppress the value of that energy and make it
22 less valuable for the customers, the people who are, you
23 know, receiving that power, and that is not accounted
24 for in levelized cost of energy analysis.

25 Q. Levelized cost of energy analysis does not

1 account for the change in locational marginal prices,
2 the changes in pricing across the footprint whereas does
3 PROMOD account for something like that? Does the
4 Repsher analysis account for that?

5 A. That's correct. The Repsher analysis would
6 account for those changes in prices, whereas levelized
7 cost of energy analysis would not.

8 Q. Would the type of analysis that Mr. Repsher
9 did account for reliability and resiliency?

10 A. To some extent it does reflect the analysis
11 that was presented by Guidehouse, as well as my own
12 analysis that I did of the value Grain Belt Express
13 would have offered during Winter Storm Elliott. That
14 also is not reflected in a levelized cost of energy
15 analysis, the ability to use the transmission line for
16 energy arbitrage, to receive capacity value during
17 events, during post-mortem operations and the severe
18 weather events would not be captured in a levelized cost
19 of energy analysis. It's another reason why levelized
20 cost of energy analysis can be useful, but it is not
21 sufficient critically for a line like Grain Belt Express
22 where it's been proposed to deliver power among
23 different RTOs.

24 MR. BRADY: Thank you, Michael. Thank you,
25 Your Honor. That's all I have.

1 JUDGE DIPPELL: Thank you. I believe,
2 Mr. Goggin, that completes your testimony and you may be
3 excused.

4 THE WITNESS: Great. Thank you.

5 (Witness excused.)

6 JUDGE DIPPELL: And we will take a lunch
7 break. Its 1:15 now, so return at 2:15. We can go off
8 the record.

9 (The noon recess was taken.)

10 JUDGE DIPPELL: We're back after our lunch
11 break. And we are ready to begin with Sierra Club's
12 witness. Sierra Club's attorney and its witness are
13 both remote. So we will see how this works.

14 MS. RUBENSTEIN: Hopefully you can see and
15 hear me. This is Sarah Rubenstein for Sierra Club.

16 JUDGE DIPPELL: We can see and hear you.

17 MS. RUBENSTEIN: Would it be helpful for me to
18 turn off my video when we call our witness.

19 JUDGE DIPPELL: Let's try with everybody and
20 their video and just see. If we have problems, then
21 we'll start with letting the attorney turn off their
22 video and then we'll try turning off the witness video.
23 We'll take it from there.

24 MS. RUBENSTEIN: Sounds good. We're ready to
25 go. We'd like to call our first witness, our only

1 witness, Michael Milligan.

2 THE WITNESS: Hello. I'm sorry I'm unable to
3 get my camera to work. It worked yesterday and it's not
4 going today. Would you like me to take a few minutes or
5 do you want to go ahead with voice only?

6 JUDGE DIPPELL: If there's no objection from
7 any attorneys, let's just proceed. Cameras may just
8 cause us problems anyway. If you are able, would you
9 please raise your right hand.

10 THE WITNESS: Yes.

11 JUDGE DIPPELL: Do you solemnly swear or
12 affirm that the testimony you're about to give will be
13 the truth?

14 THE WITNESS: Yes, I do.

15 JUDGE DIPPELL: All right. Then you may
16 proceed with your witness.

17 MS. RUBENSTEIN: Great. Thank you.

18 MICHAEL MILLIGAN,
19 having been first duly sworn, was examined and testified
20 as follows:

21 DIRECT EXAMINATION

22 BY MS. RUBENSTEIN:

23 Q. Could you please state your name for the
24 record?

25 A. Michael Milligan.

1 Q. And where are you currently employed?

2 A. I am self-employed. I work for Milligan Grid
3 Solutions, Inc. I am the principal consultant, chief
4 cook and bottle washer here.

5 Q. Great. And what is your business address?

6 A. My business address is 2875 South York Street
7 in Denver, 80210.

8 Q. Mr. Milligan, did you prepare and cause to be
9 prepared in this case your rebuttal testimony which I
10 believe has been marked Exhibit 850?

11 A. Yes, I did.

12 Q. And is the resume which is attached as
13 Schedule MM-1 to your rebuttal testimony a true and
14 correct copy of your resume?

15 A. Yes, it is.

16 Q. Do you have any changes or corrections to your
17 prefiled rebuttal testimony at this time?

18 A. No.

19 Q. So if I asked you the questions in your
20 rebuttal testimony at this time, would your answers be
21 the same?

22 A. Yes, they would.

23 Q. And the information in those answers is true
24 and correct to the best of your knowledge, correct?

25 A. Yes.

1 MS. RUBENSTEIN: Your Honor, I move for the
2 admission of Exhibit 850 in this case.

3 JUDGE DIPPELL: Would there be any objection
4 to Exhibit 850? That's 8-5-0. Seeing no objection, I
5 will admit that.

6 (SIERRA CLUB'S EXHIBIT 850 WAS RECEIVED INTO
7 EVIDENCE AND MADE A PART OF THIS RECORD.)

8 MS. RUBENSTEIN: And I tender the witness for
9 cross-examination. Thank you.

10 JUDGE DIPPELL: Thank you. Is there
11 cross-examination from MEC.

12 MS. WHIPPLE: Yes, Your Honor. Briefly,
13 please.

14 JUDGE DIPPELL: Go ahead.

15 MS. WHIPPLE: Good afternoon, Mr. Milligan.

16 THE WITNESS: Hello.

17 CROSS-EXAMINATION

18 BY MS. WHIPPLE:

19 Q. Would you please explain for us if and how the
20 Grain Belt line could benefit Missouri by reducing
21 congestion in the grid?

22 A. Yes. This is confirmed by a recent Department
23 of Energy transmission study, but what would happen is
24 that there are parts of Missouri that are subject to
25 higher prices, and the line would allow access to more

1 economic resources that may not otherwise be accessible,
2 and obviously the example of that would be wind
3 generation or any renewable generation in Kansas, and so
4 forth.

5 MS. WHIPPLE: Thank you. Your Honor, that's
6 all I had.

7 JUDGE DIPPELL: Is there anything from
8 Associated Industries.

9 MR. ELLINGER: Just a couple of very brief
10 questions, Judge.

11 CROSS-EXAMINATION

12 BY MR. ELLINGER:

13 Q. Mr. Milligan, can you hear me okay? This is
14 Marc Ellinger.

15 A. Yes, I can.

16 Q. And I'm actually going to kind of pick up
17 where counsel for MEC just left off because she covered
18 part of what my question was but I want to take the
19 second part of my question, which is by reducing the
20 congestion in the system, will that offer some benefits
21 to businesses and industries in the state of Missouri
22 which draw electricity off of the transmission system
23 across the state of Missouri?

24 A. Yes. Congestion costs are created when the
25 most economic resource is not available to be delivered

1 to the load center. And so when that congestion, you've
2 got an overloaded transmission line, for example, so
3 when that congestion is alleviated, that does allow
4 access to more economic resources which then translates
5 into a lower wholesale power cost. In any given hour,
6 for example, that cost may not be, you know, significant
7 but over time that would result in lower electric bills
8 to, you know, basically everybody in Missouri and
9 probably across the MISO footprint. So yes, the
10 congestion would benefit businesses in Missouri.

11 Q. And you kind of stepped into it right over the
12 other question I had which was while that cost may be
13 fairly marginal on a single hourly basis for large
14 industrial consumers, whether they're large
15 manufacturing facilities, mills, data centers, et
16 cetera, those cost savings over the course of a year
17 could be quite substantial, couldn't they?

18 A. They could. I want to add to that that a
19 large commercial industrial user may not be exposed
20 directly to the realtime electricity prices. Oftentimes
21 there's some sort of a tariff. If they were exposed
22 directly to those costs, then they would probably
23 experience a larger increase in cost with the congestion
24 and a larger reduction in cost without the congestion.

25 Q. And similarly by reducing congestion and

1 improving the transmission infrastructure, that also
2 allows businesses to have more dependable and reliable
3 electricity at a lower cost, doesn't it?

4 A. That's correct.

5 MR. ELLINGER: No further questions, Judge.

6 JUDGE DIPPELL: Thank you. Renew Missouri.

7 MS. GREENWALD: No questions. Thank you,

8 Judge.

9 JUDGE DIPPELL: Clean Grid Alliance.

10 MR. BRADY: No questions. Thank you.

11 JUDGE DIPPELL: Grain Belt.

12 MR. SCHULTE: No questions. Thank you.

13 JUDGE DIPPELL: Public Counsel.

14 MR. WILLIAMS: Thank you, no questions.

15 JUDGE DIPPELL: Staff.

16 MR. PRINGLE: Brief, Judge. Good afternoon,

17 Mr. Milligan. Can you hear me?

18 THE WITNESS: Yes, I can. Thank you.

19 CROSS-EXAMINATION

20 BY MR. PRINGLE:

21 Q. My name is Travis Pringle. I'm with Staff
22 Counsel. Just one question for you. Are you aware of
23 the potential for positive and negative impacts of the
24 Grain Belt Project into MISO?

25 A. Not so familiar with the negative impacts. My

1 expertise was really looking at the impact on the
2 operation and the planning of the grid. So you know, I
3 know that there may be some negative impacts but I
4 haven't seen them. I did look at MISO's recent
5 benefit-cost analysis of transmission and they found the
6 benefit-cost ratio ranging from 2.6 to 3.8, which
7 wouldn't directly be Grain Belt Express's benefit-cost
8 ratio, but the Grain Belt Express checks off all the
9 same types of boxes and the DOE study confirms that. It
10 connects two or more regions. It does alleviate some
11 congestion and it reduces the costs that we have today.

12 So you know, I can't speak to whether every
13 single dollar is included in those benefit-cost ratios,
14 but they're an extremely strong indicator that yes,
15 there are costs, of course, but those costs are
16 significantly outweighed by the benefits.

17 Q. You also mentioned the combining of two
18 different regions. In your opinion, is the most
19 economically optimal result that the entire Project is
20 constructed?

21 A. Let me make sure I understand your question.
22 So you're asking if the benefits would depend on the
23 entire Project being constructed; is that right?

24 Q. Yes, correct, the benefits in your analysis to
25 achieve these benefits the entire Project needs to be

1 constructed?

2 A. No, I wouldn't say that. You'd have to do an
3 individual valuation for different stages. It would be
4 reasonable to expect that a partial completion of the
5 Project would provide some benefits and the entire
6 Project completion would provide more benefits.

7 Q. Have you done that analysis on a
8 phase-by-phase basis as proposed by the Company?

9 A. I have not.

10 MR. PRINGLE: Thank you, sir. No further
11 questions.

12 THE WITNESS: Thank you.

13 JUDGE DIPPELL: Thank you. Are there any
14 questions from MLA.

15 MR. AGATHEN: Yes, Your Honor. Thank you.
16 Good afternoon, Mr. Milligan.

17 THE WITNESS: Hello.

18 CROSSEXAMINATIONBY MR. AGATHEN:

19 Q. My name is Paul Agathen. And I should tell
20 you I'm representing clients who are all opposed to the
21 Grain Belt Project.

22 A. Okay.

23 Q. Is it fair to say you've had considerable
24 experience with MISO's transmission planning process?

25 A. Yes.

1 Q. That even includes participation in MISO's
2 resource adequacy subcommittee, correct?

3 A. That's correct.

4 Q. Could you very briefly explain what is meant
5 by MISO's base case in its transmission planning process
6 and how the base case affects what new projects are
7 approved or not approved?

8 A. The base case -- I'm not sure. Which year are
9 you talking about?

10 Q. In any yearly cycle, doesn't MISO start off
11 with a base case and go from there?

12 A. Right. The base case is, you know, a
13 reasonably close representation to what is happening
14 today and/or what may be expected to happen in the
15 future given the existing resources and the existing
16 transmission.

17 Q. Are you aware that MISO currently does not
18 include the Grain Belt Project in its base case for
19 planning purposes?

20 A. Yes.

21 Q. If MISO did include the Grain Belt Project in
22 its base case, would that affect the modeling results
23 which determine which transmission projects will be
24 approved for the next round?

25 A. Possibly, yes. I can't really conjecture but

1 that's very possible.

2 Q. It's more than very possible; it's likely,
3 isn't it, if you add in the Grain Belt case to the base
4 case analysis?

5 A. Well, it's more complicated than that, because
6 it depends on the order in which the lines are added to
7 the analysis and the order in which the lines are built.
8 So I would say that, you know, MISO's finding a
9 benefit-cost ratio of let's round it sort of in between
10 about 3.0, and that's for a tranche of transmission. So
11 if you were to take out one line and put in Grain Belt
12 Express, I don't know precisely what that value would
13 be. If you simply added Grain Belt Express, then maybe
14 those benefit-cost ratios, I can't tell you the answer
15 because the math is pretty complicated, but maybe it
16 goes from 3.0 to 2.8 or 2.5.

17 Q. But the addition of MISO would have likely had
18 some effect?

19 A. I would expect so, yes.

20 Q. Thank you. On a different subject, could you
21 turn, please, to page 3 of your rebuttal testimony?

22 A. Okay.

23 Q. Beginning I think at line 15 you state that
24 planning for reliability is a complex mathematical
25 problem that uses various economic and reliability

1 computer models to address the most cost effective
2 approach to reliability. Is that essentially correct?

3 A. That's correct.

4 Q. In preparing your rebuttal testimony for this
5 case, did you run any of those computer models using
6 inputs related specifically to the Grain Belt Project?

7 A. I did not. As I stated previously, I relied
8 upon similar modeling done by the Department of Energy,
9 some National Lab studies and MISO itself.

10 Q. Relating specifically to the Grain Belt
11 Project?

12 A. No, not specifically the Grain Belt Project,
13 but the Grain Belt Project has many, many similarities
14 to both the DOE report calling for interregional
15 transmission, which Grain Belt does, and also to MTEP
16 which is connecting, depending which line you're looking
17 at, connecting SPP to MISO.

18 Q. Could you turn, please, to page 4 of your
19 rebuttal testimony.

20 A. Okay.

21 Q. In the middle of the page you include a
22 quotation from the U.S. Department of Energy report,
23 correct?

24 A. Yes.

25 Q. That document is still in draft form, is it

1 not, and out for public comment?

2 A. That's correct.

3 Q. Has a final report been published by the DOE?

4 A. Not to my knowledge.

5 Q. In that draft report or is that draft report
6 the same one you rely on beginning at page 5, line 9
7 through page 7, line 10 of your testimony?

8 A. Sorry. Just checking. Yes.

9 Q. Near the bottom of page 7 of your testimony
10 you quote a MISO report regarding the need for
11 additional transmission, correct?

12 A. Yes.

13 Q. And MISO did address that problem in recently
14 approving what's termed its Tranche 1 projects, did it
15 not?

16 A. I believe that's true.

17 Q. Don't some of the final Tranche 1 projects in
18 effect serve some of the same purposes as the Grain Belt
19 Project?

20 A. I believe so. Subject to check, yes.

21 Q. Isn't it true that MISO is in the process of
22 reviewing another set of new transmission lines in its
23 Tranche 2 analysis?

24 A. Yes.

25 Q. On a different subject, could you turn,

1 please, to page 10 of your rebuttal?

2 A. Okay. I'm there.

3 Q. Starting at line 1, you state that if adding
4 new transmission reduces operating costs by \$1 million
5 per month, that is the gross operational benefit of the
6 new line; is that essentially correct?

7 A. Yes.

8 Q. That statement doesn't factor in the cost of
9 building the new line, does it?

10 A. That's correct.

11 Q. Without factoring in all of the costs of the
12 line, you can't say that every addition to the
13 transmission system will be cost beneficial, can you?

14 A. Well, no, you can't say everything is cost
15 beneficial. This line -- my testimony was included to
16 indicate that this is an example of how you would get a
17 benefit from a transmission line and how you calculate
18 the gross benefit. So this does, in fact, recognize
19 that, you know, we're not including cost in this and
20 somewhere else we have to do the cost calculations. And
21 that's what MISO does in the MTEP studies.

22 Q. Fair enough. In order to make that
23 determination of whether a line is cost beneficial or
24 not, you need to employ the computer models you
25 mentioned at page 3, lines 15 to 17 of your testimony,

1 would you not?

2 A. That would be the most detailed and probably
3 the best way to do it, yes.

4 Q. At page 10 of your rebuttal starting at line
5 13, you state as follows: MISO shows how proposed new
6 transmission lines can be strategically located in weak
7 areas of the grid thereby alleviating the congestion and
8 eliminating the curtailment of wind. Is that generally
9 correct?

10 A. That's correct.

11 Q. And those are the issues which MISO addressed
12 in approving these Tranche 1 projects and is looking to
13 address in its Tranche 2 projects?

14 A. Yes.

15 Q. On a different subject. At page 11 of your
16 rebuttal at lines 12 to 15, I believe you're saying that
17 the cost of wind curtailment in MISO for the first seven
18 months of the year resulted in curtailment costs of
19 nearly \$11 million; is that correct?

20 A. Yes.

21 Q. First, what year are you talking about there?

22 A. I'm sorry? I lost the line number you're
23 looking at.

24 Q. Page 11, lines 12 to 15.

25 A. You know, I'd have to refresh my memory. I

1 believe that was 2021, but I would need to check that.

2 Q. Or close to that year at least?

3 A. Yes, close to that year.

4 Q. \$11 million of curtailment costs does not
5 factor in any of the costs of building the transmission
6 which would eliminate those curtailment costs, does it?

7 A. Could you repeat the question.

8 Q. Sure. The \$11 million of curtailment costs
9 which we just discussed does not factor in any of the
10 costs of building the transmission which would eliminate
11 those curtailment costs, does it?

12 MS. RUBENSTEIN: I'm going to object to the
13 question. He's misstating the witness's testimony.
14 He's actually sort of testifying for him. Mr. Milligan
15 did not say anything about costs exceeding the
16 curtailment costs.

17 JUDGE DIPPELL: Mr. Agathen, can you restate
18 your question.

19 BY MR. AGATHEN:

20 Q. Sure. We had already gone over the fact that
21 he agreed with this; that at page 11, lines 12 to 15, I
22 believe you were saying that the cost of wind
23 curtailment in MISO for the first seven months of the
24 year resulted in curtailment costs of nearly \$11
25 million. You generally agreed with that, right?

1 A. Is that directed to me?

2 Q. Yes.

3 A. Yes, but I want to point out that my \$30 per
4 MW hour is an example as I think the language makes
5 clear. I know the number of MW hours that were
6 curtailed. I did not look at the price differential.
7 And so using \$30 is a fairly, you know, conservative
8 price between, for example, wind and gas. Of course,
9 gas prices fluctuate tremendously. So if the price
10 differential is \$30, then the curtailment costs would
11 have been \$11 million.

12 Q. Okay. So I'll get back to my other original
13 question I guess. That \$11 million you just mentioned
14 of curtailment costs, that doesn't factor in any of the
15 costs of building the transmission which would eliminate
16 those curtailment costs, does it?

17 MS. RUBENSTEIN: I'm going to make the same
18 objection. He has not testified to anything about
19 eliminating those costs and benefits.

20 JUDGE DIPPELL: I think that was the question.

21 MS. RUBENSTEIN: Well, he's asking and making
22 an assumption. I think he can ask the question as to
23 whether or not they would be offset, but he's assuming
24 the answer in his question.

25 MR. AGATHEN: I don't think so, Your Honor.

1 JUDGE DIPPELL: Ask your question one more
2 time, Mr. Agathen.

3 BY MR. AGATHEN:

4 Q. The \$11 million of curtailment costs that you
5 just mentioned does not factor any of the costs of
6 building the transmission which would eliminate those
7 curtailment costs, does it?

8 JUDGE DIPPELL: Have you previously asked him
9 if the costs are factored in? I missed if you did.

10 MR. AGATHEN: I think that's the question
11 that's being objected to.

12 JUDGE DIPPELL: I think the objection is that
13 the question is basically two parts. Can you break it
14 up and ask them.

15 BY MR. AGATHEN:

16 Q. Does the \$11 million of curtailment costs
17 factor in any of the costs of building the transmission?

18 A. No, that's part of the -- If that curtailment
19 can be alleviated, that would be part of the benefit,
20 but the 30 million example costs of curtailment is not
21 part of the cost of building the line.

22 Q. 30 or 11 million?

23 A. I'm sorry. 11 million.

24 Q. Okay. Thank you. Isn't it true that it's not
25 generally considered to be cost effective to build all

1 of the transmission which would be necessary to
2 eliminate 100 percent of the cost of congestion?

3 A. Most likely not. I mean, there is a certain
4 level of congestion that is, you know, generally
5 acceptable. I mean, it's sort of a cost-benefit study.
6 And you might conclude -- For example, and I'm making up
7 the number, you might conclude that we're willing to
8 live with 5 percent or 10 percent congestion because the
9 cost of alleviating that extra 5 or 10 percent with
10 transmission may not be cost effective.

11 Q. And isn't one purpose of the computer models
12 that you mention at page 3 of your testimony to
13 determine which transmission additions are and are not
14 cost effective?

15 A. The models that you're referring to
16 essentially will evaluate the cost effectiveness in the
17 operation of the system. So if that's what you're
18 asking me, I guess my answer would be yes.

19 Q. Thank you. That's what I was trying to ask
20 you.

21 A. Okay.

22 Q. Turn to page 12 of your testimony. At lines 3
23 and 4, you state that the Grain Belt Project would
24 reduce congestion, correct?

25 A. Yes.

1 Q. And then you discuss at lines 11 to 19 MISO's
2 proposed transmission lines would also reduce
3 congestion, correct?

4 A. Yes.

5 Q. And then moving to page 12, line 13 of your
6 testimony, you state that the benefit-cost ratio of the
7 new MISO lines ranges from 2.6 to 3.8; is that correct?

8 A. Yes.

9 Q. And as you explained, that means that for each
10 dollar spent on these MISO transmission projects,
11 there's a benefit ranging from \$2.60 to \$3.80; is that
12 correct?

13 A. That's correct.

14 Q. Are you aware of any studies which have
15 calculated a cost-benefit ratio for Grain Belt utilizing
16 the same general methodologies used by MISO?

17 A. I'm not aware of any specific Grain Belt
18 analysis; but as I stated earlier, I'm aware of the DOE
19 study which you're right is in draft form which says
20 that the highest value transmission is likely between
21 SPP and MISO and I'm aware that much of the MISO
22 transmission need is also in that same region. So I
23 would expect that you're asking me earlier if MISO goes
24 ahead and builds a bunch of other transmission that the
25 value of the Grain Belt Express may not fall in this

1 range. I would be extremely surprised if the
2 benefit-cost ratio fell a lot lower. I mean, I cannot
3 imagine that it would be a very small number. When I
4 was at NREL, we started a very large transmission study
5 called the Seam Study and that Seam Study looked at an
6 even larger scale build-out of transmission and my
7 former colleague Dale Osborn at MISO led a lot of the
8 early MISO thinking about a very large grid, and I don't
9 recall off the top of my head but the Seam Study was
10 looking at far greater transmission build-out than we
11 would get if you toss in Grain Belt Express with MISO's
12 Tranche 1 and Tranche 2 for that matter, and the
13 benefits are pretty dramatic.

14 Q. But you haven't -- excuse me. Go ahead.

15 A. So I haven't calculated those.

16 Q. Were you done?

17 A. I think so. Sorry about that, yes.

18 Q. It's all right. But you said you haven't
19 calculated a cost-benefit ratio specifically for Grain
20 Belt, right?

21 A. That's correct.

22 Q. At page 15 of your testimony at line 6 you
23 state that the Grain Belt line will undoubtedly pay for
24 itself, correct?

25 A. I did.

1 Q. Okay. We do have Grain Belt's estimates for
2 the cost of the Project, correct?

3 A. Yes.

4 Q. Have you yourself performed an analysis which
5 specifically attempted to quantify the benefits of the
6 Grain Belt Project?

7 A. No.

8 Q. Did you quantify any of the net benefits
9 resulting from any of the supposed advantages which you
10 attribute to the Grain Belt Project?

11 A. Not specifically to the Grain Belt Project.

12 MR. AGATHEN: Thank you. That's all I have,
13 Your Honor.

14 JUDGE DIPPELL: Thank you. Anything from the
15 Ag Associations.

16 MR. HADEN: No, Your Honor.

17 JUDGE DIPPELL: And Ms. Stemme.

18 MS. STEMME: No questions.

19 JUDGE DIPPELL: Any questions from, and let me
20 break this down, are there any questions from the
21 Commissioners here sitting beside me? Seeing none. Are
22 there any questions from the Commissioners online?

23 COMMISSIONER HOLSMAN: I have a couple, Judge.

24 COMMISSIONER HAHN: No questions.

25 COMMISSIONER HOLSMAN: I would yield the

1 Chairman if he has questions.

2 JUDGE DIPPELL: Mr. Chairman.

3 CHAIRMAN RUPP: Thank you, Commissioner. This
4 is Commissioner Rupp. Just one quick question.

5 QUESTIONS

6 BY CHAIRMAN RUPP:

7 Q. How would you define economic feasibility?

8 MR. AGATHEN: Inside joke, sir.

9 THE WITNESS: Okay. Shall I answer that or
10 no?

11 CHAIRMAN RUPP: It's okay. Thank you for your
12 testimony.

13 THE WITNESS: Okay. Thank you.

14 JUDGE DIPPELL: Commissioner Holsman.

15 COMMISSIONER HOLSMAN: All right. Thank you,
16 Judge. Good afternoon. Thank you for being here to
17 testify today.

18 THE WITNESS: Thank you.

19 QUESTIONS

20 BY COMMISSIONER HOLSMAN:

21 Q. You talked to Mr. Agathen about congestion,
22 and would you be able to specifically address whether
23 this Project would benefit Missouri by removing
24 congestion? Can you answer that question in simple
25 terms?

1 A. I'm struggling to see if I could answer it in
2 simple terms. I can't for sure say that Grain Belt
3 would result in reduction in congestion. I would
4 strongly suspect that it would.

5 Q. Okay. Can you suggest or affirm would it help
6 address some of the negative, the indigo and purple
7 pricing that we've seen in the SPP and MISO footprints?

8 A. I am not specifically familiar with those.

9 Q. All right. A significant modification for
10 this Project is to drop significantly more power and to
11 do so at two points of interconnection. Can you speak
12 to how this modification improves or brings greater
13 value to Missouri utilities and their customers?

14 A. Generally, yes, there's going to be more
15 drop-off points, if you will, for the energy, and so any
16 of that economic energy that's being shipped along Grain
17 Belt Express now has an additional or two additional
18 potential outlets. And so whenever the cost of energy
19 from Grain Belt is advantageous for the customers in
20 that area, they're now getting access, that would be
21 beneficial to them.

22 The other really big benefit that nobody has
23 asked me about is the resilience benefit of this line
24 and large transmission generally. We saw with, you
25 know, recent large storms that, you know, it's critical

1 to have a large and a strong transmission backbone that
2 connects you with the neighbors. And you know, Grain
3 Belt Express by itself is probably not enough per se but
4 neither is Tranche 1 of MISO build-out. It's not -- So
5 what Grain Belt does and sort of the ultimate build-out
6 is to connect all the way from Kansas through SPP into
7 MISO, drop off at the co-ops in Missouri and on to PJM.
8 So in a severe storm that might hit Missouri, you've got
9 a lot of potential neighbors that you could draw on that
10 you can't draw on today. If Grain Belt is in addition
11 to some of the Tranche 1 lines that MISO built, so much
12 the better. But we know that you've got to make the
13 grid bigger than the storm if you want to weather the
14 storm. No pun intended there.

15 Q. Would you in that same vein agree that the
16 bidirectional flow then would also be an important
17 resiliency factor?

18 A. Sure. My understanding is that that has not
19 -- the permitting has not been applied for, but I think
20 even without that if Missouri is in the middle of a big
21 storm and there is a risk to losing power, it's going to
22 be all hands on deck. We don't care if there's an
23 agreement. We don't want the grid to go down. So you
24 would have imports to the extent that they're physically
25 possible regardless of whether you've got some sort of a

1 power purchase agreement from the other side or
2 something like that. You know, we saw that with the
3 previous storms when power was flowing from SPP to MISO
4 or to PJM or back again kind of depending on where the
5 storm goes. And Grid Strategies did a really nice
6 analysis that kind of shows the progression of where the
7 storm is, the prices are high, you start importing from
8 the neighbor. The storm moves. Then when you get out
9 from underneath that storm you can recover and maybe
10 have some extra to send to the neighbor who is
11 underneath the storm.

12 As we see more, you know, extreme weather,
13 whether it's from climate change or not, you know, I
14 think these big transmission lines are going to be
15 critical in helping us to mitigate or if we're lucky to
16 totally avoid these big grid blackouts that we've seen
17 in the last few years. I'm sorry if that's more than
18 you wanted.

19 Q. No, no, that's fine. Are you familiar with
20 any utilities in Missouri facing generation capacity
21 restraints?

22 A. I've not really evaluated that. I can't
23 answer that.

24 Q. All right. My last question deals with your
25 testimony that discusses what was referred to as a one

1 in ten or one day in ten years loss of load expectation,
2 or LOLE, planning standard. Would the Project improve
3 Missouri's reliability and resource adequacy as it
4 relates to that?

5 A. Yeah. Pretty much any addition to the grid,
6 this may be more than you want also, but typically like
7 when MISO is doing their resource adequacy study, they
8 aim for a one day in ten loss of load expectation and
9 colloquially that means you drop load one day out of ten
10 years. There are some nuances around that that we
11 probably don't want to get into here. When MISO does
12 that, they're largely looking at their own footprint.
13 So now you have a transmission line that connects you
14 into Kansas, and this loss of load, part of the term is
15 loss of load expectation, right? That loss of load is
16 really a carryover from the utilities of the 1960s when
17 if I don't have sufficient resources in my own pocket, I
18 will probably lose load. So now really the correct
19 interpretation of loss of load, I don't know how you're
20 going to make a good acronym out of this, but it would
21 be like the probability of emergency import from the
22 neighbor or something like that. And so whether the
23 line would expressly increase MISO's one day in ten LOLE
24 as they calculate it, I don't know, because that depends
25 on how they would consider the Grain Belt Express and

1 the resources that are being delivered but, in fact,
2 physically, yes, it would increase the reliability of
3 the Missouri system and MISO generally.

4 Q. Looking at that standard given the volatility
5 of weather and increasing extreme weather events, do you
6 believe the one in ten LOLE standard is the most
7 appropriate planning standard? Is it still adequate
8 given our current climate?

9 A. That's a good question. I believe that the
10 one in ten standard, I've never really seen any
11 technical or economic justification for why we chose one
12 day in ten. My theory is it's a nice round number. I
13 don't know. But one of the difficulties with the way
14 that we calculate the one day in ten is that we
15 typically don't have a good wide range -- let me restate
16 that. We typically don't have a good long range weather
17 record and similar consistent long-term demand pattern.
18 And so if you take a look at any ten-year period, let's
19 say the ten-year period that preceded Uri, I think we
20 had another storm about ten years before that, just
21 imagine that you have ten years without a severe storm
22 and you say okay, I'm fine one day in ten. One year
23 goes by and now all of a sudden Uri is on the horizon.
24 Because of that large storm, you're not going to need
25 your one day in ten. So I think that the metric itself,

1 yes, needs to be addressed, and I'm part of the task
2 force with ESIG, the Energy Systems Integration Group,
3 that we've called for better reliability measures. And
4 sort of the companion piece that we're calling for is
5 that we need good, better, long datasets that capture
6 the weather so that we can do a better job of
7 evaluating. What happens with Uri, is Uri going to
8 throw me out of a one day in ten and throw me into a one
9 day per year, or who knows, even worse. We want to be
10 sure that we build the system to protect -- A big
11 transmission line or a collection of big transmission
12 lines is one of the best ways to guard against those
13 kinds of things because, you know, Uri may be a one day
14 in twenty event but you look at the tremendous costs
15 even to loss of life but all the tremendous costs and,
16 you know, as a ratepayer I'm not real excited about
17 paying for my electricity or transmission either but I'd
18 rather pay a little extra for transmission as an
19 insurance policy so that if I can meet, or MISO can meet
20 the one day in ten this year, I would really like them
21 to be able to meet the one day in ten next year when we
22 have Uri version 2.0 or something like that.

23 Q. Do you think this Project has black start
24 capabilities assistance? Do you think that if the grid
25 went down completely and we had to black start, do you

1 think Dodge City, Kansas could fire up mid MO?

2 A. That's beyond my technical capabilities. I
3 know that black start is a huge technical problem just
4 doing a black start. You don't see experiments with how
5 to do black start very often, because A, it's hard but
6 B, you don't want to subject the grid to outage. I have
7 no idea how to answer your question. Black starts
8 generally are going to be very, very difficult. We want
9 to avoid those at all cost.

10 COMMISSIONER HOLSMAN: I appreciate you taking
11 time today. Judge, that is all the questions I have.
12 Thank you.

13 JUDGE DIPPELL: Thank you. Any other
14 Commission questions? I have a list of questions to ask
15 you myself and some of these are kind of lengthy. So if
16 you don't understand, ask me to repeat.

17 THE WITNESS: Okay.

18 QUESTIONS

19 BY JUDGE DIPPELL:

20 Q. So on let's start with on page 5 of your
21 rebuttal testimony --

22 A. Okay.

23 Q. -- you refer to the Department of Energy
24 National Transmission Needs Study Draft for Public
25 Comment which was issued on February 2023. You state on

1 lines 12 to 14 the Grain Belt Express connects the
2 plains with the Midwest which is one of the highest
3 value pair of regions to connect according to the DOE
4 study. Can you explain what's meant by this statement?

5 A. Yes. You know, I think it's unfortunate that
6 the DOE report drew their own set of regions, and you
7 can see that on page 11 of my -- sorry, page 6 of my
8 testimony, and unfortunately none of those correspond
9 directly to the market areas like SPP and MISO, and so
10 on.

11 However, the plains area is generally SPP and
12 the Midwest is generally MISO. And so my statement is
13 stating that the Grain Belt Express would connect the
14 plains, read that as SPP, with the Midwest, read that as
15 MISO. The highest value pair of regions to connect
16 means that primarily from congestion but also by being
17 able to deliver more economic energy and alleviate some
18 of the price differentials that are already in Missouri
19 today, I think in particular southeast Missouri, this
20 would be an example of a line that would have the
21 highest benefit to build.

22 Now, whether it's Grain Belt Express or
23 another similar line, it sort of doesn't matter as far
24 as what the DOE is saying. They're saying that a line
25 or a network of lines that connects these areas would be

1 among the most important lines to build in the country.

2 Q. Thank you. On page 54 of the DOE study,
3 that's Schedule MM-3 to your rebuttal, it states --

4 A. Okay.

5 Q. -- additionally, HVDC connections that span
6 interconnection seams enable generation from renewables
7 to be shared more readily between interconnections,
8 which makes renewable generation less variable and more
9 reliable. Do you agree with that statement?

10 A. Yes, I do.

11 Q. And can you explain that?

12 A. Yeah. The U.S. Power System is broadly
13 divided into three synchronous regions. What
14 synchronous means is we have alternating current. It's
15 alternating a little bit differently in the west than it
16 is in the east and differently than Texas. And so in
17 order to connect, for example, the mountain region that
18 the DOE looked at to the plains region, you would
19 generally need to do some sort of a conversion from the
20 AC electricity in the west to the AC in plains and the
21 only, it's not the only, but the only practical way to
22 do that is by building the DC tie of some sort or a DC
23 line so that you take the AC on one side and you take
24 the alternating current basically out. You convert it
25 to a direct current. Then at the other end you convert

1 it back to an alternating current that matches the
2 frequency characteristics of the receiver. And so
3 that's kind of a complicated way of saying that there's
4 certain points in the U.S. that if you want to connect
5 them together you have to go through this DC conversion
6 process. But at the end of the day, that process really
7 isn't, I mean, electrically it's different, but it
8 allows me to connect more regions more broadly if I have
9 that DC interface than I could without the DC.

10 So for example, Grain Belt Express if it were
11 an AC line and it connected from Kansas and if it wanted
12 to try to connect into Colorado, for example, it
13 wouldn't really be able to do that without some sort of
14 a DC interface to get there. With a DC interface, you
15 could, in theory, you could take Grain Belt Express and
16 extend it from, I don't know, Utah to Indiana but you
17 would have to go through some DC conversion to go that
18 far. There's some other issues like losses and other
19 things you'd have to worry about as well.

20 Q. Okay. Thank you. The doe Study Executive
21 Summary provides general transmission need comments by
22 region. Western Missouri is included in the plains
23 region, as we were just discussing, and central and
24 eastern Missouri are included in the Midwest region. On
25 page Roman Numeral IX of the Executive Summary among the

1 list of various needs the DOE states a plains region
2 need is increased transfer capacity between plains and
3 its neighbors on all sides including across both
4 interconnection seams. Do you agree with that
5 statement?

6 A. Yes.

7 Q. And on page Roman Numeral X of the Executive
8 Summary, among the list of various Midwest region needs
9 it states that the need is improved system reliability
10 and resilience and it lists three bullet points there.
11 Do you follow that?

12 A. Sorry. I just lost my copy of that. If you
13 could bear with me or else you can read it to me and
14 I'll get it.

15 Q. I can read it. It's kind of lengthy but I can
16 read it.

17 A. Could you just give me a second and I'll get
18 that. I had it pulled up. I apologize for that.

19 Q. Did you find it?

20 A. Yes. It's coming up as we speak. I'm not
21 having very good technology luck today I'm afraid. I've
22 got this. Could you remind me of the page number.

23 Q. Yes. It's Roman Numeral X of the Executive
24 Summary under Midwest. It's the Midwest region needs
25 and the first one is improve system reliability and

1 resilience. And then under that are three bullet
2 points, and I guess I should have just gone ahead and
3 read it out loud for people that don't have the report
4 right in front of them.

5 The first bullet point is Midcontinent
6 Independent System Operator, or MISO's renewable
7 integration impact assessment, shows that the MISO
8 transmission system maintains reliability up to 30
9 percent renewable energy generation without significant
10 additional operational support.

11 Accordingly, the effort required to plan for,
12 support and operate new resources reliably as they are
13 integrated with the grid substantially increases at
14 renewable penetration levels beyond 30 percent of an
15 annual load served. Transmission infrastructure must
16 ensure reliable operations when more than 40 percent
17 renewable energy is incorporated in the MISO territory.

18 The second bullet point is the MISO region was
19 unable to import additional capacity during the February
20 2021 cold weather event negatively impacting resource
21 adequacy. Increased bidirectional transfer capabilities
22 can improve system reliability during extreme weather
23 events.

24 And the third point is generation retirements
25 in MISO could result in capacity shortfalls as early as

1 2024. And my question is, do you agree with those
2 statements?

3 A. Yes, I do. I've not carefully evaluated the
4 last bullet talking about the reliability and the
5 capacity shortfalls, but I know that that's been a
6 concern of MISO. So I would say with that possible
7 caveat, yes, I agree with that.

8 Q. Okay. Thank you. Do you know if the DOE
9 National Transmission Needs Study may be used to
10 possibly select national transmission corridors?

11 A. I can't answer that for sure, but I think
12 that, you know, typically when the DOE comes out with a
13 large report such as this one and they had a lot of
14 experts, a lot of, you know, technical review, once it
15 is finalized, which I expect it will be in largely the
16 same form it's in today, a lot of folks in the grid
17 industry will, power system industry, will take this not
18 as a recipe book necessarily but as sort of a general
19 guide for this is one of the few national studies that
20 have looked at transmission and the problem that's
21 before us. And I think MISO at some point said things
22 are moving so fast that we need transmission planning to
23 move at least that fast. And I think that these points
24 in the DOE study draft are kind of saying the same
25 thing.

1 MISO can get to 30 percent, MISO said that,
2 without any significant changes but once we start
3 getting much above that to 40 percent, we're going to
4 need transmission which actually provides a lot of
5 flexibility in power system operations. It provides,
6 you know, the resource adequacy that's discussed here on
7 the page in front of us and can help with the
8 resilience. So the transmission I think in the U.S. is
9 going to be critical. It can help with MISO's capacity
10 shortfalls, if those do turn out to, you know, happen.

11 Well, Grain Belt Express isn't going to be
12 done by 2024, but in the future as resources are
13 retiring within MISO, a stronger transmission connection
14 outside of MISO will help with that and the utilities in
15 Missouri, for example, can either go under contract with
16 the power purchase agreement or otherwise, you know,
17 secure cost effective resources to the extent they're
18 available in regions that would not otherwise be
19 accessible without not only just Grain Belt Express but
20 without this stronger national grid that I think DOE is
21 really calling for.

22 Q. Okay.

23 A. Did I answer your question?

24 Q. You did. You did. I thank you. On page 5 of
25 the study, it cites to Section 216(a)(2) of the Federal

1 Power Act with the further detail in footnote 10.

2 A. I'm sorry?

3 Q. Page 5.

4 A. Page 5 of the study, okay.

5 Q. And then it's got like it lists the statutory
6 section in footnote 10. Are you familiar with the
7 Federal Power Act in this Section 216(a)(2)?

8 A. Not specifically. I mean, I'm vaguely aware
9 that it exists. I don't know the details of what it
10 says.

11 Q. Are you familiar with the term National
12 Interest Electric Transmission Corridor or NIETC?

13 A. Generally. I don't know the specifics.

14 Q. Can you tell me generally what that is?

15 A. Well, all I know about it is it's a
16 transmission corridor that has some sort of national
17 interest. I believe that conveys it sort of special
18 status, but beyond that I don't really know what the
19 implication of being designated NIETC is.

20 Q. Okay. I'm skipping some of my questions based
21 on that answer. Hang on just a minute.

22 A. Okay.

23 Q. You mentioned that Missouri utilities would
24 have a broad access to projects when they issue
25 all-source procurements, this is on your rebuttal at

1 page 17, and receive additional resource adequacy
2 benefits?

3 A. Yes.

4 Q. Must a utility utilize a capacity expansion
5 model when performing their IRP analysis in order to
6 achieve that outcome?

7 A. Generally, yes. You want to see how the new
8 resource or potentially new resources are going to
9 affect your system. Yeah, you would probably do
10 something like that and it would most likely be through
11 the IRP.

12 Q. Would any other kind of model suffice like a
13 production cost model or a network reliability model?

14 A. Probably all of the above. I mean, you know,
15 if we're looking at the loss of load expectation and
16 there's various metrics that can be derived from that.
17 Those can be calculated by a production cost model.
18 They can also be calculated by a more focused
19 reliability model and loss of load probability model as
20 it's called. You also need to know whether the resource
21 in question, you know, you're thinking about building or
22 contracting for, whether the energy is going to be
23 deliverable and that's not just a yes or no answer.
24 It's how often am I expecting congestion, do I need to
25 build my own transmission line to get there, all of

1 those kinds of things. To answer your question, I guess
2 all of those models would be useful in figuring out, you
3 know, trying to anticipate what the impact of that
4 future resource or proof of resources would be. And
5 that's true whether they're in your region or if you're
6 trying to contract with your resource that's far away in
7 Kansas or something like that.

8 JUDGE DIPPELL: That's all the questions I
9 have. Thank you for your patience there.

10 THE WITNESS: Thank you. I attest that I do
11 have a coat and tie on even though you can't see me.

12 JUDGE DIPPELL: We could see you earlier.

13 THE WITNESS: Fair enough.

14 JUDGE DIPPELL: Is there any further
15 cross-examination based on questions from the
16 Commissioners or myself from MEC.

17 MS. WHIPPLE: No, Your Honor, thank you.

18 JUDGE DIPPELL: Associated Industries.

19 MR. ELLINGER: No, Judge, thank you.

20 JUDGE DIPPELL: Renew Missouri.

21 MS. GREENWALD: No, thank you.

22 JUDGE DIPPELL: Clean Grid Alliance.

23 MR. BRADY: No, thanks.

24 JUDGE DIPPELL: Grain Belt.

25 MR. SCHULTE: No questions.

1 JUDGE DIPPELL: Public Counsel.

2 MR. WILLIAMS: Thank you, no.

3 JUDGE DIPPELL: Staff.

4 MR. PRINGLE: Yes, Judge.

5 FURTHER CROSS-EXAMINATION

6 BY MR. PRINGLE:

7 Q. Mr. Milligan, this is Travis Pringle from
8 Staff again.

9 A. Hello.

10 Q. Are you aware of how Missouri utilities in
11 MISO responded to Storm Uri in terms of whether they
12 needed to import capacity?

13 A. Not specifically, no.

14 Q. And then also you mentioned about the Grain
15 Belt Express not being done by 2024. Are you aware of
16 any additional generation being constructed for MISO
17 that could more quickly address any future shortfalls?

18 A. I'm not aware of anything. That doesn't mean
19 it doesn't exist. I'm just not aware of it.

20 MR. PRINGLE: Thank you, sir. No further
21 questions.

22 JUDGE DIPPELL: Thank you. Anything from MLA.

23 MR. AGATHEN: No questions, Your Honor.

24 JUDGE DIPPELL: Ag Associations.

25 MR. HADEN: No, Your Honor, thank you.

1 JUDGE DIPPELL: Ms. Stemme.

2 MS. STEMME: No questions.

3 JUDGE DIPPELL: Is there any redirect from
4 Sierra Club.

5 MS. RUBENSTEIN: No, thank you.

6 JUDGE DIPPELL: All right. Then that
7 concludes your testimony, Mr. Milligan. Appreciate your
8 being available. You may be excused.

9 THE WITNESS: Thank you.

10 JUDGE DIPPELL: Thank you, Ms. Rubenstein.

11 (Witness excused.)

12 JUDGE DIPPELL: I guess that brings us to our
13 next witness on the list is Ms. Stemme. I'm not sure,
14 Ms. Stemme, you didn't file any prefiled testimony,
15 correct?

16 MS. STEMME: That's correct.

17 JUDGE DIPPELL: I'm sorry. I didn't hear you.

18 MS. STEMME: I did a direct.

19 JUDGE DIPPELL: You did file. Okay. Well,
20 then I would ask you just to come forward. Since you're
21 representing yourself, if you want to just take the
22 witness stand and I'll ask you what I would normally ask
23 -- or counsel would normally ask their witness about
24 your testimony and then we can get that admitted.

25 MS. STEMME: Okay.

1 JUDGE DIPPELL: I'll go ahead and swear you
2 in. Do you solemnly swear or affirm that the testimony
3 you're about to give will be the truth and the whole
4 truth?

5 MS. STEMME: Yes.

6 JUDGE DIPPELL: Thank you. Sorry, I'm a
7 little thrown off by this situation.

8 MS. STEMME: I might be thrown off with you.

9 PATRICIA STEMME,
10 having been first duly sworn, was examined and testified
11 as follows:

12 QUESTIONS

13 BY JUDGE DIPPELL:

14 Q. So you did file rebuttal testimony?

15 A. I did.

16 Q. And we premarked that as Exhibit 9-5-0, 950.
17 Did you have any corrections you needed to make to your
18 testimony?

19 A. No, ma'am.

20 Q. And can you pull that microphone down just a
21 little there?

22 A. Sure.

23 Q. Thank you. Are the answers in your testimony
24 or the testimony you provided still true and correct to
25 the best of your knowledge?

1 A. Yes, Judge.

2 Q. And if you were to just give that testimony
3 today, would you state the same?

4 A. I would, yes.

5 JUDGE DIPPELL: Would you like to offer
6 Exhibit 950 to be admitted into the record?

7 MS. STEMME: I have it with me. I didn't
8 bring it up here.

9 JUDGE DIPPELL: That's fine. It was prefiled
10 so we have it in the electronic form which is
11 sufficient.

12 MS. STEMME: Okay.

13 JUDGE DIPPELL: But would you like to offer
14 that?

15 MS. STEMME: Yes.

16 JUDGE DIPPELL: Then would there be any
17 objection to Exhibit 950 coming into the record? Seeing
18 none, then I will receive that into the record.

19 MS. STEMME: Thank you.

20 (STEMME EXHIBIT 950 WAS RECEIVED INTO EVIDENCE
21 AND MADE A PART OF THIS RECORD.)

22 JUDGE DIPPELL: Would there be any
23 cross-examination of Ms. Stemme? I don't see any. Are
24 there any Commission questions for Ms. Stemme? Yes,
25 Commissioner Kolkmeier.

1 COMMISSIONER KOLKMEYER: Good afternoon.

2 MS. STEMME: Good afternoon.

3 QUESTIONS

4 BY COMMISSIONER KOLKMEYER:

5 Q. Yes. So what you filed with the Commission,
6 was that basically the testimony you gave in Mexico at
7 the local public hearing?

8 A. No, it's not.

9 Q. It's different?

10 A. It is different, yes.

11 COMMISSIONER KOLKMEYER: Okay. We'll have to
12 take a look at that then.

13 MS. STEMME: All right.

14 COMMISSIONER KOLKMEYER: Thank you.

15 JUDGE DIPPELL: Were there any other
16 Commission questions?

17 COMMISSIONER COLEMAN: Commissioner Kolkmeier
18 asked the question.

19 JUDGE DIPPELL: Were there any Commission
20 questions online?

21 COMMISSIONER HOLSMAN: No questions, Judge.

22 CHAIRMAN RUPP: No, thank you, Judge.

23 JUDGE DIPPELL: Thank you. I don't have any
24 questions for you either, Ms. Stemme. So we appreciate
25 your participation.

1 MS. STEMME: Thank you very much.

2 JUDGE DIPPELL: You may be excused.

3 MS. STEMME: Thank you.

4 JUDGE DIPPELL: Oh, I'm sorry. I didn't allow
5 recross based on Commissioner Kolkmeyer's question.

6 MS. STEMME: Thank you.

7 (Witness excused.)

8 JUDGE DIPPELL: All right then. We are up to
9 MEC's witness. Would this be another good place to take
10 a short break before we start MEC's witnesses? Yes.
11 Let's just take a ten-minute break and then maybe we can
12 get through quite a bit when we get back. Let's go
13 ahead and go off the record.

14 (A recess was taken.)

15 JUDGE DIPPELL: Okay. We are back. We are
16 ready for MEC's first witness.

17 MS. WHIPPLE: MEC calls John Twitty to the
18 stand.

19 JUDGE DIPPELL: Would you raise your right
20 hand. Do you solemnly swear or affirm that the
21 testimony you're about to give at this hearing will be
22 the truth?

23 THE WITNESS: Yes, ma'am, I do.

24 JUDGE DIPPELL: If you could spell your name
25 for the court reporter.

1 THE WITNESS: J-o-h-n T-w-i-t-t-y.

2 JUDGE DIPPELL: And when you're ready, Ms.
3 Whipple.

4 JOHN TWITTY,
5 having been first duly sworn, was examined and testified
6 as follows:

7 DIRECT EXAMINATION

8 BY MS. WHIPPLE:

9 Q. Mr. Twitty, for the record would you give us
10 your business address, please?

11 A. 2200 Maguire Boulevard, Columbia, Missouri
12 65201.

13 Q. And who is your employer?

14 A. Missouri Public Utility Alliance.

15 Q. What is your position at the Missouri Public
16 Utility Alliance?

17 A. I'm the President and CEO.

18 Q. Mr. Twitty, did you cause rebuttal testimony
19 and related schedules to be filed in this case on April
20 19, 2023, on behalf of the Missouri Joint Municipal
21 Electric Utility Commission d/b/a the Missouri Electric
22 Commission?

23 A. Yes, ma'am, I did.

24 Q. And for the record we have marked your
25 rebuttal testimony and Schedules JT-1 through JT-11 as

1 Exhibit 700; and so I'll ask you to the best of your
2 knowledge, are the responses that you gave to the
3 questions in that testimony, are they true and accurate?

4 A. Yes, ma'am.

5 Q. If today here I asked you the same questions
6 that were set forth in that prefiled testimony, would
7 your answers today be the same as the answers you gave
8 in that rebuttal testimony?

9 A. Yes, ma'am.

10 MS. WHIPPLE: Your Honor, I move for the
11 admission into the record of Exhibit 700.

12 JUDGE DIPPELL: And Exhibit 700 contains
13 confidential information, highly confidential
14 information and highly confidential-competitive
15 information; is that correct?

16 MS. WHIPPLE: No, Your Honor. There is a
17 public version and there is a highly
18 confidential-competitive version.

19 JUDGE DIPPELL: Okay.

20 MS. WHIPPLE: That, of course, is marked 700
21 HC-C.

22 JUDGE DIPPELL: Very good. All right. Is
23 there any objection to Exhibit 700 and including 700
24 HC-C? Seeing no objection, I will admit that into the
25 record.

1 (MEC'S EXHIBIT 700 WAS RECEIVED INTO EVIDENCE
2 AND MADE A PART OF THIS RECORD.)

3 MS. WHIPPLE: Thank you, Your Honor, and I
4 tender this witness for cross-examination.

5 JUDGE DIPPELL: Is there any cross-examination
6 by Associated Industries.

7 MR. ELLINGER: No questions, Judge.

8 JUDGE DIPPELL: Sierra Club.

9 MS. RUBENSTEIN: Your Honor, this is Ethan
10 Thompson appearing on behalf of Sierra Club which has no
11 questions.

12 JUDGE DIPPELL: Renew Missouri.

13 MS. GREENWALD: No, thank you.

14 JUDGE DIPPELL: Clean Grid Alliance.

15 MR. BRADY: No questions.

16 JUDGE DIPPELL: Grain Belt.

17 MR. SCHULTE: No questions.

18 JUDGE DIPPELL: Public Counsel.

19 MR. WILLIAMS: Thank you, no.

20 JUDGE DIPPELL: Staff.

21 MR. PRINGLE: No questions, Judge. Thank you.

22 JUDGE DIPPELL: Missouri Landowners Alliance.

23 MR. AGATHEN: Yes, Your Honor. Thank you.

24 Hello, Mr. Twitty.

25 THE WITNESS: Hi, Mr. Agathen.

1 MR. AGATHEN: How do you do?

2 THE WITNESS: Good. How are you?

3 MR. AGATHEN: Great.

4 CROSS-EXAMINATION

5 BY MR. AGATHEN:

6 Q. The last Grain Belt CCN case was concluded
7 with the Commission'S Report and Order on Remand back in
8 March of 2019, more or less, right?

9 A. Yes, sir.

10 Q. At that point, more than four years ago MEC
11 had agreements with its members to buy 136 MW of
12 capacity which MEC had purchased from Grain Belt; is
13 that correct?

14 A. That's correct.

15 JUDGE DIPPELL: Mr. Agathen, can you move your
16 mike down just a little. There you go. Thank you.

17 MR. AGATHEN: You're welcome.

18 BY MR. AGATHEN:

19 Q. You had the right to purchase up to 200 MW
20 under your contract, right?

21 A. Correct.

22 Q. Could you turn, please, to page 3 of your
23 rebuttal testimony?

24 A. Yes, sir.

25 Q. At lines 13 to 14, you state that you expect

1 that other MEC members will also choose to buy capacity
2 on the Grain Belt line, correct?

3 A. Correct.

4 Q. Subsequent to the Order in the last case that
5 we just mentioned, which was issued in 2019, how many of
6 these other members have you spoken with about buying
7 capacity on the Grain Belt line through MEC?

8 A. Mr. Agathen, that's probably a better question
9 for Mr. Grotzinger who is going to follow me, but I am
10 aware there are a number of our members who also have
11 expressed interest.

12 Q. So you have spoken to a number of other
13 members?

14 A. That's correct.

15 Q. But none have bought any capacity at this
16 point?

17 A. I don't believe there's any agreement at this
18 time. Again, Mr. Grotzinger would be able to answer
19 that better.

20 Q. In addition to the cost of the capacity of the
21 Grain Belt line and the cost of energy, approximately
22 how much would a city like Hannibal, for example, need
23 to pay to wheel the power from the Grain Belt delivery
24 point to the City of Hannibal?

25 A. Again, that would be a question better

1 answered by Mr. Grotzinger.

2 MR. AGATHEN: With that, I have no more
3 questions.

4 JUDGE DIPPELL: Thank you. Is there anything
5 from the Agricultural Associations.

6 MR. HADEN: No, Your Honor.

7 JUDGE DIPPELL: Ms. Stemme.

8 MS. STEMME: No questions.

9 JUDGE DIPPELL: Are there any Commissioner
10 questions for Mr. Twitty?

11 CHAIRMAN RUPP: No, thank you, Judge.

12 JUDGE DIPPELL: All right then. I don't have
13 any questions. Is there any redirect?

14 MS. WHIPPLE: No, Your Honor. Thank you.

15 JUDGE DIPPELL: All right. Mr. Twitty, that
16 concludes your testimony. You may be excused.

17 THE WITNESS: Thank you, Judge.

18 (Witness excused.)

19 JUDGE DIPPELL: You may call your next
20 witness.

21 MS. WHIPPLE: Yes, Your Honor. MEC calls
22 Rebecca Atkins to the stand.

23 JUDGE DIPPELL: Do you solemnly swear or
24 affirm that the testimony you're about to give at this
25 hearing will be the truth?

1 THE WITNESS: I do.

2 JUDGE DIPPELL: Thank you. If you could spell
3 your name for the court reporter.

4 THE WITNESS: It's Rebecca Atkins,
5 R-e-b-e-c-c-a A-t-k-i-n-s.

6 JUDGE DIPPELL: And whenever you're ready, Ms.
7 Whipple.

8 MS. WHIPPLE: Thank you, Your Honor.

9 REBECCA ATKINS,
10 having been first duly sworn, was examined and testified
11 as follows:

12 DIRECT EXAMINATION

13 BY MS. WHIPPLE:

14 Q. Ms. Atkins, for the record would you give us
15 your business address, please?

16 A. Yes. It is 2200 Maguire Boulevard, Columbia,
17 Missouri 65201.

18 Q. And who is your employer?

19 A. Missouri Public Utility Alliance.

20 Q. And what is your position at the Missouri
21 Public Utility Alliance?

22 A. I am the Chief Markets Officer.

23 Q. Ms. Atkins, did you cause rebuttal testimony
24 and related schedules to be filed in this case on April
25 19, 2023, on behalf of the Missouri Joint Municipal

1 Electric Utility Commission d/b/a the Missouri Electric
2 Commission?

3 A. Yes, I did.

4 Q. And for you to know and for the record, your
5 rebuttal testimony and Schedules RA-1 through RA-3 have
6 been marked as Exhibit 701. To your knowledge, Ms.
7 Atkins, are the responses that you gave to the questions
8 in that prefiled testimony true and correct?

9 A. Yes, they are.

10 Q. And if today I asked you those same questions
11 that were set forth in your prefiled testimony, would
12 your answers today be the same as the answers you gave
13 in that rebuttal?

14 A. Yes.

15 MS. WHIPPLE: Your Honor, I move for admission
16 into the record Exhibit 701.

17 JUDGE DIPPELL: Would there be any objection
18 to Exhibit 701?

19 MR. AGATHEN: Your Honor, I might have an
20 objection. I'd like to ask the witness a few questions
21 which would form the basis in part at least to the
22 objection.

23 JUDGE DIPPELL: Okay. Go ahead.

24 VOIR DIRE EXAMINATION

25 BY MR. AGATHEN:

1 Q. Your Schedule RA-3 consists of a 22-page study
2 compiled by a firm named The Energy Authority or TEA; is
3 that correct?

4 A. That is correct.

5 Q. What's the name of the person that authored
6 that study?

7 A. It was done by a group of the consultants
8 there.

9 Q. Are they here today?

10 A. No, they are not.

11 Q. So no one from the TEA who is directly
12 involved in compiling the study is here?

13 A. No.

14 MR. AGATHEN: Your Honor, I'd like to object
15 then to the admission into evidence of Schedule RA-3
16 which is the 22-page study prepared by The Energy
17 Authority and also the testimony which references that
18 study and the direct testimony, I guess rebuttal
19 testimony, at page 3, line 20 to 23 and page 7, line 9
20 over to page 8, line 1. I've got three grounds for the
21 objection.

22 First, that study amounts to hearsay. Second,
23 no foundation has been laid for the inclusion of that
24 study and the testimony I just mentioned and finally the
25 individual who authored the study is not even here to

1 support it.

2 JUDGE DIPPELL: Ms. Whipple, did you have a
3 response?

4 MS. WHIPPLE: I do, Your Honor. I think for
5 expediency I'll make my response also, if Your Honor
6 please, I'll make my response also cover the very same
7 exhibit which will be also attached to the prefiled
8 testimony and, of course, the testimony here of my next
9 witness, Mr. John Grotzinger. And so for the record
10 we're talking about The Energy Authority study also
11 called the TEA study which is Schedule RA-3 to Ms.
12 Atkins' prefiled testimony and it will be Schedule JG-14
13 to Mr. Grotzinger's prefiled testimony and here is my
14 legal response.

15 I would refer, Your Honor, to Missouri Revised
16 Statutes 490.065 which governs the admissibility of
17 expert witness opinion testimony, and I would refer Your
18 Honor specifically to subsection 1(3), which I'm happy
19 to read. The title of this statute is Expert Witness
20 Opinion Testimony Admissible. And subsection (3)
21 provides that, quote, the facts or data in a particular
22 case upon which an expert bases an opinion or inference
23 may be those perceived by or made known to him at or
24 before the hearing and must be of a type reasonably
25 relied upon by experts in the field in forming opinions

1 or inferences upon the subject and must be otherwise
2 reasonably reliable. I would also refer to subsection
3 2.2 of the same statute and it provides that evidence is
4 admissible, and now I'm quoting, an expert may base an
5 opinion on facts or data in the case that the expert has
6 been made aware of or personally observed. If experts
7 in the particular field would reasonably rely on those
8 kinds of facts or data in forming an opinion on the
9 subject, they need not be admissible for the opinion to
10 be admitted.

11 Both Ms. Atkins and Mr. Grotzinger testified
12 in their prefiled testimony that they found the TEA
13 study to be reasonably relied upon by experts in the
14 field performing the work that they do every day and so
15 I would say that Mr. Agathen's objection is not lawfully
16 grounded.

17 JUDGE DIPPELL: Thank you. Mr. Agathen, did
18 you have any additional response?

19 MR. AGATHEN: I do not, Your Honor.

20 JUDGE DIPPELL: If you'll give me just a
21 moment.

22 Are there going to be cross-examination
23 questions of this witness other than related to this
24 attachment?

25 MR. AGATHEN: Very brief.

1 JUDGE DIPPELL: Can I get you to go ahead.
2 Would it throw anybody off to go ahead and do those
3 while I consider the objection?

4 MR. AGATHEN: It wouldn't bother me, Your
5 Honor.

6 JUDGE DIPPELL: Okay. Let's go ahead and do
7 that for now.

8 MR. PRINGLE: My only question, Judge, also
9 will be about the TEA study.

10 JUDGE DIPPELL: Okay. Go ahead, Mr. Agathen.

11 MR. AGATHEN: Hello, Ms. Atkins.

12 CROSS-EXAMINATION

13 BY MR. AGATHEN:

14 Q. If you could turn, please, to page 3 of your
15 rebuttal testimony.

16 A. Okay.

17 Q. At lines 15 to 16 you state that in addition
18 to the five municipal systems which have already
19 contracted to take power from the Grain Belt line, it is
20 likely that other MEC members will also choose to
21 participate. Is that essentially correct?

22 A. That is true.

23 MS. WHIPPLE: Your Honor, just one moment. If
24 I could object just to the mischaracterization of her
25 testimony. I think it may have just been a misspoken

1 word. It's not 5 municipal systems. It's 35 members of
2 the MoPEP pool plus four additional municipalities.
3 Might have been a misstate.

4 JUDGE DIPPELL: Mr. Agathen.

5 MR. AGATHEN: I was grouping a number of
6 municipal systems that they bought power for. I think
7 it's called, what, MoPEP, plus four other municipal
8 systems. So whatever the number that she said is
9 probably correct.

10 JUDGE DIPPELL: Thank you for that
11 clarification.

12 BY MR. AGATHEN:

13 Q. Do you remember what I just said in
14 characterizing your testimony? Is it essentially
15 correct other than the clarification that was just made?

16 A. Yes.

17 Q. Since the conclusion of the last CCN case in
18 early 2019, how many municipal systems do you think
19 you've spoken with about taking power from the Grain
20 Belt line other than those that already have signed
21 contracts?

22 A. Like Mr. Twitty, I will defer that question to
23 Mr. Grotzinger. Thank you.

24 MR. AGATHEN: Judge, that's all I have other
25 than a few questions dealing with that study.

1 JUDGE DIPPELL: Okay. And when Staff said
2 that, you were talking about Mr. Grotzinger's, questions
3 for Mr. Grotzinger?

4 MR. PRINGLE: Mr. Grotzinger has as well.
5 It's just the -- currently you're ruling on the
6 objection. If it's not let in, I'll have no questions.
7 If it's let in, I'll have one question about that study
8 for regular cross.

9 JUDGE DIPPELL: I'm sorry. I forgot I got out
10 of order with Mr. Agathen.

11 MR. PRINGLE: Same thing when I jumped in like
12 wait a minute. We're still waiting on an objection.
13 That's my bad.

14 JUDGE DIPPELL: No, no, not at all. Were
15 there any other -- Was there going to be any other
16 cross-examination of this witness?

17 MR. AGATHEN: I would have very few questions
18 dealing either directly or indirectly with the study
19 that we're talking about.

20 JUDGE DIPPELL: Okay. But no one else has any
21 other objections?

22 MR. ELLINGER: Objections or questions.

23 JUDGE DIPPELL: I'm sorry. Questions. Does
24 anyone have any other objections?

25 MR. ELLINGER: Depending on what ruling you

1 make with this document, I might have a question or two
2 or I might not.

3 JUDGE DIPPELL: Okay. But they're dependent
4 on the TEA study.

5 MR. ELLINGER: They're dependent upon your
6 ruling with respect to the TEA study.

7 JUDGE DIPPELL: I need just a minute to
8 actually read this statute and look at the testimony.
9 So we're going to just take a five-minute pause and go
10 off the record.

11 (A recess was taken.)

12 JUDGE DIPPELL: We're back on the record. I
13 apologize for that little hiatus, but I wanted a chance
14 to actually focus on that. I'm going to overrule the
15 objection and allow the attachment. Do you have any
16 other objections, Mr. Agathen?

17 MR. AGATHEN: Not to that, no. No objections
18 at all other than the one I just made.

19 JUDGE DIPPELL: Are there any other objections
20 to Exhibit 701? Then I will admit Exhibit 701.

21 (MEC'S EXHIBIT 701 WAS RECEIVED INTO EVIDENCE
22 AND MADE A PART OF THIS RECORD.)

23 JUDGE DIPPELL: Before we move further, that
24 exhibit or that schedule attached to the exhibit says
25 several times confidential and proprietary. That is

1 not, in fact, confidential and proprietary?

2 MS. WHIPPLE: It's okay, Your Honor. That has
3 to do with the arrangement that TEA and MEC often do
4 business together. TEA has previously done studies for
5 MEC. It's part of MEC's business. So that's part of
6 the agreement between them, but I assure you in our
7 agreement TEA has for purposes of this litigation given
8 us a written waiver that we could provide this
9 information to you and all the parties here.

10 JUDGE DIPPELL: Okay. Thank you.

11 MS. WHIPPLE: Yes.

12 JUDGE DIPPELL: Just wanted to clarify that.
13 All right. I don't want to take things too out of
14 order. So I'll just go ahead and start back and come
15 back to you, Mr. Agathen, on the cross-examination. I'm
16 going to start back at the top of the list. So is there
17 any cross-examination by Associated Industries.

18 MR. ELLINGER: No questions, Judge. Thank
19 you.

20 JUDGE DIPPELL: Sierra Club.

21 MR. THOMPSON: No questions, Your Honor.

22 JUDGE DIPPELL: Renew Missouri.

23 MS. GREENWALD: No questions, thank you.

24 JUDGE DIPPELL: Clean Grid Alliance.

25 MR. BRADY: No questions. Thanks.

1 JUDGE DIPPELL: Grain Belt.

2 MR. SCHULTE: No questions.

3 JUDGE DIPPELL: Public Counsel.

4 MR. WILLIAMS: Thank you, no.

5 JUDGE DIPPELL: Staff.

6 MR. PRINGLE: Yes, Judge. Good afternoon, Ms.
7 Atkins.

8 THE WITNESS: Good afternoon.

9 CROSS-EXAMINATION

10 BY MR. PRINGLE:

11 Q. Just to be clear, this Schedule RA-3, the TEA
12 study, this is the entirety of the study that you have
13 had the chance to review?

14 A. That is correct.

15 Q. You have not reviewed any workpapers
16 associated with the study?

17 A. I was involved in conversations when we were
18 developing the assumptions, but this is the final
19 product.

20 Q. But no workpaper of your own for this?

21 A. I do not, no.

22 MR. PRINGLE: Thank you, ma'am. No further
23 questions.

24 JUDGE DIPPELL: Mr. Agathen.

25 MR. AGATHEN: Your Honor, I had already asked

1 questions not related to the TEA study. So I have
2 nothing further.

3 JUDGE DIPPELL: Okay. Is there anything from
4 the Ag Associations.

5 MR. HADEN: No, Your Honor, thank you.

6 JUDGE DIPPELL: Ms. Stemme.

7 MS. STEMME: No questions.

8 JUDGE DIPPELL: Are there any questions for
9 Ms. Atkins from the Commissioners?

10 COMMISSIONER HOLSMAN: No questions, Judge.
11 Thank you.

12 CHAIRMAN RUPP: No, thank you, Judge.

13 JUDGE DIPPELL: Thank you, Commissioners. All
14 right. I don't see any questions from Commissioners,
15 and I don't have any questions. Is there any redirect?

16 MS. WHIPPLE: No, Your Honor. Thank you.

17 JUDGE DIPPELL: All right. Ms. Atkins, thank
18 you for your testimony.

19 THE WITNESS: Thank you.

20 JUDGE DIPPELL: You may be excused.

21 (Witness excused.)

22 JUDGE DIPPELL: I feel like I took up most of
23 your time. You may call your next witness.

24 MS. WHIPPLE: MEC calls John Grotzinger to the
25 stand.

1 JUDGE DIPPELL: Would you please raise your
2 right hand. Do you solemnly swear or affirm that the
3 testimony you're about to give at this hearing will be
4 the truth?

5 THE WITNESS: I do.

6 JUDGE DIPPELL: You may proceed, Ms. Whipple.

7 MS. WHIPPLE: Thank you, Your Honor.

8 JOHN GROTZINGER,
9 having been first duly sworn, was examined and testified
10 as follows:

11 DIRECT EXAMINATION

12 BY MS. WHIPPLE:

13 Q. Mr. Grotzinger, for the record would you
14 please give us your business address?

15 A. 2200 Maguire Boulevard, Columbia, Missouri
16 65201.

17 Q. Who is your employer?

18 A. Missouri Public Utility Alliance.

19 Q. What is your position at the Missouri Public
20 Utility Alliance?

21 A. I am Chief Electric Operations Officer.

22 Q. Mr. Grotzinger, did you cause rebuttal
23 testimony and related schedules to be filed in this case
24 on April 19, 2023, on behalf of the Missouri Joint
25 Municipal Electric Utility Commission d/b/a the Missouri

1 Electric Commission?

2 A. I did.

3 Q. And for the record, I will tell you and the
4 record that your rebuttal testimony and Schedules JG-1
5 through JG-14 have been marked as Exhibit 702, and so I
6 would ask you to the best of your knowledge, are the
7 responses that you gave in your prefiled testimony true
8 and accurate?

9 A. Yes, they are.

10 Q. And if today I asked you the same questions
11 that were set forth in your rebuttal testimony, would
12 your answers today be the same as the answers you gave
13 in your rebuttal testimony?

14 A. Yes, they would.

15 MS. WHIPPLE: Your Honor, I move for admission
16 into the record Exhibit 702.

17 JUDGE DIPPELL: And again, is that with highly
18 confidential-competitive information?

19 MS. WHIPPLE: Yes. There is a public version
20 and there is a highly confidential-competitive version,
21 just those two.

22 JUDGE DIPPELL: Would there be any objection
23 to Exhibit 702?

24 MR. AGATHEN: Yes, Your Honor. Basically the
25 same objection that I just lost, but I think I have to

1 make a record here.

2 JUDGE DIPPELL: I agree.

3 MR. AGATHEN: I'm objecting to the admission
4 of Schedule JG-14 which is that TEA study and also the
5 testimony of Mr. Grotzinger which references that study.
6 That would be his rebuttal testimony at page 9, line 17
7 through page 13, line 20 and the objection is on the
8 same grounds as I had raised earlier.

9 JUDGE DIPPELL: Ms. Whipple, same response?

10 MS. WHIPPLE: Same response, Your Honor.
11 Thank you.

12 JUDGE DIPPELL: Are there any other
13 objections? Then I will overrule the objection and I
14 will admit Exhibit 702, including 702 HC-C.

15 (MEC'S EXHIBIT 702 WAS RECEIVED INTO EVIDENCE
16 AND MADE A PART OF THIS RECORD.)

17 MS. WHIPPLE: And Your Honor, I tender the
18 witness for cross-examination.

19 JUDGE DIPPELL: Let me just open it up. Is
20 there any cross-examination for Mr. Grotzinger? Staff.
21 MLA.

22 MR. AGATHEN: I have questions, Your Honor.

23 JUDGE DIPPELL: Okay. We'll start with Staff.

24 MR. PRINGLE: Thank you, Judge. Good
25 afternoon, Mr. Grotzinger.

1 THE WITNESS: Good afternoon.

2 CROSS-EXAMINATION

3 BY MR. PRINGLE:

4 Q. And similar to what I asked Ms. Atkins, did
5 you review or contribute to any workpapers with the TEA
6 study?

7 A. No, same answer.

8 MR. PRINGLE: Thank you, sir. No further
9 questions, Judge.

10 JUDGE DIPPELL: Mr. Agathen.

11 MR. AGATHEN: Thank you, Your Honor. Hello,
12 Mr. Grotzinger.

13 THE WITNESS: Hello.

14 CROSS-EXAMINATION

15 BY MR. AGATHEN:

16 Q. MEC's contract with Grain Belt allows MEC to
17 purchase up to 200 MW of firm capacity rights under
18 Grain Belt, right?

19 A. That's correct.

20 Q. MEC currently has contracts to sell a total of
21 136 MW of that capacity?

22 A. That's also correct.

23 Q. That's the same amount of capacity to the same
24 municipal systems which MEC had contracts with at the
25 conclusion of the last CCN case, right?

1 A. Yes.

2 Q. And the Report and Order on Remand was issued
3 in that case in March of 2019?

4 A. Yes.

5 JUDGE DIPPELL: Mr. Grotzinger, can you point
6 toward the microphone? Thank you.

7 THE WITNESS: Yes, it's the same.

8 BY MR. AGATHEN:

9 Q. The Commission stated in its Order at page 12,
10 paragraph 22 in the last case that MJMEUC, now MEC, has
11 68 municipal utility members. Is that still
12 approximately correct?

13 A. I believe the number is 72, but yes, that's
14 approximately correct.

15 Q. So over the last four years, the MEC has not
16 signed a single contract to sell capacity to any
17 additional municipal systems, correct?

18 A. No contracts have been finalized.

19 Q. And none of the systems which you had a
20 contract with back in 2019 has signed a contract to buy
21 an additional amount of capacity; is that correct?

22 A. No contracts have been signed yet.

23 Q. So the answer is no?

24 A. No.

25 Q. So that still leaves MEC with an additional 64

1 MW, if my math is right, which is not yet spoken for by
2 any other municipal system in Missouri, correct?

3 A. That is correct currently.

4 Q. Could you turn, please, to page 3 of your
5 rebuttal.

6 A. Yes, sir.

7 Q. At lines 20 to 22, you essentially say that
8 you expect that other municipal systems will choose to
9 buy at least some of the remaining 64 MW; is that
10 correct?

11 A. Yes, it is.

12 Q. And then at page 11 -- strike that. Page 6,
13 lines 10 through 15 you also state that you believe that
14 the mid Missouri Municipal Power Energy Pool and other
15 MEC members near the AECI region might also consider
16 purchasing some of the remaining capacity; is that
17 correct?

18 A. That is correct.

19 Q. Subsequent to the close of the last case in
20 2019, how many municipal systems have you or someone
21 else with MEC spoken with about the possibility of
22 buying some of that capacity from the Grain Belt line?

23 A. If you include the existing cities that are
24 part of the original 136 and additional ones beyond
25 that, roughly 55.

1 Q. So 55 that you've spoken with since the last
2 case?

3 A. That includes them in aggregate. The MoPEP
4 being 14 cities in themselves and then the 35 MoPEP in
5 additional individual cities.

6 Q. Is it fair to say that the entire 200 MW which
7 MEC can purchase from Grain Belt was priced at what is
8 called the first mover rate and that amounted to only
9 \$1,167 per MW month?

10 A. That would be the case, yes.

11 Q. That rate was clearly below market, was it
12 not?

13 A. I think it's been asserted that it is.

14 Q. You believe that to be true?

15 A. I do believe that's true.

16 Q. And that same rate would apply to any sale by
17 Grain Belt to MEC of the remaining 64 MW of capacity; is
18 that correct?

19 A. That is correct.

20 Q. So far no additional contracts have been
21 signed by any municipal system to purchase any of this
22 capacity at below market rates?

23 A. None of those have been finalized.

24 Q. So the answer is no, they have not signed?

25 A. No.

1 Q. I've got two questions that were deferred to
2 you.

3 A. Okay.

4 Q. In addition to the cost of capacity from Grain
5 Belt and the cost of energy, approximately how much, if
6 any, would a city like Hannibal, for example, need to
7 pay to wheel the power from the Grain Belt delivery
8 point to the Missouri city of Hannibal?

9 A. In transmission charge, if they're taking
10 service under network transmission service, that would
11 be based on their load. So there would be no additional
12 transmission cost beyond that.

13 Q. So you could get it from the delivery point
14 near the converter station to Hannibal with no
15 additional charge?

16 A. Not beyond what they are already paying for
17 alternative supplies.

18 Q. And that would apply to all the other
19 municipal systems in Missouri?

20 A. Not all of those but those inside of MISO.
21 Excuse me. Those inside of MISO in taking network
22 service.

23 MR. AGATHEN: Understood. That's all I have,
24 Your Honor.

25 JUDGE DIPPELL: Thank you. Anything from the

1 Ag Associations.

2 MR. HADEN: Just briefly, Judge.

3 CROSS-EXAMINATION

4 BY MR. HADEN:

5 Q. Mr. Grotzinger, and you may not be able to --
6 Has anybody to your knowledge ever done any analysis on
7 the expected savings to the individual customer for any
8 of the cities in MEC's pool?

9 A. To the individual retail customer?

10 Q. Yeah.

11 A. I am not aware of that.

12 Q. And just so I'm clear just to break that out a
13 little bit, within that category of retail customers,
14 businesses or individuals would fit in that category;
15 you understand?

16 A. That would be my understanding.

17 Q. And nobody to your knowledge has done an
18 analysis for MEC or anyone else that would lay out a
19 number of expected savings down to the individual retail
20 customer level?

21 A. No. We've done it on a city level but not on
22 a retail customer level. That's been left to the
23 cities.

24 MR. HADEN: Thank you.

25 JUDGE DIPPELL: Anything from Ms. Stemme.

1 MS. STEMME: No questions.

2 JUDGE DIPPELL: Are there any questions from
3 the Commission for Mr. Grotzinger?

4 COMMISSIONER HOLSMAN: No questions, Judge.

5 CHAIRMAN RUPP: No, thank you, Judge.

6 JUDGE DIPPELL: Thank you. Is there any
7 redirect?

8 MS. WHIPPLE: Yes, Your Honor. Just one,
9 please.

10 JUDGE DIPPELL: Go ahead.

11 REDIRECT EXAMINATION

12 BY MS. WHIPPLE:

13 Q. Mr. Grotzinger, do you recall that Mr. Agathen
14 asked you a series of questions about the fact that
15 there are 64 MW remaining unsubscribed or not under
16 contract of the original 200 MW?

17 A. Yes.

18 Q. Would you please explain to us to your
19 knowledge why the remaining 64 MW are not already under
20 firm contract?

21 A. A couple complications in that. One has been
22 over the past several years ongoing activity in the
23 legislature for potential threats to this have made it
24 less than an urgent priority to that. And then more
25 recently the fact that the interest by the number of

1 cities has outstripped the 64 MW. So it's also a
2 question of how to allocate that.

3 Q. How to allocate it fairly?

4 A. How to allocate it fairly among our members.

5 MS. WHIPPLE: Thank you. I don't have
6 anything else, Your Honor.

7 JUDGE DIPPELL: Thank you, Mr. Grotzinger.
8 You may be excused.

9 (Witness excused.)

10 JUDGE DIPPELL: Are there any other MEC
11 witnesses?

12 MS. WHIPPLE: No, Your Honor. That concludes
13 our evidence. Thank you.

14 JUDGE DIPPELL: Very good. I believe then we
15 are down to our very last witness. Renew Missouri.

16 MS. GREENWALD: Thank you, Judge. Renew
17 Missouri calls James Owen.

18 JUDGE DIPPELL: Mr. Owen is making his way.
19 Can you please raise your right hand. Do you solemnly
20 swear or affirm that the testimony you're about to give
21 at this hearing will be the truth?

22 THE WITNESS: I do.

23 JUDGE DIPPELL: Thank you. You may go ahead
24 with your witness.

25 MS. GREENWALD: Thank you.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

JAMES OWEN,

having been first duly sworn, was examined and testified
as follows:

DIRECT EXAMINATION

BY MS. GREENWALD:

Q. Mr. Owen, will you please state your full name
for the record?

A. My name is James Matthew Owen. Last name
O-w-e-n.

Q. By whom are you employed and in what capacity?

A. I am employed as the Executive Director and
Officer of Renew Missouri Advocates, Incorporated.

Q. Did you prepare and cause to be prefiled
surrebuttal testimony that has been marked as Exhibit
800?

A. I did.

Q. Do you have any changes that you would like to
make to your testimony at this time?

A. I do not.

Q. If I were to ask you those same questions
today, would your answers be substantially the same?

A. They would.

Q. Are all of those answers true and correct to
the best of your information, knowledge and belief?

A. To the best of my knowledge and belief, yes,

1 they are.

2 MS. GREENWALD: At this time I would like to
3 offer Exhibit 800 into evidence.

4 JUDGE DIPPELL: Would there be any objection
5 to Exhibit 800? Seeing none, I will admit Exhibit 800.

6 (RENEW MISSOURI'S EXHIBIT 800 WAS RECEIVED
7 INTO EVIDENCE AND MADE A PART OF THIS RECORD.)

8 MS. GREENWALD: Thank you. I tender Mr. Owen
9 for cross-examination.

10 JUDGE DIPPELL: Is there cross-examination
11 from MEC.

12 MS. WHIPPLE: No, Your Honor. Thank you.

13 JUDGE DIPPELL: Associated Industries.

14 MR. ELLINGER: No questions, Judge. Thank
15 you.

16 JUDGE DIPPELL: I really want you to be the
17 Cooperative. Sierra Club.

18 MR. THOMPSON: No questions, Your Honor.

19 JUDGE DIPPELL: Clean Grid Alliance.

20 MR. BRADY: No questions. Thank you.

21 JUDGE DIPPELL: Grain Belt.

22 MR. SCHULTE: No questions.

23 JUDGE DIPPELL: Public Counsel.

24 MR. WILLIAMS: Thank you, no.

25 JUDGE DIPPELL: Staff.

1 MR. PRINGLE: No questions, Judge. Thank you.

2 JUDGE DIPPELL: Missouri Landowners Alliance.

3 MR. AGATHEN: Just a couple, Your Honor.

4 JUDGE DIPPELL: You told me one earlier,

5 Mr. Agathen.

6 MR. AGATHEN: Well, I misspoke, I think.

7 CROSS-EXAMINATION

8 BY MR. AGATHEN:

9 Q. At line -- or page 10 I guess of your
10 testimony at line 16 to 18 you rely on the testimony of
11 Mr. Sane and Ms. Stemme for the proposition that the
12 Amended Project will deliver electricity into Missouri
13 as well as other states within MISO. Is that
14 essentially correct?

15 A. No. I think what I referred to their
16 testimony was refuting it being just simply for economic
17 development.

18 Q. Are you saying that it will or will not or
19 don't you know whether the electricity will be delivered
20 into states other than Missouri?

21 A. Oh, no, I do know it will be delivered in
22 other states.

23 Q. Outside of MISO?

24 A. Within MISO and PJM footprints, yes.

25 Q. What other states in MISO are you referring to

1 there?

2 A. I believe it's going to go through Illinois.
3 I believe that state is part of MISO.

4 Q. What other states?

5 A. Well, the states plural was MISO and PJM. I
6 wasn't referring to plural states for just MISO.

7 Q. So you didn't have a list of MISO states other
8 than Illinois?

9 A. I don't list any states.

10 Q. I mean, today you don't have any other states?

11 A. I know right now currently that there is an
12 effort to get Grain Belt Express to be a part of the
13 MISO to be considered something that can put off there.
14 Right now to answer your question specifically I was
15 referring to states as plural from the states and MISO
16 and PJM.

17 Q. Again, you don't have any other states to name
18 in MISO at this point?

19 A. Other than Illinois, Missouri, no, I do not.

20 MR. AGATHEN: Thank you. Sorry, Judge. A
21 couple extra questions there.

22 JUDGE DIPPELL: That's quite all right.
23 The Ag Associations.

24 MR. HADEN: No questions, Your Honor.

25 JUDGE DIPPELL: Ms. Stemme.

1 MS. STEMME: No questions.

2 JUDGE DIPPELL: Are there any questions for
3 Mr. Owen from the Commissioners?

4 COMMISSIONER HOLSMAN: Yes, Judge.

5 JUDGE DIPPELL: Okay. Commissioner Holsman.

6 COMMISSIONER HOLSMAN: Thank you.

7 QUESTIONS

8 BY COMMISSIONER HOLSMAN:

9 Q. Thank you, Mr. Owen, for your testimony today.
10 I talked earlier about the prospects of rather Grain
11 Belt Project would or would not relieve congestion. Can
12 you speak to whether you believe it will or not?

13 A. You know, I believe one of the primary
14 concerns and I talked about this in my written testimony
15 that we must deal with especially in dealing with access
16 for the public, the Missouri public, for renewable
17 energy is that we do need more transmission. We need
18 more projects. We need the ability to be able to
19 deliver that. So I do believe that this Project will be
20 able to accomplish that reduction in congestion, yes.

21 Q. In certain parts of RTOs we see negative
22 pricing indicated on the maps by deep blue or indigo.
23 Do you believe that this transmission project will
24 relieve some of that negative pricing?

25 A. I believe it can, yes.

1 Q. My final question is if this Project were to
2 be built, do you believe that renewable energy
3 generation projects that are not currently online today
4 will be constructed and developed as a result of this
5 transmission line specifically?

6 A. For this line specifically, I don't know if I
7 can speak to any specific projects, but I do believe
8 that the addition of any transmission projects that are
9 delivering this kind of power to customers is going to
10 open up generation, you know, potentially exponentially
11 but certainly I think to where we need to be for several
12 goals and several goals set forth by states, set forth
13 by transmission organizations, set forth by other
14 utilities. I believe that this will be able to be
15 helpful for that, yes.

16 COMMISSIONER HOLSMAN: Thank you, Judge.
17 That's all the questions I have.

18 THE WITNESS: Thank you.

19 JUDGE DIPPELL: Thank you.

20 CHAIRMAN RUPP: Judge, this is Commissioner
21 Rupp.

22 JUDGE DIPPELL: Yes, go ahead, Mr. Chairman.

23 QUESTIONS

24 BY CHAIRMAN RUPP:

25 Q. At the risk of having the last question of the

1 day here, I just wanted to ask, Mr. Owen, is it possible
2 to get a refund on my electricity and energy I used
3 watching The Banshees of Inisherin, which I believe was
4 a movie you recommended the last case you were here?

5 (Laughter)

6 A. Commissioner, without violating any rules, if
7 you need a refund, I'm happy to talk to you about that
8 off the record.

9 Q. If you can -- My kids are still mad at me for
10 making them watch that movie. If you can figure out a
11 way to remedy that, I'd appreciate it.

12 A. Never said your kids should watch that movie
13 to be clear. (Laughter)

14 JUDGE DIPPELL: Thank you, Commissioner. I
15 hate to ask. Any recross based on questions from the
16 Commission? I'm just going to throw it out to the
17 group. Any recross? Not hearing any. Is there any
18 redirect?

19 MS. GREENWALD: No, thank you, Judge.

20 JUDGE DIPPELL: Very good. Mr. Owen, you have
21 the joy of being our last witness and you are excused.

22 THE WITNESS: Thank you, Judge.

23 (Witness excused.)

24 JUDGE DIPPELL: Thank you. Okay. Well, I
25 have a few housekeeping things and a couple of

1 objections to rule on, and then we will make sure that
2 everything has been admitted and talk about briefing
3 schedules and that kind of stuff. So I will say to the
4 Commissioners and other people, the substance is pretty
5 well done. So feel free to go about your business.

6 CHAIRMAN RUPP: Judge, this is Commissioner
7 Rupp. I just wanted to thank you for a very well run
8 hearing. I thought you were very firm yet loving and
9 professional with all the witnesses and I thought you
10 made the hearing run very smoothly and I appreciate your
11 professionalism.

12 JUDGE DIPPELL: Thank you, Mr. Chairman. I
13 appreciate the remarks.

14 COMMISSIONER HOLSMAN: Judge, this is
15 Commissioner Holsman.

16 JUDGE DIPPELL: Yes.

17 COMMISSIONER HOLSMAN: I also want to say that
18 after 34 hours of technical testimony our court reporter
19 deserves a standing ovation.

20 JUDGE DIPPELL: And she is receiving one.

21 COMMISSIONER HOLSMAN: I want to thank you for
22 being objectively fair and running the great hearing and
23 all of the witnesses who took the time to present this
24 very difficult and complicated and challenging subject
25 matter. Thank everybody and we'll do our best to make a

1 good decision.

2 JUDGE DIPPELL: Thank you, Commissioner.

3 COMMISSIONER KOLKMEYER: Judge, I will second
4 the Chairman's remarks and thank you for a job well
5 done.

6 JUDGE DIPPELL: My job unfortunately is only
7 just beginning. But thank you. Okay. So there's still
8 a few outstanding objections. So I want to get to
9 those. So I already took administrative notice of those
10 Reports and Orders in the prior cases. I marked those
11 and gave those exhibit numbers.

12 I am not going to admit the whole record from
13 the 2016 case. It's just too overly burdensome to this
14 record to do so. Several witnesses have referred to it
15 during their testimony and there was adequate time to
16 cross-examine on those issues as needed. So those
17 objections -- or that request to admit that is denied
18 and any objections contained to it overruled.

19 Then there was the matter of MLA's request to
20 have -- I'm going to get to that one last. Never mind.

21 Let me back up.

22 MR. HADEN: Judge, I'm sorry to interrupt that
23 line of thought. Just so I'm clear. The 2016 Order, it
24 is admitted, correct?

25 JUDGE DIPPELL: The Order is admitted. The

1 Report and Order on Remand is admitted, but I am not
2 bringing in all of the testimony transcripts.

3 MR. HADEN: I'm tracking. If anybody cites to
4 the Order, we're okay there in briefing?

5 JUDGE DIPPELL: Absolutely.

6 MR. AGATHEN: I assume no one can cite the
7 rest of the case other than the Order in briefs.

8 JUDGE DIPPELL: There are multiple places
9 where testimony, the prefiled testimony has cited to
10 that record. So that brings those portions that are
11 cited, as far as, I mean, I don't know that that means
12 that you can cite everything in a piece of testimony
13 just because it was mentioned but certainly that
14 specific fact that that testimony is relying on is now
15 in this record.

16 MR. AGATHEN: I just want to be clear the
17 parties are not allowed to cite in their briefs any part
18 of the record other than what's been brought in through
19 testimony.

20 JUDGE DIPPELL: I don't want to prejudge
21 anything that you may cite in your brief. I want to
22 give you guidance, but I don't want you not to make an
23 argument that you were going to make because of
24 something I said that might have been interpreted
25 incorrectly. So I guess I'm saying if there's something

1 you need to cite that wasn't already among the testimony
2 and in the record, I don't think that's in evidence. If
3 there's something that has been incorporated in the
4 testimony before us in this proceeding, then I think
5 you're free to cite to that. If you're in doubt, if it
6 were me I would cite it and wait for somebody to do a
7 motion to strike.

8 MR. HAGEN: Fair enough.

9 MR. AGATHEN: Thank you for the clarification.

10 JUDGE DIPPELL: I am not encouraging motions
11 to strike parts of briefs but it happens.

12 Other outstanding objections I had or
13 requests. Mr. Agathen had brought forward a request to
14 add two admissions to the record. Grain Belt has
15 objected to those admissions. Does Grain Belt still
16 object to those admissions being part of this record?

17 MR. SCHULTE: We do. And we had an
18 opportunity to review the case that was referenced by
19 Mr. Agathen, and there are a couple of distinguishing
20 circumstances from that case to this one. That was a
21 jury trial between two individuals. There was an
22 admission by a party opponent that was requested to be
23 read to the jury, and the Court there held that there's
24 no valid objection to the reading of Rule 59.01
25 admissions to a jury, and the justification for that is

1 the timing and manner of presentation of evidence which
2 is critical and vital to the -- sorry, a quote from that
3 case was many times it is the timing and manner of
4 presentation of evidence which is critical and vital to
5 the outcome of a litigant's case. Perhaps that is true
6 in a jury trial and perhaps that is fair when the party
7 litigants are individuals who are presumably present.
8 The admission here is not a jury trial. So the timing
9 of this does not really -- does not have an impact, and
10 the admission is by an individual who is the Vice
11 President of Transmission Development for Invenergy but
12 was not a witness to this case. And so it's
13 inappropriate to include that in the record with no
14 opportunity to respond.

15 The other issue that we have with this is that
16 one of the admissions referenced cross-references Grain
17 Belt Express's response to MLA DR G43 for clarification.
18 And so the admissions are incomplete because we don't
19 have the clarification.

20 JUDGE DIPPELL: Mr. Agathen, do you know was
21 that DR number, it's MLA DR G43, has that been admitted
22 into this record at all?

23 MR. AGATHEN: No, I didn't see any need for
24 it. If counsel for Grain Belt thought that it should
25 be, then I thought that was up to him.

1 JUDGE DIPPELL: The response does refer to it
2 for clarification. And that's the only reason I really
3 see to not allow these. I frankly am puzzled that the
4 first one Grain Belt wouldn't just admit to but.

5 MR. SCHULTE: No. 6?

6 JUDGE DIPPELL: Yes.

7 MR. SCHULTE: Yes, we can admit to that. Yes,
8 his title and name, sure.

9 JUDGE DIPPELL: Thank you. That is Mr. Brad
10 -- and how do you say his name?

11 MS. CALLENBACH: Pnazek.

12 JUDGE DIPPELL: Pnazek, P-n-a-z-e-k, is the
13 Vice President of Transmission Development for
14 Invenergy. He is responsible among other things for the
15 development of Grain Belt Express transmission line
16 Project and the response was that Grain Belt admits that
17 fact. So that is a fact now on the record.

18 MR. AGATHEN: Your Honor, I'd be happy to file
19 as a late-filed exhibit the answer to that and the
20 question to the data request that's mentioned there.

21 JUDGE DIPPELL: Okay. I would be open to
22 that. So maybe I will save the rest of this ruling for
23 another day.

24 Mr. Agathen, if you could supply that DR No.
25 GR43 and answer, and I will let you all go ahead and

1 make written arguments with regard to this.

2 Mr. Agathen, if you could submit that within -- can you
3 do that by tomorrow or could you do that by Monday?

4 MR. AGATHEN: By Monday.

5 JUDGE DIPPELL: If you will submit that by
6 Monday and if Grain Belt would file and any other party
7 file any further response to why that should not be
8 admitted by -- could you do that by Friday, next Friday?

9 MR. SCHULTE: Yes, that's no problem.

10 JUDGE DIPPELL: Then I will have you do that
11 and I will save that one still for another day. You
12 guys are giving me new evidentiary conundrums.

13 Okay. So then there was a request -- my notes
14 are in several different places. There was a request to
15 take administrative notice of Michael Skelly's direct
16 testimony at page 14, lines 5 through 7 in the
17 EA-2016-0358. There were objections to that to taking
18 administrative notice of that. Yes. I had objections
19 from both Grain Belt and from MEC, and again I know you
20 were on a roll objecting but is this really a fact that
21 you're not just willing to admit?

22 MR. SCHULTE: You recall we never got a copy,
23 I can't even remember what we're talking about.

24 JUDGE DIPPELL: Okay. So again, it's Michael
25 Skelly's direct testimony from the EA-2016-0358 hearing

1 and I'll just pull it up so I can read it verbatim. But
2 basically it's that he says that in January of 2015,
3 Grain Belt or Invenergy rather, I think, held its
4 initial solicitation.

5 MR. SCHULTE: It would not have been
6 Invenergy. Invenergy did not own the --

7 JUDGE DIPPELL: Let me just pull it up and
8 I'll just read it. Okay. Michael Skelly's direct at
9 page 14, lines 5 through 7 says a strong need for the
10 new service that will be provided by the Project was
11 demonstrated by the open solicitation process that Grain
12 Belt Express held from January to March 2015 through
13 which customers could subscribe for capacity on the
14 Project.

15 MR. SCHULTE: We withdraw our objection for
16 the admission of that statement.

17 JUDGE DIPPELL: What about MEC?

18 MS. WHIPPLE: Your Honor, our objection was
19 procedural, not substantive. So we'll defer to Grain
20 Belt's choice on this. We just objected to snippets of
21 testimony and the rule of completeness. We'll follow
22 suit. If they're comfortable with it, we will be too.

23 JUDGE DIPPELL: Or I can overrule your
24 objection since I have already said we're not going to
25 admit the whole record.

1 MS. WHIPPLE: Yes.

2 JUDGE DIPPELL: That was basically your
3 objection.

4 MS. WHIPPLE: That was basically my procedural
5 concern, yes, Your Honor.

6 JUDGE DIPPELL: So MEC's objection is
7 overruled and Grain Belt's objection is withdrawn and
8 those lines that I just read are admitted.

9 Okay. And then the last one that I have that
10 we haven't discussed was MLA also made a request for
11 administrative notice of the direct testimony of
12 Dr. Anthony Wayne Galli, G-a-l-l-i, at page 29, line 23
13 through page 30, line 5. And I'm trying to see was that
14 also in the EA-2016 case?

15 MR. AGATHEN: Yes, Your Honor.

16 MS. WHIPPLE: Is Your Honor thinking of
17 reading that too?

18 JUDGE DIPPELL: Yes, I can. I'm looking at my
19 notes which seem to have made sense last night. Okay.
20 Let me pull that up real quick. So we're all on the
21 same page. Okay. Direct testimony of Dr. Anthony Wayne
22 Galli, page 29, line 23 through page 30, line 5 says
23 MISO has designed the DPP process to prevent
24 interconnection customers from entering the DPP and
25 signing interconnection agreements until it is certain

1 the customer's project will be built. Withdraw of
2 projects that enter the DPP process creates significant
3 problems for MISO because future interconnection
4 projects are modeled assuming projects in the DPP are
5 built. Changing the assumptions causes study delays,
6 additional study costs and general uncertainty. And
7 then the next sentence continues but is cut off at the
8 end of line 5 which it says considering all of this
9 including the need to coordinate with PJM and it
10 continues, but I don't think that was part of what
11 Mr. Agathen was trying to admit. This was during the
12 testimony of Mr. Sane.

13 So I guess, first of all, I will ask if the
14 objections are still in place.

15 MR. SCHULTE: Yes, and I would distinguish
16 this snippet from the previous snippet. The previous
17 snippet was a fact. This testimony is opinion. And so
18 we object on due process grounds and the rule of
19 completeness because this witness is not available to
20 explain his opinion, he's not available for
21 cross-examination, and it's an incomplete portion of the
22 full record in the previous case.

23 JUDGE DIPPELL: And did you have anything
24 else, Mr. Agathen?

25 MR. AGATHEN: I didn't, Your Honor, except to

1 say that that piece of testimony from Mr. Galli was
2 significant in my mind in response to Mr. Sane's
3 testimony about the complaint case at the FERC which
4 Invenergy filed against MISO. And that testimony from
5 Mr. Galli basically supports MISO's position in that
6 complaint case.

7 JUDGE DIPPELL: Well, I'm going to sustain
8 these objections and not allow this testimony. There
9 were significant other pieces of testimony including an
10 errata which wasn't directly to this testimony. So
11 anyway, I'm going to sustain those objections and deny
12 admission of that.

13 Now, there was some questioning after that
14 that I had said at the time was sort of in the manner of
15 an offer of proof and that can stay as an offer of
16 proof. But frankly, I think it could stay regardless
17 because the witness basically testified that he didn't
18 know that much about the process and he didn't really
19 add anything to it. But anyway, that's the ruling on
20 that.

21 Were there any other outstanding rulings that
22 I had not besides the one we're holding still?

23 MR. AGATHEN: I can't think of any, Your
24 Honor.

25 JUDGE DIPPELL: Excuse me?

1 MR. AGATHEN: I can't think of any, Your
2 Honor.

3 JUDGE DIPPELL: I think that's everything. If
4 you realize later that I missed something else, please
5 bring it to my attention. We had a briefing schedule
6 set. And I failed to pull it up here. Does anybody
7 recall what the -- oh, no, I have it down here. Initial
8 briefs are due on June 30 and reply briefs are due on
9 July 7.

10 I am hoping to, and our wonderful court
11 reporter is hoping to have the transcripts done within
12 the ten business days that is our usual. I will note
13 that June 19 is a federal holiday. So that kind of
14 lengthens the timing of the transcripts. But I know
15 that Ms. Bentch will work on them as quickly as
16 possible. When I get those transcripts, those in-camera
17 portions, I'm going to take a look at those and see if
18 there's any of it that we can declassify to a lower
19 level. And so I may be contacting the parties to see if
20 that's possible before the official transcripts are
21 filed to try to make that as less confusing and as much
22 public information as we can.

23 MS. CALLENBACH: Excuse me, Judge. Could I
24 make a motion to extend the reply brief deadline to the
25 following Friday, July 14, just given that the week of

1 the 7th is a holiday week and a shorter week and it's
2 only one week subsequent to the filing of initial briefs
3 unless parties have any objection to another week.

4 JUDGE DIPPELL: So you're saying July 14?

5 MS. CALLENBACH: Yes.

6 JUDGE DIPPELL: If Grain Belt wants to extend
7 things, they are welcome to, but I will say that if you
8 get an extra week the Commission may need an extra week
9 for its decision. And while no promises are made on the
10 decision date, the Commission is aware that Grain Belt
11 had requested a decision be made in early August. And I
12 for one don't want to spend my whole summer on this
13 case. So I would like to get you an Order as quickly as
14 the Commission is able to. But anyway, I just wanted to
15 say that. If we extend briefing another week, then the
16 Commission is liable to need another week as well.

17 MS. CALLENBACH: Yes, that's understood, and
18 we certainly do want an Order as quickly as possible but
19 not -- we don't want to sacrifice a good written product
20 just for time sake.

21 JUDGE DIPPELL: Yes. Okay. That is fine if
22 that's agreeable to the other parties. July 14 for
23 reply briefs.

24 All right. Is there anything else before -- I
25 will do a notice listing out all of the exhibits that

1 were admitted and it will list the ones that weren't
2 admitted as well. So you can look for that in a few
3 days and hopefully that may come out with the
4 transcript.

5 MR. AGATHEN: Judge, do you have handy there
6 the last exhibit in the 300 series?

7 JUDGE DIPPELL: Yes.

8 MR. AGATHEN: I think you added a few to it.

9 JUDGE DIPPELL: I did. Let me just go through
10 those because those were probably the most confusing.
11 So 300 was not admitted, 301 HC, 302, 303. 304 was what
12 I labeled the 2014 Report and Order. And I took
13 official notice of that. 305 was not admitted. That
14 was the Economic Impact Analysis. And then I marked the
15 Report and Order on Remand in the 2016 case as 306. So
16 that's what I have.

17 Does anybody else need me to go over exhibit
18 numbers?

19 MR. PRINGLE: Not going over numbers, Judge.
20 I just want to make sure I got Staff's homework complete
21 with the corrections we made earlier. Staff will be
22 filing corrected copies of Exhibits 101, 102, 104 and
23 109.

24 JUDGE DIPPELL: If that was all of the ones
25 with corrections, yes, that's what I have.

1 MR. PRINGLE: Thank you, Judge.

2 MS. CALLENBACH: Judge, along those same lines
3 we had committed to filing a new version of Ms. Rolanda
4 Shine's testimony that included her November 21, 2022
5 errata sheet plus the red-lined one pager that we
6 circulated amongst the parties here. That also
7 incorporates the changes she made on the stand. We will
8 submit that just so there's one clean copy for the
9 exhibit.

10 JUDGE DIPPELL: That would be good. If you
11 can -- if everybody can submit those by next Friday,
12 too.

13 MS. CALLENBACH: Just to clarify, Judge, Ms.
14 Shine's corrections were pretty extensive. The
15 witnesses that made kind of minor changes on the stand,
16 are those acceptable as is or do we need to submit new
17 exhibits for every witness who made minor changes?

18 JUDGE DIPPELL: I think we can probably do
19 with just the ones that were big changes like Ms.
20 Shine's. That will probably end up being less confusing
21 in the long run.

22 MS. CALLENBACH: Thank you.

23 JUDGE DIPPELL: Any other questions about
24 exhibits? Okay. Any other questions about anything
25 else? Seeing none, I think that completes the hearing.

1 We almost made it by 5:00. And I thank you all for your
2 participation and your patience and we can go off the
3 record.

4 MR. AGATHEN: Thank you, Judge.

5 (Thereupon, the hearing concluded at 5:08
6 p.m.)

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

I N D E X	Page	
1		
2	Staff's Witnesses:	
3	ALAN BAX	
	Direct Examination by Mr. Pringle	856
4	Questions by Judge Dippell	859
	Cross-Examination by Ms. Callenbach	863
5	Redirect Examination by Mr. Pringle	865
6	MICHAEL RUSH	
	Direct Examination by Mr. Pringle	867
7	Questions by Commissioner Holsman	869
8	MICHAEL STAHLMAN	
	Direct Examination by Mr. Pringle	872
9	Cross-Examination by Mr. Schulte	875
	Questions by Chairman Rupp	916
10	Questions by Commissioner Holsman	933
	Questions by Chairman Rupp	935
11	Questions by Judge Dippell	936
	Cross-Examination by Mr. Williams	941
12	Cross-Examination by Mr. Ellinger	943
	Cross-Examination by Ms. Whipple	945
13	Further Cross-Examination by Mr. Schulte	954
	Redirect Examination by Mr. Pringle	957
14		
15	Ag Associations/Farm Bureau's Witness:	
16	GARRETT HAWKINS	
	Direct Examination by Mr. Haden	961
	Questions by Commissioner Kolkmeyer	963
17	Questions by Commissioner Holsman	964
	Questions by Commissioner Coleman	974
18	Redirect Examination by Mr. Haden	975
19	Clean Grid Alliance's Witness:	
20	MICHAEL GOGGIN	
	Direct Examination by Mr. Brady	977
21	Cross-Examination by Ms. Whipple	979
	Cross-Examination by Mr. Schulte	981
22	Cross-Examination by Mr. Pringle	985
	Cross-Examination by Mr. Agathen	987
23	Questions by Chairman Rupp	998
	Questions by Commissioner Holsman	1001
24	Further Cross-Examination by Mr. Pringle	1007
	Redirect Examination by Mr. Brady	1008
25		

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

Sierra Club's Witness:	Page
MICHAEL MILLIGAN	
Direct Examination by Ms. Rubenstein	1014
Cross-Examination by Ms. Whipple	1016
Cross-Examination by Mr. Ellinger	1017
Cross-Examination by Mr. Pringle	1019
Cross-Examination by Mr. Agathen	1021
Questions by Chairman Rupp	1035
Questions by Commissioner Holsman	1035
Questions by Judge Dippell	1042
Further Cross-Examination by Mr. Pringle	1053
Patricia Stemme's Witness:	
PATRICIA STEMME	
Questions by Judge Dippell	1055
Questions by Commissioner Kolkmeyer	1057
MEC's Witnesses:	
JOHN TWITTY	
Direct Examination by Ms. Whipple	1059
Cross-Examination by Mr. Agathen	1062
REBECCA ATKINS	
Direct Examination by Ms. Whipple	1065
Voir Dire Examination by Mr. Agathen	1066
Cross-Examination by Mr. Agathen	1070
Cross-Examination by Mr. Pringle	1075
JOHN GROTZINGER	
Direct Examination by Ms. Whipple	1077
Cross-Examination by Mr. Pringle	1080
Cross-Examination by Mr. Agathen	1080
Cross-Examination by Mr. Haden	1085
Redirect Examination by Ms. Whipple	1086
Renew Missouri's Witness:	
JAMES OWEN	
Direct Examination by Ms. Greenwald	1088
Cross-Examination by Mr. Agathen	1090
Questions by Commissioner Holsman	1092
Questions by Chairman Rupp	1093
Certificate of Reporter	1114

E X H I B I T I N D E X

Received

Staff's Exhibits:

100	Rebuttal Testimony of Alan J. Bax and Attached Schedules	857
106	Rebuttal Testimony of Michael L. Rush and Attached Schedules	868
107	Rebuttal Testimony of Michael L. Stahlman and Attached Schedules	874
109	Staff Report	874

Ag Associations/Farm Bureau's Exhibits:

400	Rebuttal Testimony of Garrett Hawkins	962
-----	--	-----

Clean Grid Alliance's Exhibits:

600	Rebuttal Testimony of Michael Goggin	979
601	Cross-Surrebuttal Testimony of Michael Goggin	979

Sierra Club's Exhibits:

850	Rebuttal Testimony of Michael Milligan	1016
-----	---	------

Patricia Stemme's Exhibit:

950	Rebuttal Testimony of Patricia Stemme	1056
-----	--	------

MEC's Exhibits:

700	Rebuttal Testimony of John Twitty	1061
701	Rebuttal Testimony of Rebecca Atkins	1073
702	Rebuttal Testimony of John Grotzinger	1079

Renew Missouri's Exhibit:

800	Surrebuttal Testimony of James Owen	1089
-----	-------------------------------------	------

(All exhibits were retained by the Public Service
Commission.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CERTIFICATE OF REPORTER

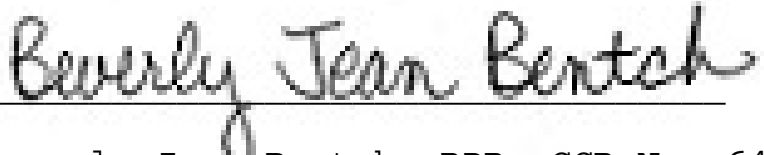
STATE OF MISSOURI)

COUNTY OF COLE)

I, Beverly Jean Bentch, RPR, CCR No. 640, do hereby certify that I was authorized to and did stenographically report the foregoing Public Service Commission evidentiary hearing; and that the transcript, pages 853 through 1113, is a true record of my stenographic notes.

I FURTHER CERTIFY that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or counsel connected with the action, nor am I financially interested in the action.

Dated this 27th day of June, 2023.



Beverly Jean Bentch, RPR, CCR No. 640

<hr/> \$ <hr/>	100 857:10,22,24, 25 881:13 1031:2	1083:4 1101:16 1102:9 1106:25 1107:4,22	2.2 1069:3
\$1 1026:4	101 1108:22		2.5 1023:16
\$1,167 1083:9	102 1108:22	15 875:21 877:3 882:3,7 978:19 981:23,25 1002:5 1004:15 1023:23 1026:25 1027:16, 24 1028:21 1033:22 1070:17 1082:13	2.6 1020:6 1032:7
\$10 898:2,3 899:16 903:20 920:22 921:4	104 1108:22		2.8 1023:16
\$11 1027:19 1028:4,8,24 1029:11,13 1030:4,16	106 867:20 868:9, 11,12		20 860:23 896:23 897:17 898:7 899:19 910:10 1067:19 1079:7 1082:7
\$2.60 1032:11	107 873:7 874:11, 13,15	15-minute 909:18	200 1062:19 1080:17 1083:6 1086:16
\$22,721,000 891:6	108 982:18	150 966:7,12 967:2	2005 971:24
\$3.80 1032:11	109 857:7 867:17 873:4 874:11,13, 15 1108:23	1500 879:7	2014 1108:12
\$30 1029:3,7,10	10:00 909:18	16 877:4 886:12 1070:17 1090:10	2015 1102:2,12
\$300 860:10	10:15 909:19	161 978:19	2016 887:17 889:3 897:12 903:3 906:19 955:17 990:4,9 991:3 1096:13,23 1108:15
\$8 892:5	11 977:20 1027:15,24 1028:21 1030:22, 23 1032:1 1043:7 1082:12	17 886:13 890:18, 22 1026:25 1051:1 1079:6	2017 898:17,20 899:24 900:19
\$8,019,054 891:7	110 982:15	17.6 902:22	2019 897:17 898:7,20 899:23 900:19 920:7,22 921:3 1062:8 1063:5 1071:18 1081:3,20 1082:20
<hr/> (<hr/>	12 864:16 875:6 876:24 898:9 1027:16,24 1028:21 1031:22 1032:5 1043:1 1081:9	18 890:25 922:1 938:1 994:15 1090:10	2019-central 886:23
<hr/> (3) <hr/>	120 883:10	19 961:20 978:17 1032:1 1059:20 1065:25 1077:24 1106:13	2020 990:4,9 991:3
<hr/> 1 <hr/>	12:00 959:21	1960s 1039:16	2021 891:1 990:7, 8,17,24 1028:1 1047:20
1 888:1,2 889:2,4 896:21,22 897:14 899:19 1003:4,7, 10 1004:5 1025:14,17 1026:3 1027:12 1033:12 1037:4, 11 1067:20	13 875:6 876:24 1027:5 1032:5 1062:25 1079:7	1:00 958:1	2022 891:2 990:2, 6,17,24 1109:4
1(3) 1068:18	133 990:1,13	1:15 1013:7	2023 856:3 887:2, 5,10 961:20
10 859:18 907:3 937:24 938:3 1025:7 1026:1 1027:4 1031:8,9 1050:1,6 1082:13 1090:9	135 978:17 990:1, 13	<hr/> 2 <hr/>	
	136 1062:11 1080:21 1082:24	2 897:14,19,24 898:12,13 1025:23 1027:13 1033:12	
	14 875:21 882:10 1043:1 1062:25	2.0 1041:22	

1042:25 1059:20 1065:25 1077:24	3,200 914:4	4240-20.045(5) 860:23	6000 914:3,4
2024 1048:1 1049:12 1053:15	3,262 982:25	43 905:23,24	601 978:24 979:6, 7
2028 1003:6	3.0 1023:10,16	43.4 990:4,9 991:1	64 1081:25 1082:9 1083:17 1086:15, 19 1087:1
205 887:21,22 888:8	3.8 1020:6 1032:7	452 995:16	65201 1059:12 1065:17 1077:16
206 887:21,22 888:4,5 889:3 931:22	30 887:4 973:7 994:21 1030:20, 22 1047:8,14 1049:1 1103:13, 22 1106:8	490.065 1068:16	68 1081:11
21 1109:4	300 894:3 896:8, 10 1108:6,11	<hr/> 5 <hr/>	<hr/> 7 <hr/>
216(a)(2) 1049:25 1050:7	301 1108:11	5 862:8 910:12 982:11 998:7,17 1025:6 1031:8,9 1042:20 1049:24 1050:3,4 1071:1 1101:16 1102:9 1103:13,22 1104:8	7 873:12 890:16 924:17 1025:7,9 1067:19 1101:16 1102:9 1106:9
22 898:16 995:12 1081:10 1082:7	302 1108:11	5,000 983:1	7.0 956:14
22-page 1067:1,16	303 1108:11	50 970:24	70 972:11,16,21 973:9
2200 1059:11 1065:16 1077:15	304 1108:11	500 875:12,15,25 933:13 938:5	70/30 975:16
23 1067:19 1103:12,22	305 1108:13	5000 913:18 914:13,16,20,24 983:11 986:8,10	700 1060:1,11,12, 20,23 1061:1
24 907:21	306 888:19,23 1108:15	54 1044:2	701 1066:6,16,18 1073:20,21
25 955:19	31 907:17 911:5	55 1082:25 1083:1	702 1078:5,16,23 1079:14,15
2500 876:23 879:19,23 919:3 987:19 988:5,19, 23 989:10	3200 914:4	59.01 1098:24	72 1081:13
26 992:7,14,24	33 911:3	<hr/> 6 <hr/>	74 907:4,16 910:13 917:6 982:3 985:22 986:16 998:25 999:12
2875 1015:6	34 911:3 1095:18	6 864:16 877:22 878:13 907:1,2 911:12 921:25 982:14,18 989:22 990:12 1033:22 1043:7 1082:12 1100:5	77 955:21
29 1103:12,22	35 1071:1 1083:4	6,021 982:25	78 955:22
2:15 1013:7	3500 933:13	600 978:22 979:6, 7,15	7th 1107:1
<hr/> 3 <hr/>	357 994:21		<hr/> 8 <hr/>
3 875:3 878:10 886:9 1023:21 1026:25 1031:12, 22 1062:22 1067:19 1070:14 1082:4	<hr/> 4 <hr/>		8 856:3 877:22 878:5 897:24
	4 860:18 862:8 882:6 890:15 911:10 987:16 1024:18 1031:23		
	40 1047:16 1049:3		
	400 961:25 962:11,12,13		
	4000 986:9		
	41 991:8		

925:15 928:18,19 1067:20	A-T-K-I-N-S 1065:5	accounting 986:17	add 880:6 902:14 953:25 1018:18 1023:3 1098:14 1105:19
8-5-0 1016:4	a.m. 856:1	accredit 999:9,14	added 971:16 973:17 1023:6,13 1108:8
8.8 956:13	a/k/a 889:3	accreditation 912:18	adding 999:25 1000:4 1026:3
80 956:1 986:7,16 992:7	Aaron 864:18	accredited 951:24 952:1	addition 861:11, 25 862:1 870:15 911:20 993:7 1023:17 1026:12 1037:10 1039:5 1063:20 1070:17 1084:4 1093:8
800 1088:15 1089:3,5,6	ability 870:3 897:5 930:24 951:19 955:7 1007:15 1009:15 1012:15 1092:18	accrue 1000:15	additional 865:25 896:11 929:16 944:14,19 969:12 1000:5 1009:4 1025:11 1036:17 1047:10,19 1051:1 1053:16 1069:18 1071:2 1081:17,21,25 1082:24 1083:5, 20 1084:11,15 1104:6
80210 1015:7	absence 1009:12	accurate 864:20 875:13 883:11 884:19 914:11 934:12 965:24 970:15 972:18 978:6 1006:1 1060:3 1078:8	
81 992:14,23	Absent 967:24	achieve 1020:25 1051:6	
850 1015:10 1016:2,4,6	absolutely 1002:3 1097:5	acknowledge 1005:16	
87 972:10,15 987:18	AC 1044:20,23 1045:11	acknowledged 993:11	
8:35 856:1	accept 914:10 992:6,14	acknowledging 949:8	
<hr/> 9 <hr/>	acceptable 949:6 985:1 986:15 1031:5 1109:16	acquisition 955:2, 3,7,12	
9 859:18 863:22 1025:6 1067:19 1079:6	access 944:24 955:12 1016:25 1018:4 1036:20 1050:24 1092:15	acronym 1039:20	
9,300 982:24	accessible 1017:1 1049:19	Act 1003:24 1050:1,7	
9-5-0 1055:16	accommodations 971:9	active 895:7	
9.0 956:1	accompanied 977:20	activities 869:18	
9.5 956:1	accomplish 1092:20	activity 1086:22	
90 987:18	account 926:22 984:22 986:10 991:13,24 1010:22 1011:2,9, 15 1012:1,3,4,6,9	actual 876:22 890:7 910:16,19 911:15 915:12 938:4 999:2	
9000 914:6		adamant 971:22	
9200 914:8		adamantly 973:5	
93 998:7,17,23		adapted 968:16	
9300 914:8			
95 998:23			
950 1055:16 1056:6,17,20			
<hr/> A <hr/>			
A-L-A-N 856:14	accounted 1011:23		address 859:20 862:9 889:12 892:22 1003:9 1015:5,6 1024:1 1025:13 1027:13 1035:22 1036:6 1053:17 1059:10 1065:15 1077:14

addresses 938:9	admitted 947:18 961:24 993:19 1054:24 1056:6 1069:10 1095:2 1096:24,25 1097:1 1099:21 1101:8 1103:8 1108:1,2,11,13	affirmative 871:21	1079:3,22 1080:10,11,15 1081:8 1084:23 1086:13 1090:3,5, 6,8 1091:20 1097:6,16 1098:9, 13,19 1099:20,23 1100:18,24 1101:2,4 1103:15 1104:11,24,25 1105:23 1106:1 1108:5,8
addressing 899:16 970:19	adopted 934:13 971:16	afraid 1046:21	Agathen's 1069:15
Adds 914:6	advance 864:24, 25 865:5	afternoon 979:22, 23 981:11,13 985:11,12 987:9, 10 1016:15 1019:16 1021:16 1035:16 1057:1,2 1075:6,8 1079:25 1080:1	aggregate 1083:3
adequacy 1022:2 1039:3,7 1047:21 1049:6 1051:1	advantage 949:11	afterward 948:20	aggression 869:21
adequate 1007:16 1040:7 1096:15	advantageous 950:5 1036:19	ag 862:16 926:6 940:20 958:22 962:13 997:20 1008:6 1034:15 1053:24 1076:4 1085:1 1091:23	aging 971:1
Adjust 916:21	advantages 1034:9	Agathen 858:7 862:15 893:17 940:19 959:3,10, 14 979:19 987:8, 12,13 988:4,22 990:10,12,21 992:24 993:3,14, 25 994:17,20 996:17,19 997:18 1008:7,20 1021:15,18,19 1028:17,19 1029:25 1030:2,3, 10,15 1034:12 1035:8,21 1053:23 1061:23, 25 1062:1,3,5,15, 17,18 1063:8 1064:2 1066:19, 25 1067:14 1069:17,19,25 1070:4,10,11,13 1071:4,5,12,24 1072:10,17 1073:16,17 1074:15 1075:24, 25 1078:24	agree 869:11,22 871:11 881:16 882:10 904:1 912:4 949:15 950:7 965:21 972:12 1037:15 1044:9 1046:4 1048:1,7 1079:2
admissibility 1068:16	advocate 971:25		agreeable 1107:22
admissible 896:4 1068:20 1069:4,9	Advocates 1088:12		agreed 888:6 915:17 931:15 1028:21,25
admission 894:15 896:10 962:8,9 978:20 979:3 1016:2 1060:11 1066:15 1067:15 1078:15 1079:3 1098:22 1099:8, 10 1102:16 1105:12	AEC 892:3		agreement 860:13 876:4,18 877:13 880:23 890:19 891:1,11,14,16 892:1,3,14,25 893:3 918:14,22 928:24 930:13,17 957:6 972:22 973:9,10,13,16 1037:23 1038:1 1049:16 1063:17 1074:6,7
admissions 1098:14,15,16,25 1099:16,18	AECI 870:16 877:7,15 878:15 880:11,20,24 882:24 890:19,25 891:2,6,10 892:1, 3,7,10,11 924:24 925:4 939:10 1082:15		agreements
admit 857:24 868:11 874:13 962:11 979:6 1016:5 1060:24 1073:20 1079:14 1089:5 1096:12, 17 1100:4,7 1101:21 1102:25 1104:11	affect 881:8 997:6 1022:22 1051:9		
admits 1100:16	affected 901:13 934:8 967:1 971:9		
admittance 962:7	affects 920:18 1011:17 1022:6		
	affirm 856:8 866:21 872:8 960:24 976:20 1014:12 1036:5 1055:2 1058:20 1064:24 1077:2 1087:20		

879:23 882:24 889:10 890:6 892:20 893:2 899:6 921:9 929:6 931:14,21 972:16 1000:17 1001:2 1062:11 1103:25	alleviated 1018:3 1030:19 alleviating 1027:7 1031:9 Alliance 859:1 863:4 945:17 976:10 977:17,24 979:7 987:7 1019:9 1052:22 1059:14,16 1061:14,22 1065:19,21 1074:24 1077:18, 20 1089:19 1090:2 Alliance's 958:7 allocate 1087:2,3, 4 allocated 860:3 863:17 864:10,13 937:6 allowed 894:25 948:12 972:7 1097:17 allowing 948:18 949:1 aloud 873:16 alternating 1044:14,15,24 1045:1 alternative 992:18 1084:17 alternatives 994:5 amenable 881:16 960:7 967:21 971:2 amended 891:2 937:25 938:6 1090:12 amendment 920:17,20 965:22	966:2 971:13 amendments 889:16 901:13 933:6,16 934:12 966:22 971:14,16 Ameren 859:22 860:2 863:16 864:10 937:15,16 American 981:17, 18 amount 882:22 913:14 914:12,19 918:25 929:13,14 942:16 952:13 958:16 982:7 984:10,22 986:6, 25 999:3 1004:4 1080:23 1081:21 amounted 1083:8 amounts 864:9 1067:22 analogy 883:8 analyses 1006:4 analysis 857:3 885:7 898:22 901:1,2,9 902:3, 14,15,25 903:1,22 904:20 911:2 912:19 918:5,10 923:21 925:11,13 926:2,14 927:17 931:7 936:9 939:11 940:4 943:4 955:6,11 986:4 990:24 991:16 992:8 993:5 994:2,8,10 995:24 996:23 997:16 1008:1 1009:3,6 1010:10, 11,13,17,18 1011:5,6,14,24,25 1012:4,5,7,8,10,	12,15,19,20 1020:5,24 1021:7 1023:4,7 1025:23 1032:18 1034:4 1038:6 1051:5 1085:6,18 1108:14 analyze 899:2 920:24 929:3 932:15 939:15 analyzed 912:20 analyzing 903:16 934:5 and/or 882:25 974:14 1022:14 annual 1047:15 answers 857:16, 18 868:2,5 874:4, 7 935:5 978:4,11 1015:20,23 1055:23 1060:7 1066:12 1078:12 1088:21,23 Anthony 1103:12, 21 anticipate 927:15 1052:3 anticipated 889:24 anticipation 937:12 apologies 960:13 985:21 apologize 964:13 1046:18 1073:13 appearing 1061:10 apples 997:12 applicable 864:3 application 861:3 865:8 866:5
---	--	--	--

929:17 936:2 938:21 applications 861:4 applied 1037:19 applies 924:19 apply 997:7 1083:16 1084:18 applying 934:6 approach 926:10 1024:2 approached 1004:25 approaches 926:25 Approaching 909:9 approval 873:17 881:6 920:11 929:21 approvals 880:25 approved 873:18 934:13 965:22 1022:7,24 approves 938:14 approving 1025:14 1027:12 approximately 860:10 914:3 1063:21 1081:12, 14 1084:5 April 961:20 978:17 1059:19 1065:24 1077:24 arbitrage 1012:16 arbitrary 914:23 area 928:7 980:13 984:14 986:2 994:22,25	1002:19 1036:20 1043:11 areas 956:17 991:12 1002:7,11 1027:7 1043:9,25 argue 993:20,21 argument 1001:1 1097:23 arguments 1101:1 Arkansas 995:3 arose 930:1 arrangement 880:5 1074:3 articulated 919:11 artificially 907:19 as-built 860:20,25 861:12 862:1 864:19,23 865:9 aspect 912:20 925:12 926:4,9 aspects 900:24 902:16 916:8 919:8 927:16,18 928:6 931:8 953:9 assented 881:7 assert 967:7 asserted 1083:13 assess 879:15 assessed 859:23 864:6 assessment 957:25 1047:7 assets 937:4 assistance 1041:24 Associated's 989:8 Association	981:18,19 1008:6 ASSOCIATION/ FARM 962:13 Associations 858:8 862:16 926:7 940:20 997:20 1034:15 1053:24 1064:5 1076:4 1085:1 1091:23 Associations' 958:22 assume 893:4 908:21 918:6 919:5 920:16 930:7 931:12 936:10 947:3 950:3 983:8 1097:6 assumed 881:10 884:1 901:24 907:5,20 911:19 913:22 914:1,3 948:8 assumes 906:10 907:8 assuming 905:14 923:16 940:16 948:13 952:9 958:9 1029:23 1104:4 assumption 920:5 982:4 1029:22 assumptions 879:16 901:24 915:8 919:6 953:1 957:9 1075:18 1104:5 assurance 870:17 assure 1074:6 Atkins 1064:22 1065:4,9,14,23	1066:7 1069:11 1070:11 1075:7 1076:9,17 1080:4 Atkins' 1068:12 attached 911:3 1015:12 1068:7 1073:24 attachment 885:24 886:5,6 887:19 1069:24 1073:15 attachments 887:20 888:14,15, 19 attempt 894:1 attempted 893:17 1034:5 attempting 861:20 attention 1106:5 attest 1052:10 attorney 917:5 921:11 930:5 1013:12,21 attorneys 858:21 960:8,9 1014:7 attribute 1034:10 auditors 899:2 Audrain 928:13 934:3 August 1107:11 Austrian 926:19 authored 1067:5, 25 authority 932:3,4 933:8,15 965:23, 25 1067:2,17 1068:10 average 910:14 911:23,24 913:5
--	---	--	--

921:19 939:15
 940:11 956:7,12,
 15,17 986:9
 990:3,8
averaged 907:20,
 24 908:11,12
 912:21
averaging 908:14
avoid 1038:16
 1042:9
aware 863:22
 865:23 874:2
 884:9 886:5
 905:19 906:18
 917:15 921:16
 952:15 955:1
 968:3 969:7,10
 970:19,21 971:2,
 6,10 996:21
 1000:24 1019:22
 1022:17 1032:14,
 17,18,21 1050:8
 1053:10,15,18,19
 1063:10 1069:6
 1085:11 1107:10

B

B-A-X 856:14

B-R-A-C 885:19

back 880:10 882:5
 886:9 901:10
 903:18 905:1
 909:23 911:16
 920:13 922:15
 924:10,16 929:9
 942:21 959:22,24
 975:15 976:10
 988:10 996:16
 1013:10 1029:12
 1038:4 1045:1
 1058:12,15
 1062:7 1073:12
 1074:14,15,16

1081:20 1096:21

backbone 1037:1

bad 1001:2
 1072:13

Band-aid 920:4

Banshees 1094:3

barring 991:20

base 885:17
 942:10 967:3
 1022:5,6,8,11,12,
 18,22 1023:3
 1069:4

based 862:14
 871:19 873:11
 878:13 879:16,20
 884:12,22 897:7
 903:16 904:16
 910:16,21 911:15,
 17 919:10 920:1
 927:14 931:13
 934:6 936:11
 938:19 940:17
 943:11 954:13
 974:18 975:9
 983:6 986:15
 987:2 1002:11
 1006:19 1007:5
 1009:3 1050:20
 1052:15 1058:5
 1084:11 1094:15

bases 1068:22

basically 861:18
 939:14 963:15
 1018:8 1030:13
 1044:24 1057:6
 1078:24 1102:2
 1103:2,4 1105:5,
 17

basis 899:18
 903:19 904:18
 905:15 907:9
 908:7 968:14
 973:5 1018:13

1021:8 1066:21

Bax 856:13,14,19,
 21 857:21 858:3
 863:10 864:15
 865:20 866:10,13

bear 883:12 928:2
 965:16 972:4
 973:15 1046:13

bearing 968:2

beat 973:14

began 856:1

begin 969:1
 1013:11

beginning 861:11,
 23 878:9,13
 896:23 898:9
 907:3 910:12
 995:16 1023:23
 1025:6 1096:7

begins 886:12,13
 949:2

behalf 977:17,24
 1059:20 1061:10
 1065:25 1077:24

behoove 967:10

belief 857:19
 868:6 874:8
 999:16 1002:1
 1088:24,25

believed 967:2

believes 936:1

Belt 859:5 860:20,
 21 863:8,24
 864:17 869:9
 870:25 871:5,10
 874:20,22 875:11
 876:20 879:2,5,7
 881:15 883:5,22
 884:13 888:6,8,
 10,22 889:9,11
 891:5,15,23

892:2,19,21,25
 894:15,16 898:10,
 23 899:3,4 900:22
 901:4 902:2,11
 903:4,23 905:3
 906:9,14 910:15,
 19 912:2,19
 913:18,20 914:3,
 20 916:14 918:14,
 16,17 919:2
 937:13 941:15
 947:8,19 948:1,8,
 18 949:1 950:20
 953:3,5,12,18
 954:1,6,14,20
 957:12 969:8
 975:22 980:2,21
 981:9 982:4,20
 983:1,10 985:15
 987:15,19 992:15,
 16 994:3 995:25
 997:8,13 1003:6
 1004:5 1009:11
 1012:12,21
 1016:20 1019:11,
 24 1020:7,8
 1021:21 1022:18,
 21 1023:3,11,13
 1024:6,10,12,13,
 15 1025:18
 1031:23 1032:15,
 17,25 1033:11,20,
 23 1034:6,10,11
 1036:2,17,19
 1037:3,5,10
 1039:25 1043:1,
 13,22 1045:10,15
 1049:11,19
 1052:24 1053:15
 1061:16 1062:6,
 12 1063:2,7,21,23
 1070:19 1071:20
 1075:1 1080:16,
 18 1082:22
 1083:7,17 1084:5,
 7 1089:21
 1091:12 1092:11

1098:14,15 1099:17,24 1100:4,15,16 1101:6,19 1102:3, 12 1107:6,10 Belt's 884:1 902:5 906:5 931:9 946:10,14 952:21 1034:1 1102:20 1103:7 bench 940:14 943:12 954:13 960:8 962:21 963:23 benchmark 1009:22 1010:3 beneficial 967:20 999:17 1000:2 1003:11 1026:13, 15,23 1036:21 benefit 902:10 933:17,18 949:19 966:11 972:3 974:11 987:14 1000:8,14 1016:20 1018:10 1026:5,17,18 1030:19 1032:11 1035:23 1036:22, 23 1043:21 benefit-cost 1020:5,6,7,13 1023:9,14 1032:6 1033:2 benefits 899:12 905:13 924:20,21, 23 925:3,4,8,9,25 930:23 931:1,5,10 948:8 949:17 953:9,18 984:22 1006:6,9 1007:25 1010:15,19 1017:20 1020:16, 22,24,25 1021:5,6	1029:19 1033:13 1034:5,8 1051:2 Bentch 1106:15 Berkeley 990:2,14 991:6 Berry 898:10 899:24 992:15 997:15 Berry's 993:4,15 bidirectional 862:9 865:21 866:1,3,8 870:4 883:6 930:13,16 1037:16 1047:21 bidirectionality 883:18 big 889:22 1036:22 1037:20 1038:14,16 1041:10,11 1109:19 bigger 929:5 1037:13 biggest 936:4 bilateral 1000:17 1010:4 billion 902:22 bills 1018:7 bit 904:18 933:10 937:3 941:6 946:24 947:22 975:19 1002:1 1010:5 1044:15 1058:12 1085:13 black 931:15 1041:23,25 1042:3,4,5,7 blackouts 1038:16 blips 963:22 blow 912:23	blowing 907:22 912:25 913:3 914:14 blue 1092:22 blurred 881:22 boat 924:5 boats 924:5 body 961:19 book 1048:18 border 944:13 borne 883:23 bother 1070:4 bottle 1015:4 bottom 873:13 889:4 898:12 900:1 906:1 1025:9 bought 1063:15 1071:6 Boulevard 1059:11 1065:16 1077:15 bounce 917:1 boxes 1020:9 BRAC 871:11,12 885:16,17 Brad 1100:9 Brady 859:2 863:5 945:18 958:11 960:6 976:11 977:5,6,11 978:14 979:3,13 990:5,16 992:22,25 993:8 994:16,18 998:13, 16 1006:23,25 1007:2 1008:12, 17 1011:13 1012:24 1019:10 1052:23 1061:15 1074:25 1089:20	break 909:13,18, 23 910:2,6 911:21 924:6,10 958:1 959:19,20,25 962:20 1006:16, 17 1013:7,11 1030:13 1034:20 1058:10,11 1085:12 breaks 924:15 briefing 1095:2 1097:4 1106:5 1107:15 briefly 877:21 954:25 1016:12 1022:4 1085:2 briefs 1097:7,17 1098:11 1106:8 1107:2,23 bring 968:19 1056:8 1106:5 bringing 950:4 994:3 1097:2 brings 1036:12 1054:12 1097:10 broad 926:4 973:18 1050:24 broader 940:10 broadly 916:1 926:19 1044:12 1045:8 brought 876:19 904:10,12 930:12 936:2 943:1 974:7 1097:18 1098:13 brunt 928:2 968:2 972:3 bucket 967:9 build 905:10,11 919:10 929:12 947:8 965:23
---	--	--	---

984:14 1001:24 1002:4,25 1003:1 1030:25 1041:10 1043:21 1044:1 1051:25	burying 969:17	called 994:22 1033:5 1041:3 1051:20 1068:11 1071:7 1083:8	1009:4,20 1010:23,24 1012:16 1038:20 1046:2 1047:19, 25 1048:5 1049:9 1051:4 1053:12 1062:12 1063:1,7, 15,20 1080:17,21, 23 1081:16,21 1082:16,22 1083:17,22 1084:4 1088:10 1102:13
build-out 1033:6, 10 1037:4,5	business 906:9 1001:2 1005:22 1015:5,6 1059:10 1065:15 1074:4,5 1077:14 1095:5 1106:12	calling 1024:14 1041:4 1049:21	capital 926:24
building 905:5 906:10 919:7 974:10 980:9 983:12 995:25 1002:21 1026:9 1028:5,10 1029:15 1030:6, 17,21 1044:22 1051:21	businesses 944:24 945:4 1017:21 1018:10 1019:2 1085:14	calls 866:18 872:5 1058:17 1064:21 1076:24 1087:17	capture 1041:5
builds 1032:24	buy 1062:11 1063:1 1081:20 1082:9	camera 1014:3	captured 1012:18
built 905:15 907:17 913:13 918:25 919:5,6, 20,22 925:18,19, 22 927:22 931:19 936:21 941:15 942:9 1002:19 1003:8 1023:7 1037:11 1093:2 1104:1,5	buying 1063:6 1082:22	Cameras 1014:7	car 883:9,10 923:14
bulk 859:24	C	capabilities 1041:24 1042:2 1047:21	Cardinal-hickory 1003:19
bullet 1046:10 1047:1,5,18 1048:4	caboose 926:8	capability 882:23	care 975:7 1037:22
bunch 926:20 1032:24	calculate 942:18 1026:17 1039:24 1040:14	capable 908:16 938:4 987:19	carefully 1048:3
burden 965:15 973:15	calculated 921:18 939:24,25 1032:15 1033:15, 19 1051:17,18	capacities 951:19	Carlos 877:20 882:20 890:13
burdensome 1096:13	calculating 925:8 939:17	capacity 857:1 867:13 872:25 902:22 907:5,7, 14,16,18,23 908:1,6,15,21 910:13,24 911:13, 19 912:2 913:5,6, 8,12 914:2 915:16 917:6,10 922:2,8, 23 923:1,3 933:22 942:2 943:8 956:5 980:7 982:3,12,24 983:11,14,15 984:1,2,25 985:23 986:1,6,7,8,23,25 987:3 990:3,8 991:1,7,12,16,18, 23 998:11,22,24 999:4,5,10,11,12, 13 1000:4,5,7	carryover 1039:16
Bureau 961:16 971:22 973:3 974:13	calculation 913:12 914:2 939:23	capacities 951:19	case 857:6,9 866:1 867:17,19 873:4,6 875:10 876:14 880:8 884:16 887:17 889:17,21,23 891:22 893:1,8, 11,21 894:5,12,16 896:2 897:12 898:13 899:4 903:3,17 905:21 906:19 915:7,22 918:2 920:10 932:17 933:9,16 934:1 936:8,9 940:8 943:2 955:17 960:19
BUREAU'S 962:13	calculations 910:24 913:11 1026:20	California 1002:15	
Burns 937:11,13	call 866:16 872:3 931:22 939:21 960:21 976:11 982:8 1013:18,25 1064:19 1076:23	Callaway 877:7 924:12	

968:11 977:17 978:15,18 992:4 993:16 994:7 1003:14 1008:22 1009:2 1015:9 1016:2 1022:5,6, 8,11,12,18,22 1023:3,4 1024:5 1059:19 1062:6 1063:4 1065:24 1068:22 1069:5 1071:17 1077:23 1080:25 1081:3, 10 1082:19 1083:2,10 1094:4 1096:13 1097:7 1098:18,20 1099:3,5,12 1103:14 1104:22 1105:3,6 1107:13 1108:15 cases 884:3 885:4,6 891:15 974:6 975:19 989:16,18 1001:1 1096:10 cash 891:7 892:5 catch 988:2 1011:12 category 1085:13, 14 caused 916:10 caveat 1048:7 CCN 861:2 903:4 935:3 965:23 966:1 1062:6 1071:17 1080:25 Cedric 873:14 ceiling 935:19,21 center 1018:1 centers 1018:15 central 1045:23	CEO 961:17 1059:17 certificate 933:13 934:19 937:3 certification 900:11 cetera 970:9 1018:16 Chairman 868:19, 20 916:19,20,24 927:8 930:8,10,11 932:18 935:15,20, 24 936:13 941:13, 25 946:1,6 958:24 997:25 998:1,3, 13,15,18,20 1001:8 1035:1,2, 3,6,11 1057:22 1064:11 1076:12 1086:5 1093:20, 22,24 1095:6,12 Chairman's 1096:4 challenge 880:3 903:25 challenged 903:23 challenges 1003:13 challenging 1095:24 chance 895:23 1073:13 1075:13 Chandler 954:24 964:24 969:23 Chandler's 955:1 change 870:22,25 871:3 875:17 879:23 880:13,18, 20,23,24 881:20 882:15,25 883:2 913:12 929:9,11 930:18 938:8,14	959:21 1012:1 1038:13 changed 988:17 Changing 1104:5 characteristics 1045:2 characterizing 1071:14 charge 884:23 1084:9,15 check 992:6,11,13 993:1 1025:20 1028:1 checked 858:20 checking 1025:8 checks 1020:8 chief 1015:3 1065:22 1077:21 choice 879:2,6 967:13 1102:20 choose 967:15 1063:1 1070:20 1082:8 chose 1040:11 circle 880:10 970:13 circulated 1109:6 circumstance 966:25 circumstances 885:4 1098:20 citation 990:11 cite 993:11,12,20 1097:6,12,17,21 1098:1,5,6 cited 897:14 991:17 1097:9,11 cites 1049:25 1097:3	cities 1082:23 1083:4,5 1085:8, 23 1087:1 citing 953:9,18 954:7 990:13 citizens 869:11,14 city 883:11 1042:1 1063:22,24 1084:6,8 1085:21 Claire 873:19 900:2 952:3 clarification 865:13 893:15 896:15 941:1 1071:11,15 1098:9 1099:17, 19 1100:2 clarifications 940:14 clarify 881:12 896:9 938:16 1074:12 1109:13 clarifying 864:16 920:8 939:4 999:15 clean 859:1 863:4 888:6,10 945:17 958:7 976:10 977:17,24 979:7 981:18 1019:9 1052:22 1061:14 1074:24 1089:19 1109:8 clear 862:7 863:24 891:25 907:22 917:7 937:10 946:21,23 956:22 982:23 993:15 1029:5 1075:11 1085:12 1094:13 1096:23 1097:16 client 949:10,19
---	---	---	---

clients 987:14 1021:20	1057:17	916:19 920:1,13 925:16 927:9 932:4,21 935:15 936:11,14 938:14 940:18 949:4,11 950:10 962:21 974:6 975:6,8 992:7 993:10 998:10 1001:11 1006:15 1007:5 1042:14 1056:24 1057:5,16,19 1059:21,22 1066:1,2 1077:25 1078:1 1081:9 1086:3 1094:16 1107:8,10,14,16	1094:6,14 1095:6, 14,15,17,21 1096:2,3
climate 1038:13 1040:8	colleague 1033:7	Commission's 906:4,18 920:15 992:3 1062:7	Commissioners 960:2 962:25 975:10 997:25 1034:21,22 1052:16 1076:9, 13,14 1092:3 1095:4
clip 914:18,24	collection 913:7 1041:11	Commissioner 859:9,11 868:21, 22,24 869:2,6 871:15,17 932:22, 23,24 933:1 935:12,25 943:18, 21 962:22 963:5, 6,7,9,13,18,19,20, 25 964:3,4,10,12, 18,19 965:6,11 966:23 968:9 969:16 971:6,19 972:13 973:2,11, 21,24 974:1,3,17 975:4,15 998:4 1001:12,14,15,17 1004:19 1005:13, 15 1006:11,14 1034:23,24,25 1035:3,4,14,15,20 1042:10 1056:25 1057:1,4,11,14, 17,21 1058:5 1064:9 1076:10 1086:4 1092:4,5, 6,8 1093:16,20	committed 972:23 1109:3
clipping 915:15	colloquially 1039:9	commonly 983:12	communities 974:22
clock 909:12	Colorado 1045:12	community 970:1 974:11	companies 906:8 1005:2
close 935:16 1022:13 1028:2,3 1082:19	Columbia 1059:11 1065:16 1077:15	companion 1041:4	company 864:18 865:2 921:1 922:21 928:8 929:21 930:16 933:7 934:7 936:5 941:9 942:24 964:24 965:3,9,22 966:15 967:6,13 969:17,23 970:11, 19 971:3,7,14,23 972:1,19 1004:25 1021:8
closed 882:4	combination 876:17	company's 865:7 917:5 918:11	comparable 923:8 991:7
closely 884:9 981:25	combined 992:19	compare 902:24 904:18 992:9 1004:24	compared 902:12 920:7 923:10
closer 988:9	combining 1020:17		
closure 885:18	comfortable 860:1 863:16 948:12,17 1102:22		
cloudy 913:2	commenced 948:14		
Club 858:21 862:25 923:24 945:13 981:5 1013:15 1054:4 1061:8,10 1074:20 1089:17	commencing 948:20		
Club's 958:25 1013:11,12 1016:6	comment 1025:1 1042:25		
Cluster 886:23	comments 894:6 1045:21		
co-ops 1037:7	commerce 934:8		
coal 924:2	commercial 901:20 1018:19		
coat 1052:11	commercially 893:3		
Code 869:16	Commission 857:4 859:8 860:20,25 861:2, 15,25 862:3 865:6 867:14 868:19 871:18,19 873:1, 16 881:1,6 888:7 889:16 895:9,18 897:3,10 901:11, 13 903:3,12,24		
coded 879:14 904:14 939:18,20, 22			
coincidence 984:17			
cold 913:1,2 1047:20			
Coleman 973:25 974:1,3 975:4			

967:9 993:5 1001:4	completes 866:13 932:19 1013:2 1109:25	1001:20 1092:14	confirmed 1016:22
comparing 920:17 994:3,11	completion 877:11 887:8 935:7 974:12 975:20 1005:24 1021:4,6	concessions 971:10	confirms 1020:9
comparison 973:4 991:11 997:13	complex 942:4 1023:24	conclude 915:8 1031:6,7	confusing 1106:21 1108:10 1109:20
compelling 1002:10	complicated 1023:5,15 1045:3 1095:24	concluded 871:25 1062:6	confusion 861:19 953:11 979:9
compensate 937:15	complications 929:4 1086:21	concludes 957:20 958:1 973:23 976:6 1054:7 1064:16 1087:12	congestion 915:20,22 916:4, 7,9,12 980:17,18 989:16 991:19 996:7 997:5,9 1011:10,15,17,20 1016:21 1017:20, 24 1018:1,3,10, 23,24,25 1020:11 1027:7 1031:2,4, 8,24 1032:3 1035:21,24 1036:3 1043:16 1051:24 1092:11, 20
compensation 965:15,16 966:6, 22 967:12,15 972:24 973:8 1005:1	component 905:18	conclusion 878:20 953:23 1071:17 1080:25	conjecture 1022:25
competitive 1002:12	computer 1024:1, 5 1026:24 1031:11	conclusions 941:23 956:21	conjunction 995:23
compiled 1067:2	concept 915:19 916:13	condition 862:5 873:17 889:15 931:16 938:10,14	connect 879:5 963:5 1037:6 1043:3,13,15 1044:17 1045:4,8, 12
compiling 1067:12	concern 876:21 877:4 878:11 879:4,5 880:4,11, 17,21 881:1 890:5 928:23 929:10 930:20 931:17,20 932:1,2,7 950:19 952:20 953:2,12, 14 965:12 1048:6 1103:5	conditions 880:15 888:5 900:3,21 938:11 948:22 949:5	connected 1045:11
complaint 876:20 880:8 883:18 884:12,16 891:15, 22 893:1 930:8 1105:3,6	concerned 869:19 891:13 918:21 931:4,8,18 1008:13	conduct 904:20 994:10 995:24 996:23	connecting 1024:16,17
complete 886:7 894:24 936:5 938:22 982:18 1108:20	concerns 859:18, 20 862:8,10 880:7 889:20 892:9,11 894:18 934:1 953:24 965:2,8 968:3,8,12 969:23 971:8 974:7 997:7	conducted 997:16	connection 860:12 989:8 1049:13
completed 878:12 886:17 887:9,25 889:9 890:10 891:8 892:5,19 934:20,21,22,24 935:1 938:19,25 939:2 946:11,15 948:2 1003:17		confidence 973:1	connections 1044:5
completely 1041:25		confidential 911:4 1060:13 1073:25 1074:1	connector 861:8
completeness 1102:21 1104:19		confidential- competitive 1060:14,18 1078:18,20	
		configuration 875:11	
		confirm 913:25 938:18 957:13 993:10 1010:7	

870:22 965:5,10 966:7,21 967:14 971:25 974:10	861:9,10,14,22,24 864:24 865:1,5 905:4 928:3,5 936:3 944:15,18 946:20,22 947:1, 4,5 948:5,13,20 949:3 968:9	contract 897:7 903:6 904:17 917:13 972:11,16 989:4 1010:1 1049:15 1052:6 1062:20 1080:16 1081:16,20 1086:16,20	converse 880:2 conversely 949:20 conversion 1044:19 1045:5, 17 convert 1044:24, 25 converter 861:8 875:16 876:2,15 881:5 889:25 890:1,3,7 897:6 919:4 929:13 933:23 934:17,18 935:2 938:4 944:6,19,23 1084:14 conveys 1050:17 cook 1015:4 cool 929:2 Cooperative 1089:17 coordinate 1104:9 copied 865:6 copies 887:23,25 1108:22 copy 877:24,25 878:6,7,9 882:2 886:1,3 887:16,20 894:22 905:20 909:1,10 910:8 913:24 914:9 961:25 992:2,22 1015:14 1046:12 1101:22 1109:8 corner 923:13,17, 18 corporate 901:17 967:23 corporation 927:14
connects 1020:10 1037:2 1039:13 1043:1,25 conservative 1029:7 considerable 1021:23 consideration 947:11 considered 912:22 916:11 969:1 1030:25 1091:13 considers 880:20 consist 943:25 consistent 860:22 887:11 905:7 931:9 1040:17 consists 1067:1 constraints 916:10 934:2 construct 899:20 947:8,18,20,25 954:20 966:1 constructed 901:6,8 905:8 918:7 919:3 920:16 927:13,21 928:7 934:16 947:12 948:9,12 951:22 1007:21 1020:20,23 1021:1 1053:16 1093:4 constructing 946:24 948:9,18 949:1,15 construction	consultant 1015:3 consultants 1067:7 Consulting 902:18 911:2 914:3 985:20 consumers 1000:2 1018:14 consumption 926:13 contacting 1106:19 contained 968:5 978:10 1096:18 contend 973:20 contents 886:5 contest 878:20 883:4,23 891:10 892:2 956:20 context 878:3 contextual 865:3 continue 909:24 933:8 935:16 967:7 968:15 971:25 972:6 973:19 1004:1 continued 967:5 1004:2 continues 891:2 1104:7,10 Continuing 924:17 925:14 continuity 870:18	contracted 1000:11 1002:20 1070:19 contracting 988:18 1051:22 contracts 903:5 1000:16,19 1001:21 1002:1, 22 1009:10,22 1071:21 1080:20, 24 1081:18,22 1083:20 contrast 926:18 940:3 952:23 contribute 857:5 867:16 1080:5 contributions 867:23 control 915:4 conundrums 1101:12 convenience 887:18 934:19 convenient 903:14 conventional 992:18 conversation 917:5 922:6 974:4 conversational 922:7 conversations 921:10 1075:17	

correct 857:18 868:5 874:7 886:25 888:16 897:1,15,17,18 898:7,8,11,14,17, 18 899:13 903:9 904:7 906:14 912:9 913:8,9 914:16 916:1,5 921:6 922:13 928:17 938:23 942:11,12 943:25 944:11,25 945:9 946:12,17 949:24 950:16,18 952:19, 22 957:15 958:2 975:1 979:13 981:20,24 982:20 983:5 985:18 986:20,21 987:21, 22 988:1 990:4,25 991:2,8 993:2 994:22,23 995:21, 22 999:20 1008:24,25 1012:5 1015:14, 24 1019:4 1020:24 1022:2,3 1024:2,3,23 1025:2,11 1026:6, 10 1027:9,10,19 1031:24 1032:3,7, 12,13 1033:21,24 1034:2 1039:18 1054:15,16 1055:24 1060:15 1062:13,14,21 1063:2,3,14 1066:8 1067:3,4 1070:21 1071:9, 15 1075:14 1080:19,22 1081:12,14,17,21 1082:2,3,10,17,18 1083:18,19 1088:23 1090:14 1096:24	corrected 1108:22 correcting 990:16 corrections 857:12 867:22 873:9,12,21,24 978:2 1015:16 1055:17 1108:21, 25 1109:14 correctly 889:13 897:8 900:6 907:11 941:24 956:18 983:4 correlation 983:3 984:8 correlations 983:17 984:17 correspond 1043:8 corridor 1050:12, 16 corridors 970:9 1048:10 cost 876:6 878:23 880:3 902:10,25 918:4 925:5 928:8 938:20,25 942:17, 24 956:16 957:10 967:9 980:3,8 991:14,22,24 992:8,17 993:4,5, 6,7,16 994:2,3,4, 8,10,11 995:18, 24,25 996:23 997:2 999:24 1000:1 1007:25 1008:21,23 1009:7 1010:8,17, 18,20,21,22 1011:4,9,14,24,25 1012:7,14,18,20 1018:5,6,12,16, 23,24 1019:3 1024:1 1026:8,13,	14,19,20,23 1027:17 1028:22 1030:21,25 1031:2,9,10,14,16 1034:2 1036:18 1042:9 1049:17 1051:13,17 1063:20,21 1084:4,5,12 cost-benefit 1031:5 1032:15 1033:19 costs 859:19,25 860:3,6,7,8,15 863:17,25 864:6, 8,12 865:23,24,25 866:2,4,7 878:16 883:23 884:5,11, 14 897:8 925:3 936:23 937:6,16 938:19,23 939:1,2 973:16 980:6,8,17 996:2,25 997:4,10 1007:16 1010:19 1011:2 1017:24 1018:22 1020:11, 15 1026:4,11 1027:18 1028:4,5, 6,8,10,11,15,16, 24 1029:10,14,15, 16,19 1030:4,5,7, 9,16,17,20 1041:14,15 1104:6 counsel 858:15 862:20 905:2 918:11 933:11 940:24 985:7 1000:25 1017:17 1019:13,22 1053:1 1054:23 1061:18 1075:3 1089:23 1099:24 counties 974:12 counting 924:20	country 955:25 983:20 1004:9 1044:1 County 875:13,19, 25 876:7 877:8 couple 859:14 863:9 868:24 876:11 936:15 939:4 943:13,19 950:17 962:23 963:21 964:2 968:23 1001:13 1017:9 1034:23 1086:21 1090:3 1091:21 1094:25 1098:19 court 856:12 872:12 885:12 961:3 962:1 976:25 1005:14 1011:11 1058:25 1065:3 1095:18 1098:23 1106:10 courtesy 960:11 courts 885:10 cover 891:7 897:7 936:22 1068:6 covered 877:2 892:23 1017:17 covers 885:24 create 953:24 created 1017:24 creates 1104:2 creation 974:5,9, 13,20 credibly 992:16 credit 915:4 credits 908:18 915:3 1003:25 Creek 1003:19
---	---	---	--

crews 947:7	977:23 978:5,10, 18,23 982:9 998:14,15,17	1085:13 1093:9 1102:13 1103:24	1041:8,9,13,20,21 1045:6 1069:14 1094:1 1100:23 1101:11
criteria 881:9 934:6 937:2 950:3	crossed 952:13	cut 907:19 908:16 912:2 917:22 988:10 996:4 1005:14 1104:7	day-to-day 969:2
critical 867:15 869:22,25 1036:25 1038:15 1049:9 1099:2,4	CROSSEXAMINATION IONBY 1021:18	cycle 992:20 1022:10	days 911:23 1106:12 1108:3
critically 1012:21	CSR 860:23	cycles 924:13	DC 1044:22 1045:5,9,14,17
criticisms 902:21	Cunigan's 873:14		deadline 1106:24
cross 943:11 959:3 960:3 962:5,16 997:19 1072:8	current 878:14,21 889:23 898:24 899:10 903:18 929:8 931:2,14 935:9 936:9 939:2 968:13 1040:8 1044:14,24,25 1045:1	D	deal 974:20 975:17 1005:7 1092:15
cross-examination 858:3,5 862:14 863:12 868:15,17 871:19 874:18,19, 21 875:1 895:1,21 910:4 940:16,17 941:2 943:16 945:23 954:13,16 958:23 959:6 962:19 975:9 979:17,18,24 981:14 985:13 987:11 1006:18 1007:4,8 1008:5 1016:9,11,17 1017:11 1019:19 1052:15 1053:5 1056:23 1061:4,5 1062:4 1069:22 1070:12 1072:16 1074:15,17 1075:9 1079:18, 20 1080:2,14 1085:3 1089:9,10 1090:7 1104:21	curtained 1029:6	d/b/a 1059:21 1066:1 1077:25	dealership 883:9
cross-examine 1096:16	curtailing 916:13 980:18 984:23 985:1 986:11,14,17 997:5 1027:8,17, 18 1028:4,6,8,11, 16,23,24 1029:10, 14,16 1030:4,7, 16,18,20	dad 969:4	dealing 921:8,12 938:3 969:5 1071:25 1072:18 1092:15
cross-references 1099:16	curves 907:6,20 908:13	daily 968:14	deals 999:9 1038:24
cross-surrebuttal	customary 864:12	Dakotas 995:7	debate 927:1
	customer 864:13 941:18 1000:22 1085:7,9,20,22	Dale 1033:7	decade 967:11 1003:17
	customer's 1104:1	data 888:9 899:7 907:17 908:23 910:16,22 911:3, 15,22,25 917:17 939:8,16 990:7 1005:24 1018:15 1068:21 1069:5,8 1100:20	decarbonization 901:18
	customers 859:22 860:2 904:11 906:6,14 924:24, 25 942:6 988:6 1009:21,25 1010:3 1011:22 1036:13,19	datasets 1041:5	December 891:1
		date 891:5 897:16 898:16 939:2 1003:21 1107:10	decides 927:10
		David 898:10 992:15	decision 871:5 885:9 893:4 895:12 967:23 1096:1 1107:9,10, 11
		day 856:4 881:21 893:18 907:7,9, 14,20,22,23 908:6,7,9,10,11, 13 911:14,19,23 912:5,15,20,21,23 913:2 917:18 963:16 983:19 1039:1,8,9,23 1040:12,14,22,25	decisions 885:11 1001:3
			deck 1037:22
			declassify 1106:18
			decommissioning 931:24

decrease 880:11 881:7,8 882:12	995:17 997:8,13 1007:25 1010:24 1017:25 1040:1 1090:19,21	depends 943:7 947:7 958:11 1009:25 1023:6 1039:24	developing 1009:7 1075:18
deep 1092:22		depresses 1000:1	development 1003:11 1006:8 1090:17 1099:11 1100:13,15
defer 1071:22 1102:19	delivering 986:9 987:19 1093:9	depriving 895:9	difference 889:22 903:20 940:5 943:1 980:11 991:14 998:10,21
deferred 1084:1	delivery 938:4 945:8 946:11,16, 19 947:13 987:20 989:15,17 1063:23 1084:7, 13	derive 1010:4	differences 1010:23
define 880:13 918:25 958:11 973:12 1035:7	delved 1005:6	derived 931:6 1051:16	differential 899:16 904:1 920:23 939:6 1029:6,10
defined 885:12 929:11 935:9	demand 898:22 899:10 901:16 916:7,9 918:18 945:2,5 999:6 1003:23 1004:4,6 1040:17	deserves 1095:19	differentials 1043:18
definite 927:24 932:6	demonstrated 901:17 1102:11	design 876:22 955:8	differently 1044:15,16
definition 869:17 881:20 913:9 986:23 1007:12	denied 1096:17	designated 1050:19	difficult 966:24 971:19 1042:8 1095:24
Definitive 886:24	denies 894:25	designed 875:16 944:12 1103:23	difficulties 1040:13
definitively 929:23	denominator 913:12,15	desire 906:6	Dippell 856:2,11, 15 857:23 858:4, 8,10,13,15,17,20, 24 859:1,3,5,7,11, 13,16 862:12,16, 18,20,22,25 863:2,4,6,8 865:15,20 866:12, 16,20,25 868:10, 16,22 869:1 871:17,24 872:3, 7,11,15 874:12,19 885:14,20 888:16 894:2,6 895:4,13 896:5,18 909:6, 11,17,22 916:18 932:20,24 935:14 936:14,18 940:13, 20,22,24 943:11
delay 946:22 947:13 957:25 1003:13	Denver 1015:7	detail 1007:22 1050:1	
delayed 946:10, 12,14,17 959:19	deny 896:10 919:10 1105:11	detailed 1008:1 1027:2	
delaying 949:20	Department 857:3 1016:22 1024:8, 22 1042:23	details 895:6 1050:9	
delays 954:19 997:4,11 1104:5	depend 1020:22	determination 1026:23	
deliver 980:22 989:12 1009:10 1012:22 1043:17 1090:12 1092:19	dependable 999:5 1019:2	determine 939:5 1022:23 1031:13	
deliverability 991:20	dependent 897:5 928:4 939:14 946:19 1073:3,5	determined 860:16 903:25 988:20	
deliverable 995:19 997:2 1051:23	depending 912:14 924:11 952:7 967:19 1024:16 1038:4 1072:25	determines 885:8	
delivered 915:24 935:8 944:7 949:22 980:2 988:19,24,25 989:11,19 992:16 993:5 994:11		detriment 919:14, 23 949:23	
		develop 918:9	
		developed 879:19 1093:4	
		developers 982:1 983:7,8 985:3 1005:20	

945:13,15,17,19
 954:12 956:25
 957:19,24 958:6,
 13,25 959:5,12,
 15,24 960:9,13,
 16,23 961:2,6
 962:2,6,10,15,18
 963:4,7,20 964:3,
 9,11 973:24 975:6
 976:5,9,13,16,24
 977:3 978:25
 979:5,9,16,20
 981:1,5,7,9 985:6,
 9 987:6,23 988:2,
 8,12,14 990:10,
 15,19 993:17
 996:3,8,12,16
 997:19,22,24
 1001:10,14
 1004:12,18
 1005:13 1006:14,
 21,24 1007:1,3
 1008:5,9,11
 1011:11 1013:1,6,
 10,16,19 1014:6,
 11,15 1016:3,10,
 14 1017:7 1019:6,
 9,11,13,15
 1021:13 1028:17
 1029:20 1030:1,8,
 12 1034:14,17,19
 1035:2,14
 1042:13,19
 1052:8,12,14,18,
 20,22,24 1053:1,
 3,22,24 1054:1,3,
 6,10,12,17,19
 1055:1,6,13
 1056:5,9,13,16,22
 1057:15,19,23
 1058:2,4,8,15,19,
 24 1059:2
 1060:12,19,22
 1061:5,8,12,14,
 16,18,20,22
 1062:15 1064:4,7,
 9,12,15,19,23

1065:2,6 1066:17,
 23 1068:2
 1069:17,20
 1070:1,6,10
 1071:4,10 1072:1,
 9,14,20,23
 1073:3,7,12,19,23
 1074:10,12,20,22,
 24 1075:1,3,5,24
 1076:3,6,8,13,17,
 20,22 1077:1,6
 1078:17,22
 1079:2,9,12,19,23
 1080:10 1081:5
 1084:25 1085:25
 1086:2,6,10
 1087:7,10,14,18,
 23 1089:4,10,13,
 16,19,21,23,25
 1090:2,4 1091:22,
 25 1092:2,5
 1093:19,22
 1094:14,20,24
 1095:12,16,20
 1096:2,6,25
 1097:5,8,20
 1098:10 1099:20
 1100:1,6,9,12,21
 1101:5,10,24
 1102:7,17,23
 1103:2,6,18
 1104:23 1105:7,
 25 1106:3 1107:4,
 6,21 1108:7,9,24
 1109:10,18,23
DIRE 1066:24
direct 856:24
 867:7 872:23
 897:23 899:11,12
 901:9 902:5,17
 961:12 977:10
 982:8 1014:21
 1044:25 1054:18
 1059:7 1065:12
 1067:18 1077:11
 1088:4 1101:15,

25 1102:8
 1103:11,21
directed 924:22
 1029:1
direction 970:24
directly 869:19
 891:17,21 931:6,
 13 972:20 980:22
 989:7 1018:20,22
 1020:7 1043:9
 1067:11 1072:18
 1105:10
Director 1088:11
disagree 864:2
 917:6 949:9
disasters 870:5
disbursed 984:16
disclose 1005:4
disclosed 988:18
discretion 967:19
discuss 1032:1
discussed 918:12
 931:25 945:10
 955:4 985:25
 1028:9 1049:6
 1103:10
discusses 863:23
 900:2 1038:25
discussing 946:6
 1045:23
discussion 877:9
 881:17 882:11
 901:19 926:5
 933:12 946:3
 954:22 955:1
discussions
 879:12 901:21
 918:11 967:1
displace 950:20
 952:21 953:3,12

954:1
displacement
 952:12
dispute 884:15
distance 984:9
distinction 876:13
 882:17
distinguish
 1104:15
distinguishing
 1098:19
diversifying
 968:21
diversity 984:4,12,
 15,19,22 986:13
divided 987:1
 999:3 1044:13
Division 857:3
divisor 913:16
docket 884:16
 894:4 895:7,10
 939:16
dockets 923:25
document 884:15
 891:19 893:16
 894:2,10,11,19,
 23,24 991:5,9
 993:8,9 1024:25
 1073:1
documents
 893:20 894:24
 898:21 908:25
 978:20
Dodge 1042:1
doe 1020:9
 1024:14 1025:3
 1032:18 1043:3,6,
 24 1044:2,18
 1045:20 1046:1
 1048:8,12,24

1049:20	due 890:10 892:18 894:14,18 927:12 980:6,16 983:3 1009:8 1104:18 1106:8	easy 966:17	efficient 923:9
Dogwood 941:4		economic 879:11 881:9 885:6 897:4 900:25 901:22 902:8,9,14 903:1 904:2 906:1 915:10 918:5 920:12 924:19 925:6,12,21,23 926:4,20 931:7 936:7 940:4,6 948:24 951:10 957:8 1004:2 1007:12 1008:14 1009:2 1010:11, 14 1011:8 1017:1, 25 1018:4 1023:25 1035:7 1036:16 1040:11 1043:17 1090:16 1108:14	effort 1047:11 1091:12
dollar 864:9 1020:13 1032:10	duly 856:22 867:5 872:21 961:10 977:8 1014:19 1055:10 1059:5 1065:10 1077:9 1088:2		efforts 967:11
domestic 926:12, 16		<hr/> E <hr/>	EFIS 978:17,19
double 956:13		EA-2016 1103:14	EL22-83000 893:11
doubt 878:19 991:10 1098:5		EA-2016-0358 875:8,10 877:1 898:14 1008:22 1101:17,25	EL2283-000 880:9
downloading 939:16		EA-2023-0017 856:5	elaborate 964:23
DPP 886:24 1103:23,24 1104:2,4		eager 949:11	electric 869:23 949:10 1018:7 1050:12 1059:21 1066:1 1077:21, 25 1078:1
DPP3 886:23		earlier 878:23 887:14 894:9 915:10 938:22 939:18 965:21 1032:18,23 1052:12 1079:8 1090:4 1092:10 1108:21	electrically 1045:7
draft 887:1 1024:25 1025:5 1032:19 1042:24 1048:24		early 1033:8 1047:25 1071:18 1107:11	electricity 981:22 999:6 1017:22 1018:20 1019:3 1041:17 1044:20 1090:12,19 1094:2
dramatic 1033:13		easement 975:22	electronic 878:8 1056:10
draw 882:17 1017:22 1037:9, 10		easements 967:8 968:10	eliminate 910:3 1028:6,10 1029:15 1030:6 1031:2
drawings 860:25 861:3,4,7,10,12, 15,21,23 862:1 864:19,23 865:3, 6,8,10		easier 908:24 914:9 927:1	eliminating 965:4, 9 1027:8 1029:19
dreams 1001:24		east 956:4 1044:16	Ellinger 858:18 862:23 894:21 943:13,17 945:11 981:3 1017:9,12, 14 1019:5 1052:19 1061:7 1072:22,25 1073:5 1074:18 1089:14
drew 1043:6		eastern 1045:24	Elliott 1012:13
drill 947:22			emergency 884:3 1039:21
drive 1000:6			
driving 952:24 999:18			
drop 949:16 967:8 984:8 1036:10 1037:7 1039:9			
drop-off 1036:15			

employ 1026:24	1001:23 1002:12	entirety 947:12	Ethan 1061:9
employed 857:1,2	1008:21,24	1075:12	Eubanks 900:2,8
867:12 872:25	1009:4,20 1010:8,	entity 894:11	928:15 931:16
977:13 1015:1	20,21,22 1011:4,	972:1	938:9 952:3
1088:10,11	9,14,17,21,24,25	environmental	998:10
employer 961:14	1012:7,14,16,19,	873:18 955:13	Eubanks' 873:20
977:12 1059:13	20 1016:23	equal 907:7	938:1
1065:18 1077:17	1024:8,22	926:12 950:23	evaluate 871:3
employment	1036:15,16,18	951:16,18,19	876:5 952:16
927:11	1041:2 1042:23	952:11	1031:16
enable 866:3	1043:17 1047:9,	equation 926:12	evaluated 1009:24
900:4 957:13	17 1051:22	924:8,14 931:18	1038:22 1048:3
1044:6	1063:21 1067:2,	equipment 870:12	evaluating 954:5
encourage 966:15	16 1068:10	924:8,14 931:18	1010:19 1041:7
967:5,6,25 969:17	1082:14 1084:5	equivalent 939:11	event 1041:14
encouraging	1092:17 1093:2	errata 1105:10	1047:20
1098:10	1094:2	1109:5	events 870:6
end 870:10 910:4	engagement	error 911:6	1012:17,18
911:25 944:15	1004:11,15	escape 932:3	1040:5 1047:23
958:5 1006:16	1005:4	ESIG 1041:2	eventually 905:12,
1044:25 1045:6	engineer 857:2	espoused 999:16	17 970:14
1104:8 1109:20	867:15 891:3	essentially 884:2	Evergy 932:10,11,
endless 926:7	engineering 857:2	885:6 890:1	12 1001:2
ends 870:10	955:8	902:10 954:9	evidence 858:1
energized 861:1	enhance 870:16	987:20 999:24	868:13 874:16
energy 898:4,23	enhancement	1024:2 1026:6	893:17 894:1
901:17 902:22	933:17	1031:16 1070:21	895:16,18 896:1,4
906:9,15 908:19	ensure 937:2	1071:14 1082:7	899:2 900:19
910:14,20 912:8,	984:20 1047:16	1090:14	902:2,8 903:24
11 913:6,14	ensuring 965:12	establish 892:17	904:8 920:19
921:15 922:1,8,	enter 893:17 894:1	980:10	932:14 954:6,19
11,23 923:1,3	1104:2	established 890:9	957:13 962:14
941:5,14 942:2	entered 894:19	971:14 1001:21	974:14 979:8
943:8 945:3,6,7	957:6 973:13	estimate 938:21	1016:7 1056:20
946:11,17,19	1001:2	939:1 1010:14	1061:1 1067:15
949:12,17 950:11,	entering 1103:24	1011:7	1069:3 1073:21
14 951:3,4,8,11	entire 876:15	estimated 925:2	1079:15 1087:13
956:16 981:17,22	946:22,25 947:4	estimates 1034:1	1089:3,7 1098:2
986:25 992:9,17,	954:21 958:9	estimation 907:4	1099:1,4
18,19,20 993:6,7	1007:20 1020:19,	911:13	evidentiary
994:3 995:24	23,25 1021:5	evolution 860:13	1101:12
999:1,2,4,21	1083:6		
1000:1,14,16,20			

evolves 968:15	execute 893:2	exists 936:8 941:6 1050:9	expert 899:1 1068:17,19,22 1069:4,5
exact 895:6 1009:9	executed 891:1,11 892:3	expand 1006:9	expertise 928:15 951:15 1020:1
EXAMINATION 856:24 865:18 867:7 872:23 957:1 961:12 975:13 977:10 1008:16 1014:21 1059:7 1065:12 1066:24 1077:11 1086:11 1088:4	Executive 1045:20,25 1046:7,23 1088:11	expanded 883:1 1003:24	experts 1048:14 1068:25 1069:6, 13
examined 856:22 867:5 872:21 889:23 900:20 961:10 977:8 1014:19 1055:10 1059:5 1065:10 1077:9 1088:2	exercise 913:17	expansion 1002:6 1003:15 1004:16 1051:4	explain 922:4 939:20 940:5 941:22 993:21,22 998:21 1016:19 1022:4 1043:4 1044:11 1086:18 1104:20
exceed 983:10,14 1006:9	exhibit 857:6,10, 22,24,25 867:17, 20 868:9,11,12 873:4,7 887:21 888:1,2,4,5,8,19, 23 889:2,3,4 894:2,19 896:8,10 909:15 931:22 960:18 961:23,25 962:9,11,13 978:22,24 979:15 1015:10 1016:2,4, 6 1055:16 1056:6, 17,20 1060:1,11, 12,23 1061:1 1066:6,16,18 1068:7 1073:20, 21,24 1078:5,16, 23 1079:14,15 1088:14 1089:3,5, 6 1096:11 1100:19 1108:6, 17 1109:9	expansions 1002:17	explained 980:5 983:17 996:1,6,24 1010:9 1011:17 1032:9
exceeding 984:25 1028:15	exhibits 874:11, 13,15 979:6,7 1107:25 1108:22 1109:17,24	expect 884:10 913:7 984:23 986:14 1021:4 1023:19 1032:23 1048:15 1062:25 1082:8	explanation 912:3 922:4 939:25
Excel 939:16,21	exist 1053:19	expectation 910:14 1039:1,8, 15 1051:15	explored 1001:5
excellent 974:17	existence 869:9, 12 871:10	expectations 1006:10	exponential 956:15
Excerpts 894:24	existing 933:7,12 934:18 939:9 966:9 970:8 972:16 1022:15 1082:23	expected 887:9 910:15 913:14 1006:7 1022:14 1085:7,19	exponentially 1093:10
exchange 970:2		expecting 1010:6 1051:24	exports 926:14
excited 1041:16		expediency 1068:5	exposed 1018:19, 21
excuse 927:3 969:15 994:21 1033:14 1084:21 1105:25 1106:23		expenditures 926:13 942:17,25	Express 875:11 883:22 888:6,8,9, 10 891:23 892:25 898:10,23 899:3,4 902:2 903:4 910:16,19 914:20 980:21 983:1 1004:6 1012:12, 21 1020:8 1023:12,13 1032:25 1033:11 1036:17 1037:3 1039:25 1043:1, 13,22 1045:10,15
excused 866:15 871:25 872:2 957:21,23 976:6,8 1013:3,5 1054:8, 11 1058:2,7 1064:16,18 1076:20,21 1087:8,9 1094:21, 23		expense 973:17	
		experience 884:23 921:8,12 974:19 983:6 1002:5,11, 15 1006:2 1018:23 1021:24	
		experienced 1004:8	
		experiments 1042:4	

1049:11,19	25 1097:14	903:10 906:22	1047:19
1053:15 1091:12	1100:17 1101:20	915:19 941:4	federal 869:16
1100:15 1102:12	1104:17	982:7 1001:5,7	1049:25 1050:7
Express's 1020:7	factor 879:10	1008:23 1010:8,	1106:13
1099:17	907:5,16 908:21	10 1019:25	Federation 961:16
expressed 880:7	910:13,24 911:19	1036:8 1038:19	feedback 969:25
948:23 952:20	913:5,6,13 914:2	1050:6,11	feeding 914:13
968:4 1063:11	917:6,10 956:6	family 968:25	feel 959:9 973:14,
expressly 1039:23	980:7 982:4,12	969:2	15 1076:22
extend 944:10	985:23 986:7,24,	farm 917:17	1095:5
1045:16 1106:24	25 990:3,8 991:1,	952:12 961:16	feeling 958:16
1107:6,15	7,16,18 998:11,	968:16,20 969:2,4	feet 970:24
extensive 1007:1	22,24 999:4,11,12	971:22 973:3	fell 1033:2
1109:14	1026:8 1028:5,9	974:13	FERC 880:8
extent 889:19,22	1029:14 1030:5,	farmers 968:12	883:18 884:13,16
933:20 953:6	17 1037:17	970:20	885:10 891:15
1012:10 1037:24	factored 917:10	farmland 952:12	895:23 932:3
1049:17	924:24 1030:9	farms 968:19	1105:3
extra 908:19	factoring 1026:11	fashion 871:2	fetch 918:19
1031:9 1038:10	factors 902:9	974:23	field 1001:24
1041:18 1091:21	903:13 915:9	fast 1048:22,23	1068:25 1069:7,
1107:8	916:11 926:15,24	favor 920:11 953:5	14
extreme 870:5	952:25 986:1	favorably 966:12	fight 972:8 973:19
1038:12 1040:5	991:12,24	feasibility 879:11	figure 908:1
1047:22	facts 1068:21	881:9 885:7 897:4	966:18 986:16
extremely 1003:22	1069:5,8	901:1,9,22 902:3,	1094:10
1020:14 1033:1	faded 1004:13	8,9,14 903:1	figuring 1052:2
	failed 972:7	904:2 906:1	file 893:9 929:17
	1106:6	915:10 918:5,10	961:23 1054:14,
F	fair 966:7,12	920:12 924:19	19 1055:14
	967:11 973:20	925:6,13 926:2	1100:18 1101:6,7
facilitate 945:8	1004:7 1021:23	931:7 936:7,9	filed 900:22 930:8
facilities 883:3	1026:22 1052:13	940:4,6 948:24	1057:5 1059:19
887:9 891:3	1083:6 1095:22	957:9 989:14	1065:24 1077:23
956:16 991:14	1098:8 1099:6	1007:13 1008:14	1105:4 1106:21
1018:15	fairly 884:20	1009:2 1010:12,	filing 895:7,22
facility 887:13	924:13 969:22	14 1011:8 1035:7	902:3 1107:2
facing 1038:20	1018:13 1029:7	feasible 904:6	1108:22 1109:3
fact 863:23 865:10	1087:3,4	906:5 919:17	final 864:24,25
894:22 904:16	fairness 965:17	936:11,22 950:1	876:22 878:17
974:8 1026:18	fall 1032:25	997:12	
1028:20 1040:1	familiar 885:23	February 1042:25	
1074:1 1086:14,			

880:5 886:20 887:4 890:5 892:24 1004:21 1025:3,17 1075:18 1093:1 finalize 955:8 finalized 861:13, 21 877:14 957:4,5 1048:15 1081:18 1083:23 finalizes 865:3 finally 1067:24 financial 906:10 948:21,22 992:8 1005:24 financially 967:20 find 885:2 903:15 939:8 970:14 1046:19 finding 898:6 906:4 957:8 1023:8 Findings 920:15 fine 892:16 962:2 990:18 993:11,12 1038:19 1040:22 1056:9 1107:21 finish 1007:4 finished 876:12 fire 1042:1 firm 1067:2 1080:17 1086:20 1095:8 fit 1085:14 five-minute 1073:9 fixed 980:8 flexibility 1049:5 flexible 966:17	flip 982:14 floor 967:3 flow 865:21 866:3, 8 870:3 927:13 934:5 1009:15,25 1037:16 flowing 926:2 932:10 1038:3 flows 940:7 989:5 fluctuate 1029:9 fluctuates 923:8 focus 1073:14 focused 1051:18 focusing 1003:4 folder 882:5 folks 973:19 1048:16 follow 891:20 908:25 924:12 935:25 936:15 945:25 969:3 971:23 1046:11 1063:9 1102:21 follow-up 972:21 footnote 897:14 898:12 928:18,25 1050:1,6 footprint 980:16 1012:2 1018:9 1039:12 footprints 1036:7 1090:24 for-profit 972:1 force 889:15 1041:2 forced 965:20 forego 915:2 973:17	foreign 869:19,21 forgot 960:17 1072:9 form 967:12 1024:25 1032:19 1048:16 1056:10 1066:21 forming 1068:25 1069:8 formula 939:23 formulate 899:5 Fort 870:19 forward 879:7 919:14 965:13 975:24 990:18 993:23 1002:2 1054:20 1098:13 found 884:20 897:4,10 901:11, 14 903:12 992:7 1006:6 1020:5 1069:12 foundation 893:14 1067:23 frame 949:3 frankly 1100:3 1105:16 free 950:15 1095:5 1098:5 frequency 1045:2 Friday 1101:8 1106:25 1109:11 front 886:2 894:23 908:3 960:5 991:5,9 992:23 998:12 1047:4 1049:7 fruition 1006:1 fuel 923:9,15 999:25	full 876:23 879:19, 23 889:15 1088:6 1104:22 function 933:21 functioning 870:12 fund 931:24 future 888:24 901:24 902:4,12 960:19 1022:15 1049:12 1052:4 1053:17 1104:3 <hr/> G <hr/> G-A-L-L-I 1103:12 G-A-R-R-E-T-T 961:5 G-O-G-G-I-N 977:2 G43 1099:17,21 gallery 885:20 Galli 1103:12,22 1105:1,5 Garrett 960:21 961:4,9,18 gas 923:13,21 924:3 992:20 1029:8,9 gasoline 923:17 gave 888:19 963:15 1010:6 1057:6 1060:2,7 1066:7,12 1078:7, 12 1096:11 GBE 900:3 GDP 926:17 general 943:22 971:13 1007:23 1032:16 1045:21 1048:18 1104:6
---	--	---	--

generalizations 921:5	1053:16 1093:3, 10	1004:12 1006:18 1007:10 1013:2	23 899:3,4 900:22 901:4 902:2,5,11 903:4,23 905:3 906:4,9,13 910:15,19 912:2, 19 913:18,20 914:3,20 916:14 918:14,16,17 919:2 931:9 937:13 941:15 946:9,14 947:8,18 948:1,8,17 949:1 950:20 952:20 953:3,5,12,18 954:1,6,13,20 957:12 969:8 975:22 980:2,21 981:9 982:4,20 983:1,10 985:15 987:15,18 992:15, 16 994:3 995:25 997:8,13 1003:6 1004:5 1009:11 1012:12,21 1016:20 1019:11, 24 1020:7,8 1021:21 1022:18, 21 1023:3,11,13 1024:6,10,12,13, 15 1025:18 1031:23 1032:15, 17,25 1033:11,19, 23 1034:1,6,10,11 1036:2,16,19 1037:2,5,10 1039:25 1043:1, 13,22 1045:10,15 1049:11,19 1052:24 1053:14 1061:16 1062:6, 12 1063:2,7,21,23 1070:19 1071:19 1075:1 1080:16, 18 1082:22 1083:7,17 1084:4, 7 1089:21 1091:12 1092:10
generally 868:17 871:20 884:20 898:3 912:6 915:20,21 921:4, 13,21 922:23,25 924:5,14 929:24 946:2,6 954:5 966:10 970:4 971:7 995:2,21 999:7 1000:7 1027:8 1028:25 1030:25 1031:4 1036:14,24 1040:3 1042:8 1043:11,12 1044:19 1050:13, 14 1051:7	generational 968:19 generator 913:7 917:21 928:10 942:1 956:6 1001:21 generators 913:8 914:16 915:2 923:4 1002:1 gentlemen 883:12 geographic 984:4, 9,12,14,15,19 geography 995:11 GGG 885:24 886:5,7 give 856:8 866:22 872:8 877:23,24 913:23 947:10 959:16,18 960:16, 24 963:20 964:2,7 976:21 990:10 1014:12 1046:17 1055:3 1056:2 1058:21 1059:9 1064:24 1065:14 1069:20 1077:3, 14 1087:20 1097:22 giving 1101:12 goals 901:18 1093:12 Goggin 958:8,10 959:17 960:7,14 976:12,13,17 977:1,7,12 978:14,23 979:22 981:11 985:5,11 987:9,23 988:8 990:6 993:10 996:4,20 997:25 998:4,16 1001:18	good 856:3,18,20 863:10,11 867:1,3 869:2,4 872:17,19 874:23,25 909:13, 16 916:21 943:14, 15 945:21,22 946:9 950:6 954:10 961:8 963:10,11 979:22, 23 980:24 981:10, 13 985:10,12 987:9,10 1008:15 1013:24 1016:15 1019:16 1021:16 1035:16 1039:20 1040:9,15,16 1041:5 1046:21 1057:1,2 1058:9 1060:22 1062:2 1075:6,8 1079:24 1080:1 1087:14 1094:20 1096:1 1107:19 1109:10 goods 922:18 government 926:13,17 governs 1068:16 GR43 1100:25 grab 878:5 gracious 960:6 Grain 859:5 860:20,21 863:8, 24 864:17 869:9 870:25 871:5,10 874:20,22 875:11 876:20 879:2,5,7 881:15 883:5,22 884:1,12 888:6,8, 10,22 889:9,11 891:4,5,15,23 892:2,19,21,25 894:15,16 898:10,	
generate 912:6,8 951:19 1007:15 generated 951:11 999:17,18 generates 912:5 generating 1011:19 generation 906:7 907:6,8,18,19,25 908:15,19 912:1, 4,5,15 913:11,13, 15,22 914:13,19 915:6,23 916:2,13 917:12 918:6,7 923:7 925:19,20, 22 927:12,22 928:3,9,11 941:8, 9 942:10,14,15,20 950:20 952:21 953:4,13 954:2 991:8,13 992:9 994:5 1001:4 1002:22,23 1009:9,22 1017:3 1038:20 1044:6,8 1047:9,24			

1098:14,15 1099:16,24 1100:4,15,16 1101:6,19 1102:3, 11,19 1103:7 1107:6,10	1061:14 1074:24 1089:19	guide 1048:19	24 1084:6,8,14
grandma 969:4	gross 926:12,16 927:16,17 952:23 954:9 1026:5,18	Guidehouse 985:17 1012:11	happen 928:1 937:14 972:7 997:15 1016:23 1022:14 1049:10
grandpa 969:4	Grotzinger 1063:9,18 1064:1 1068:9 1069:11 1071:23 1072:3,4 1076:24 1077:8, 13,22 1079:5,20, 25 1080:12 1081:5 1085:5 1086:3,13 1087:7	guys 1101:12	happened 912:23 927:25 988:11 1002:18
granted 903:3 937:3	Grotzinger's 1068:13 1072:2	<hr/> H <hr/>	happening 967:2 974:16 1022:13
grants 889:16	ground 956:2	H-A-W-K-I-N-S 961:5	happy 1068:18 1094:7 1100:18
great 974:20 1001:8 1008:20 1013:4 1014:17 1015:5 1062:3 1095:22	grounded 1069:16	H104 860:10	hard 879:14 904:14 917:11 920:3 923:20 929:23 933:20 939:18,20,21 968:23 1042:5
greater 1000:8 1033:10 1036:12	grounds 893:24, 25 1067:20 1079:8 1104:18	H105 860:10	harm 947:20 966:5
greatest 983:22	group 975:10 987:14 1041:2 1067:7 1094:17	Haden 858:9 862:17 940:21 960:5,11,15,20,21 961:7,8,13,22 962:4,8,16 975:12,14 976:4 997:21 1008:8 1034:16 1053:25 1064:6 1076:5 1085:2,4,24 1091:24 1096:22 1097:3	hate 873:19 1006:16 1094:15
GREENWALD 858:25 863:3 945:16 981:8 1019:7 1052:21 1061:13 1074:23 1087:16,25 1088:5 1089:2,8 1094:19	grouping 1071:5	HAGEN 1098:8	hats 883:12
grid 859:1 863:4 869:23 870:10,11 871:1 915:25 916:4 945:17 958:7 976:10 977:13,14,17,24 979:7 980:7 981:16 1011:20 1015:2 1016:21 1019:9 1020:2 1027:7 1033:8 1037:13,23 1038:5,16 1039:5 1041:24 1042:6 1047:13 1048:16 1049:20 1052:22	growth 926:23	HAHN 1034:24	Hawkins 958:22, 23 960:3,7,22 961:4,8,9,18 964:15 976:5
	guarantee 883:9 957:5	hammered 927:18	HB 971:23,24
	guaranteed 903:8 906:20	hand 866:21 914:9 922:16 974:18 976:19 1014:9 1058:20 1077:2 1087:19	HC 1108:11
	guard 1041:12	handed 861:10	HC-C 1060:21,24 1079:14
	guess 883:8 917:22 923:22 928:5 967:22 971:6 995:9 1029:13 1031:18 1047:2 1052:1 1054:12 1067:18 1090:9 1097:25 1104:13	hands 1037:22	head 997:17 1007:14 1033:9
	guidance 1097:22	handwriting 928:22	heading 905:25
		handwritten 962:1	hear 863:14 881:20 968:11 970:1 972:6 973:5,13 988:13 1007:10 1008:18 1013:15,16 1017:13 1019:17 1054:17
		handy 1108:5	
		Hang 858:4 996:3 1050:21	
		Hannibal 1063:22,	

heard 869:7 901:4 926:5 939:19 941:23 970:23 972:24 973:2 975:18 976:1 990:23 1001:19	921:4,14 922:14 951:24 952:4,6 956:3,5,6,17 980:3,6,12 1000:7 1010:25 1016:25	Holsman's 935:25 975:15	11
hearing 856:5,9 866:22 872:9 893:18 895:9 929:20 930:4,8 935:21 960:25 963:16 964:21 974:8 976:21 1001:19 1004:13 1057:7 1058:21 1064:25 1068:24 1077:3 1087:21 1094:17 1095:8, 10,22 1101:25 1109:25	highest 922:12 955:25 965:14 983:23 1032:20 1043:2,15,21	home 968:20	horizon 1040:23
hearings 929:16 971:4	highly 896:2 986:17 1003:10 1060:13,14,17 1078:17,20	homework 1108:20	hour 883:10 907:21 910:20 911:17 923:8 980:8 1018:5 1029:4
hearsay 893:13 1067:22	highway 923:9 970:9	honest 930:5	hourly 911:15,22 1018:13
heart 895:8	hindrances 968:17	Honestly 918:2	hours 911:18 912:7,8,25 980:10 984:24 1000:3 1029:5 1095:18
heavily 885:5 1009:3	history 1004:22	Honor 858:7,23 859:4 862:15 863:7 894:8 940:19,21 945:20 954:11 959:10 960:21 961:22 962:17 976:11 978:20 979:19,21 980:25 987:8 997:21 1008:7,8 1012:25 1016:1, 12 1017:5 1021:15 1029:25 1034:13,16 1052:17 1053:23, 25 1060:10,16 1061:3,9,23 1064:6,14,21 1065:8 1066:15, 19 1067:14 1068:4,5,15,18 1069:19 1070:5, 23 1074:2,21 1075:25 1076:5, 16 1077:7 1078:15,24 1079:10,17,22 1080:11 1084:24 1086:8 1087:6,12 1089:12,18 1090:3 1091:24 1100:18 1102:18 1103:5,15,16 1104:25 1105:24 1106:2	housekeeping 1094:25
hedge 970:25	hit 1037:8	hope 950:18 971:7	hub 956:2
height 956:2	hold 959:8	hoping 1106:10,	huge 1042:3
held 1098:23 1102:3,12	holding 1105:22		hurdle 936:4
helpful 1013:17 1093:15	holes 921:1		HVDC 861:7 933:8 1044:5
helping 1038:15	holiday 1106:13 1107:1		<hr/> I <hr/>
helps 984:19	Hollander 858:10		idea 1042:7
hiatus 1073:13	Holsman 859:9,12 868:21,22,24 869:2,6 871:15 932:22,23 933:1 935:12 943:18,21 962:22 963:21,25 964:4,10,12,18 973:21 1001:12, 15,17 1004:19 1005:13,15 1006:11 1034:23, 25 1035:14,15,20 1042:10 1057:21 1076:10 1086:4 1092:4,5,6,8 1093:16 1095:14, 15,17,21		identification 888:17,21
high 911:25 913:1, 3 1002:7 1003:22 1038:7			identified 861:5 864:8 865:8 888:4 977:20 978:17,19 1010:9
higher 898:3 904:20,21 912:1			identify 877:6
			II 886:12 889:5 902:16 905:4 919:8,21 934:20, 22 935:1,4,7,10 944:10,12,14 946:15,25 947:25 948:2,13,20 949:3

1091:2,8,19	1046:25 1047:22	969:9 1047:17	1099:7
Illinois-indiana	improved 1046:9	1088:12 1098:3	industrial 857:3
944:13	improvement	incorporates	901:18 1018:14,
imagine 949:8	933:17	1109:7	19
968:23 1033:3	improvements	incorrectly 924:19	industries 858:17
1040:21	860:4	1097:25	862:22 894:21
immediately	improves 986:4	increase 870:11,	944:24 945:4
1002:8	1036:12	13 881:5 882:12	981:2 1017:8,21
impact 871:12	improving 1019:1	883:21 884:14	1052:18 1061:6
887:2 923:7,14	in-camera	913:15 926:15,16,	1074:17 1089:13
925:21 927:11	1106:16	21 943:3 1018:23	industry 969:8
941:16,17 968:6	inappropriate	1039:23 1040:2	1004:24 1048:17
969:13,19,20	1099:13	increased 913:11	Inergy 988:25
974:25 1000:14	include 862:4	933:22 1046:2	inference 1068:22
1020:1 1047:7	866:2 888:14	1047:21	inferences 1069:1
1052:3 1099:9	894:13 993:16	increases 984:10	Inflation 1003:23
1108:14	1022:18,21	1047:13	information
impacted 938:7	1024:21 1082:23	increasing 980:17	860:22 895:11,17,
impacting	1099:13	986:3 1040:5	19 896:1,3 899:9
1047:20	included 860:8,16	incredibly 912:23	908:12 918:1
impacts 943:5	869:25 875:11	incremental	920:25 927:10
955:7,13 974:22	879:13 925:2	865:23,24 866:2,	932:15 959:16
1009:4,13	938:20 939:1	4,7	964:7 972:14
1019:23,25	979:15 994:24	Independent	974:14 1009:12
1020:3	995:6,25 1011:4	893:10 1047:6	1015:23 1060:13,
impede 968:13	1020:13 1026:15	independently	14,15 1074:9
impediments	1045:22,24	884:18	1078:18 1088:24
980:15	1109:4	Indiana 944:16	1106:22
implement 1003:3	includes 942:10	947:5 956:5 995:9	infrastructure
implication	1022:1 1083:3	1045:16	867:15 869:22,25
1050:19	including 888:15	indicator 1020:14	870:8,9 944:1
import 1039:21	925:9 967:25	indigo 1036:6	968:8 970:6 975:2
1047:19 1053:12	983:20 993:6	1092:22	1019:1 1047:15
important 876:13	1026:19 1046:3	indirectly 1072:18	inherent 984:12
879:10 1037:16	1060:23 1079:14	individual 870:1	Inisherin 1094:3
1044:1	1104:9 1105:9	871:4 1021:3	initial 876:1,14
importing 1038:7	inclusion 1067:23	1067:25 1083:5	902:3 920:11
imports 1037:24	income 968:21	1085:7,9,19	1102:4 1106:7
improve 869:9,10,	incomplete	1099:10	1107:2
13 870:4,16	1099:18 1104:21	individuals 971:3	initiated 884:13
871:11 1039:2	incorporated	1085:14 1098:21	inject 883:24

884:4 929:13 931:13 injected 999:22 1000:3,19 1009:16 injecting 930:21 934:2 injection 879:20, 24 880:14,19,24 881:5 882:11,13, 14,15 884:1 886:22 921:19 injections 881:8 input 900:9 inputs 1010:16 1024:6 inputted 939:22 inquiry 969:22 inside 1035:8 1084:20,21 insistence 947:12 install 984:1 installation 861:22 865:5 installations 870:19 installed 990:4,9 991:3 instance 968:22 969:21 instances 966:13 insufficient 897:7 insurance 1041:19 integrated 942:6,7 1047:13 integration 1041:2 1047:7	intended 941:1,24 983:25 984:20 992:1 1037:14 intent 901:20 intentional 970:25 interacting 1004:25 interactions 1005:10 interconnect 879:2 983:9 interconnected 910:15 913:22 983:1 interconnecting 876:6 890:2,4 937:13 980:15 983:13 interconnection 859:19,25 860:6,7 870:16 875:7,12, 15,25 876:4,18 877:1,13 878:11, 14,15,22 879:8,23 880:3,12 882:24 884:2 886:15 889:5,10 890:6,19 891:1,3,4,11,14, 16 892:1,3,11,14, 20,25 893:2 895:8 914:1 918:14,22 921:13 928:24 929:6 930:13,17 931:14 938:19,20 939:9 957:6 980:17 1002:16 1036:11 1044:6 1046:4 1103:24, 25 1104:3 interconnections 877:7 885:25 1044:7 interest 903:14	919:8 925:12 926:4 933:23 945:6 947:20 948:10 966:18 1004:2 1050:12, 17 1063:11 1086:25 interesting 907:15 interests 968:1 interface 1045:9, 14 internal 869:21 interplay 942:13 interpretation 1039:19 interpreted 1097:24 interregional 1024:14 interrupt 1096:22 interruptions 968:17 interstate 934:8 intervals 951:20 intrusive 970:7 Invenergy 859:23, 24 875:22 899:20 902:24 915:13 925:7,10 926:2 931:6 932:3,12 934:7 937:15 940:7,8,12 965:13 967:22 1099:11 1100:14 1102:3,6 1105:4 Invenergy's 907:4 911:12 934:5 investigate 884:18 investigated 870:24 884:6	investment 883:22 902:11,24 908:18 915:4 926:13 940:8 942:17,24 1007:15,17 investments 915:12 1006:5 1007:24 1008:1 investors 1007:18 invoices 891:7 involve 944:18,19 involved 926:25 1067:12 1075:17 involving 895:8 Iowa 991:8,17,19 994:5 995:8 Iron 906:8 IRP 1051:5,11 irradiance 910:22 Irregardless 915:9 irrigation 970:13 irrigations 970:13 ISO 885:13 issue 875:7 917:16 929:5,9 999:10 1005:6 1050:24 1099:15 issued 898:19 1042:25 1063:5 1081:2 issues 889:11,12 892:21,22 921:13 930:1,2 970:13,19 974:7 981:22 999:10 1005:8 1027:11 1045:18 1096:16 Item 978:17,19
--	--	---	---

IX 1045:25	868:10,14,16,21, 22 869:1 871:16, 17,23,24 872:3,5, 7,11,15,17 874:12,17,19,23 885:14,20 888:11, 16,25 893:16 894:2,5,6,21 895:3,4,13 896:5, 15,18 909:6,11, 17,22 910:1 916:18 932:18,20, 22,24 935:13,14 936:14,18 940:13, 20,22,24 943:11, 14 945:12,13,15, 17,19 954:12 956:25 957:19,24 958:4,6,13,25 959:5,12,15,24 960:5,9,13,15,16, 23 961:2,6 962:2, 4,6,10,15,18,22 963:4,7,10,20,25 964:3,9,11 973:23,24 974:1 975:5,6 976:5,9, 13,16,24 977:3,6 978:25 979:5,9, 16,20 981:1,3,5,7, 9 985:6,9,10 987:6,23 988:2,8, 12,14 990:10,15, 19 993:17 996:3, 8,12,16 997:18, 19,22,24 998:1 1001:10,12,14 1004:12,18 1005:13 1006:12, 14,21,24 1007:1, 3,7 1008:5,9,11 1011:11 1013:1,6, 10,16,19 1014:6, 11,15 1016:3,10, 14 1017:7,10 1019:5,6,8,9,11, 13,15,16 1021:13	1028:17 1029:20 1030:1,8,12 1034:14,17,19,23 1035:2,14,16 1042:11,13,19 1052:8,12,14,18, 19,20,22,24 1053:1,3,4,22,24 1054:1,3,6,10,12, 17,19 1055:1,6,13 1056:1,5,9,13,16, 22 1057:15,19,21, 22,23 1058:2,4,8, 15,19,24 1059:2 1060:12,19,22 1061:5,7,8,12,14, 16,18,20,21,22 1062:15 1064:4,7, 9,11,12,15,17,19, 23 1065:2,6 1066:17,23 1068:2 1069:17, 20 1070:1,6,8,10 1071:4,10,24 1072:1,9,14,20,23 1073:3,7,12,19,23 1074:10,12,18,20, 22,24 1075:1,3,5, 6,24 1076:3,6,8, 10,12,13,17,20,22 1077:1,6 1078:17, 22 1079:2,9,12, 19,23,24 1080:9, 10 1081:5 1084:25 1085:2, 25 1086:2,4,5,6, 10 1087:7,10,14, 16,18,23 1089:4, 10,13,14,16,19, 21,23,25 1090:1, 2,4 1091:20,22,25 1092:2,4,5 1093:16,19,20,22 1094:14,19,20,22, 24 1095:6,12,14, 16,20 1096:2,3,6, 22,25 1097:5,8,20	1098:10 1099:20 1100:1,6,9,12,21 1101:5,10,24 1102:7,17,23 1103:2,6,18 1104:23 1105:7, 25 1106:3,23 1107:4,6,21 1108:5,7,9,19,24 1109:1,2,10,13, 18,23 Judge's 863:15 July 1106:9,25 1107:4,22 jumped 1072:11 June 856:3 887:10 1106:8,13 jury 1098:21,23,25 1099:6,8 justification 900:23 1009:2 1040:11 1098:25
J		K	
J-O-H-N 1059:1		K-E-Y-N-E-S-I-A-N 927:5	
James 1087:17 1088:1,8		kansas 878:16 883:11 906:7,16 910:22,23 919:22 944:1,12,18,25 946:11,16 947:4,6 950:24 951:17,23 952:5,7,11 955:24 956:3,12 980:1, 12,22 983:20 986:2 990:3,8 991:1 995:16 999:17 1017:3 1037:6 1039:14 1042:1 1045:11 1052:7	
January 887:2 1102:2,12		Kentucky 995:9	
JG-1 1078:4			
JG-14 1068:12 1078:5 1079:4			
job 974:5,9,13,20 1041:6 1096:4,6			
jobs 928:7 954:2,7 974:21			
John 927:6 1058:17 1059:4 1068:9 1076:24 1077:8			
join 894:22 895:1			
joining 981:12			
joins 894:8			
Joint 1059:20 1065:25 1077:24			
joke 1035:8			
joy 1094:21			
JT-1 1059:25			
JT-11 1059:25			
Judge 856:2,11, 15,18 857:21,23 858:2,4,8,9,10,13, 15,17,18,20,24 859:1,3,5,7,9,11, 13,16 862:12,16, 17,18,20,22,23,25 863:2,4,6,8,9 864:15 865:14,15, 17,20 866:12,14, 16,18,20,25 867:1			

Kevin 954:24	Kolkmeier's 1058:5	1036:24,25 1037:1 1040:24 1048:13	lengthens 1106:14
key 927:6 1010:16			lengthy 969:22 997:3 1042:15 1046:15
Keynes 927:6	L	largely 876:8 1039:12 1048:15	Leonard 870:19
Keynesian 926:10,14 927:4	Lab 1024:9	larger 934:17 935:3 937:12 1006:6 1007:24 1018:23,24 1033:6	lessens 942:23
kids 968:20 1094:9,12	labeled 931:23 1108:12	late-filed 1100:19	letters 901:20
kind 871:20 876:13 879:2 883:6 900:24 904:17 915:5 918:17 920:9,15 923:20 926:8,10 930:21 933:22 934:11 937:1 942:3 946:18 958:16,20,21 986:15 996:4 1000:16 1002:21 1005:8 1017:16 1018:11 1038:4,6 1042:15 1045:3 1046:15 1048:24 1051:12 1093:9 1095:3 1106:13 1109:15	labor 926:23	Laughter 935:22 1094:5,13	letting 1013:21
	Laboratory 990:2, 14 991:7	lawfully 1069:15	level 876:23 914:6 965:14 967:3 985:1 1031:4 1085:20,21,22 1106:19
	lack 876:3,4 877:5 901:9	Lawrence 990:2, 14 991:6	levelized 992:8 993:4 994:2,8,10 995:24 996:23 1008:21,23 1010:8,17,18,20 1011:4,9,14,24,25 1012:6,14,18,19
	laid 1067:23	lay 1085:18	levels 879:3,6 880:19 912:14 983:10 1047:14
	land 952:13 955:2, 3,6,12	lead 956:5	liability 893:5
	landowner 966:6, 16,19,25 967:21 969:12,23,25 1005:10	leading 1004:23	liable 1107:16
	landowners 936:25 965:4,10, 13,18 966:8,10,20 967:8,12,14,24 968:2,4,5 969:7, 20 970:23 972:4 975:17 987:7 1004:23 1005:1, 21 1061:22 1090:2	leads 917:19	life 1041:15
	Lange 876:10 877:10	learn 922:6	light 971:24
	Lange's 878:10 887:12 928:15	learning 922:6	limit 883:13 969:19 991:19
	language 1029:4	lease 972:16,22 973:8	limitations 980:23
	laptop 962:24 964:6	leave 893:9	limited 900:10
	large 877:4 923:19 930:2 951:19 968:25 1004:4 1006:6 1018:13, 14,19 1033:4,8	leaves 1081:25	lines 875:6,21 876:24 877:22 900:4 944:8 970:8,24 983:13 987:18 990:1,13 1002:8,13 1003:17 1005:5 1023:6,7 1025:22 1026:25 1027:6,
		led 1033:7	
		left 856:5 887:18 1017:17 1085:22	
		legal 933:10 934:11 966:3 973:16 1068:14	
		legislation 951:6	
		legislative 971:21	
		legislature 951:12,13 967:2 1086:23	
		lend 974:19	

16,24 1028:21 1031:22 1032:1,2, 7 1037:11 1038:14 1041:12 1043:1,25 1044:1 1062:25 1070:17 1082:7,13 1101:16 1102:9 1103:8 1109:2	located 941:10 944:7 956:16 1027:6 location 890:4 933:25 locational 939:13 1012:1 locations 930:21 952:8 994:12 lockstep 984:7 log 964:6 logical 949:18 LOLE 1039:2,23 1040:6 long 882:22 935:21 1003:12 1004:22 1006:19 1040:16 1041:5 1109:21 long-range 1003:4 long-term 974:24 1003:24 1010:1 1040:17 longer 974:22 1002:24 looked 899:3,6 916:8 934:9 947:16 954:25 1033:5 1044:18 1048:20 Loomis 925:17,25 926:6,10 927:25 952:24 953:17 954:7 Loomis's 927:17 952:25 953:8 loosely 886:1 945:5 lose 1039:18 losing 1037:21	loss 1039:1,8,14, 15,19 1041:15 1051:15,19 losses 875:17 1045:18 lost 908:3,4 954:4 1027:22 1046:12 1078:25 lot 878:23 885:6 904:20 905:3 908:20 915:1,7 916:12 917:19 919:4 922:10,20 924:1 925:23 926:11 934:1 943:21 948:21 951:9 955:4 1033:2,7 1037:9 1048:13,14,16 1049:4 lots 885:11 loud 1047:3 loudly 988:16 Louis 883:11 Louisiana 995:3 love 967:22 loving 1095:8 low-cost 906:6,15 946:11,16 947:14 949:12,16 1009:15 lower 921:14 922:1,7,19,23 923:1,3 942:22 943:8,9 980:3,6 995:18 999:7 1007:24 1018:5,7 1019:3 1033:2 1106:18 lowest 922:17 luck 1046:21	lucky 1038:15 lunch 957:25 959:19 1006:17 1013:6,10 <hr/> M <hr/> M-I-C-H-A-E-L 867:11 977:2 M-I-S-O 885:13 mad 1094:9 made 858:1 868:13 873:21 874:16 895:22 898:6 915:8 937:5 962:14 971:4 975:17 979:8 1016:7 1056:21 1061:2 1068:23 1069:6 1071:15 1073:18,22 1079:16 1086:23 1089:7 1095:10 1103:10,19 1107:9,11 1108:21 1109:7, 15,17 Maguire 1059:11 1065:16 1077:15 main 906:13 938:8 963:17 maintains 1047:8 maintenance 968:10 major 1004:11,16, 24 majority 966:11 make 857:13 862:6 867:23 870:2 873:10 895:11 896:4 900:15 902:12
link 906:14 links 906:5 list 953:24,25 958:5,7,15,21 960:1 961:23 1042:14 1046:1,8 1054:13 1074:16 1091:7,9 1108:1 listening 935:18 listing 1107:25 lists 1046:10 1050:5 litigant's 1099:5 litigants 1099:7 litigation 975:19, 21 1074:7 live 881:23 883:1 905:1 1031:8 lives 969:6 LLC 888:6,10 977:13 LLC's 888:9 LMP 939:11,12 942:1 LMPS 921:19 load 1018:1 1039:1,8,9,14,15, 18,19 1047:15 1051:15,19 1084:11 local 974:8 1057:7			

911:21 913:24 929:3 940:9 943:1 947:23 950:21 967:23 982:8,23 989:5 993:14 1007:17 1011:5, 21 1020:21 1026:22 1029:17 1037:12 1039:20 1055:17 1068:5,6 1073:1 1079:1 1088:18 1095:1, 25 1097:22,23 1101:1 1106:21, 24 1108:20	888:18,23 896:8 978:22,24 1015:10 1059:24 1060:20 1066:6 1078:5 1088:14 1096:10 1108:14	915:23 1032:9 1039:9 1043:16 1044:14 1097:11	members 949:23 966:6 968:21 970:5 971:17 972:6 973:14 974:19 975:3 1062:11 1063:1,6, 10,13 1070:20 1071:1 1081:11 1082:15 1087:4
makes 885:11 984:22 1029:4 1044:8	market 921:15,23 937:18 941:14,16, 19,20 942:13,20, 21,23 943:6 966:7,12 981:22 999:24 1000:1,5, 14,15,16,18,20 1009:4,13,21 1010:4 1043:9 1083:11,22	meant 1022:4 1043:4	measure 998:25 999:4,5,13 1010:21
making 911:7 922:13 940:3 997:1 999:11 1029:21 1031:6 1087:18 1094:10	markets 901:16 922:12 942:19 952:2 1065:22	measured 910:21 911:18 999:2	memorandums 901:19
manner 906:21 1099:1,3 1105:14	masts 910:21	measures 1041:3	memory 1027:25
mantra 1002:4	matches 1045:1	MEC 859:3 863:6 894:8 945:19 949:23 954:22 959:9,10,12 979:20 1016:11 1017:17 1052:16 1058:17 1062:10, 12 1063:1,7 1064:21 1070:20 1074:3,5 1076:24 1080:16,20,24 1081:10,15,25 1082:15,21 1083:7,17 1085:18 1087:10 1089:11 1101:19 1102:17	mention 906:20 1001:22 1031:12
manufacturing 1018:15	material 880:13, 20,24 881:20 882:25 929:9,11 930:18 938:7,14 971:18	MEC's 1058:9,10, 16 1061:1 1073:21 1074:5 1079:15 1080:16 1085:8 1103:6	mentioned 860:9 878:23 922:21 931:17 939:18 954:18 972:10 985:16 1009:6 1011:1 1020:17 1026:25 1029:13 1030:5 1050:23 1053:14 1063:5 1067:24 1097:13 1100:20
maps 1092:22	math 913:10 1023:15 1082:1		mentioning 882:14
Marc 1017:14	mathematical 1023:24		merchant 928:9, 11 941:8,9
March 887:4 897:17 898:6,16, 19,20 1062:8 1081:3 1102:12	matter 870:2 1033:12 1043:23 1095:25 1096:19		met 903:13 910:21 937:2 949:5 950:4
margin 922:14	Matthew 1088:8	mechanical 963:22	meter 956:14
marginal 939:13 999:24 1000:1 1012:1 1018:13	maximum 956:7 987:2 999:3	medium 1010:1	meters 956:1,13
Mark 899:13,14 902:17 982:19	Maynard 927:6	meet 1004:6 1041:19,21	method 1009:5
marked 857:6,10 867:17,20 873:4,7	Maywood 875:12 876:6	meeting 999:6	methodologies 1032:16
	meaning 956:6	meetings 970:1	metric 1040:25
	means 914:13	member 975:20	metrics 1051:16
			Mexico 963:15 974:8 1057:6
			MG-1 977:20

978:16,22 979:14	1030:4,16,20,22, 23	21,25 931:13	mission 870:17
MG-11 977:21	mills 1018:15	937:18 939:6,10	Mississippi 995:4
978:16,22 979:14	mind 937:22	941:16 957:4	Missouri 857:4
MHCP 886:18	982:15 1096:20	980:16,20,21	858:24 859:22
Michael 866:18	1105:2	989:11,13,16,19	860:2 863:2
867:4,11 872:6,	minimal 986:14	994:22 995:2,6	867:14 869:10,14
13,20 976:12	minimally 970:7	997:1,6,11,14	870:4 873:1,18
977:1,7 1008:18	Minnesota 995:8	999:8,13 1000:15	878:17 888:7
1012:24 1014:1,	minor 930:1	1002:13 1003:3,	889:25 897:6
18,25 1101:15,24	1109:15,17	15 1006:4 1009:7,	906:6,14 919:15,
1102:8	minute 858:5	16 1011:1,3,19	23 921:15 924:23
Michigan 995:9,10	863:14 864:15	1018:9 1019:24	925:10,19,22
microphone	960:16 996:3	1022:10,17,21	927:12 928:3,5,11
996:10 1055:20	1050:21 1072:12	1023:17 1024:9,	932:4 933:18,21,
1081:6	1073:7	17 1025:10,13,21	24 934:10,14,17,
micrositing 971:5	minutes 959:21	1026:21 1027:5,	22,25 935:8,11
mid 1042:1	963:2,21 986:12	11,17 1028:23	936:3,19 937:16
1082:14	999:1 1014:4	1032:7,10,16,21,	941:11 943:20
Midcontinent	mischaracterizatio	23 1033:7,8	944:2,7,8,11,15,
885:13 893:10	n 1070:24	1036:7 1037:4,7,	20,23,24 945:3,9,
1047:5	mismatch	11 1038:3 1039:7,	15 946:12,16
middle 1024:21	1002:21,24	11 1040:3	947:6,14 949:10,
1037:20	MISO 860:4,5,11,	1041:19 1043:9,	17,22 950:7,9,21,
Midwest 1043:2,	15 864:4 877:7,	12,15 1047:7,17,	22 951:3,11,15,
12,14 1045:24	15,16 879:8	18,25 1048:6,21	21,25 952:5,6,10,
1046:8,24	880:7,11,19,24	1049:1,13,14	12,21 953:4,13
mike 856:16	882:25 883:14,17	1053:11,16	954:2 955:3
935:17 988:9	884:12,13,20,23,	1084:20,21	956:4,14 961:16
1062:16	25 885:2,7,9,11,	1090:13,23,24,25	968:6 969:13
miles 883:10	12,23 886:5,6,14,	1091:3,5,6,7,13,	972:4,12,17
military 870:19	17 887:1,4,8	15,18 1103:23	980:4,13,16,20
Milligan 959:1	890:2,10 891:13,	1104:3 1105:4	981:7 987:7,20
1014:1,18,25	14,23 892:9,18	MISO's 863:23	988:6,19 991:15,
1015:2,8 1016:15	893:1 894:17	885:5 1020:4	19 992:18,19
1017:13 1019:17	897:21 898:4,23	1021:24 1022:1,5	993:6 994:4
1021:16 1028:14	899:10,12 901:16,	1023:8 1032:1	995:7,19 999:19,
1053:7 1054:7	19 903:21 904:2,	1033:11 1039:23	23 1000:10,20,23,
million 860:10	3,5,12 912:18	1047:6 1049:9	25 1001:3
892:5 1026:4	918:13,15,17,18,	1105:5	1004:21 1009:17
1027:19 1028:4,8,	21 920:23 921:8,	MISO/FERC	1016:20,24
25 1029:11,13	13,15,23 924:25	876:20	1017:21,23
	928:25 930:14,17,	misremembering	1018:8,10 1019:6
		899:15	1035:23 1036:13
		missed 1030:9	1037:7,8,20
		1106:4	1038:20 1040:3
			1043:18,19

1045:22,24 1049:15 1050:23 1052:20 1053:10 1059:11,14,15,20, 21 1061:12,22 1065:17,19,20,25 1066:1 1068:15 1074:22 1077:15, 18,19,24,25 1082:2,14 1084:8, 19 1087:15,17 1088:12 1090:2, 12,20 1091:19 1092:16 Missouri's 870:18 1039:3 1089:6 Missouri-based 951:7 Missourians 937:7 940:11 949:9,18 972:3 misspoke 1090:6 misspoken 1070:25 misstate 886:3 1071:3 misstated 990:6 misstating 1028:13 misunderstood 950:18 952:19 953:22 mitigate 880:21 881:1,6 889:20 1038:15 mitigated 931:21 953:15 970:14 mitigates 932:1,2 mitigating 953:8 mitigation 968:5,6 969:13	MJMEUC 897:7 903:6 904:17 1081:10 MLA 858:6 862:14 888:20,21 940:18 1008:6 1021:14 1053:22 1079:21 1099:17,21 1103:10 MLA's 1096:19 MM-1 1015:13 MM-3 1044:3 MO 1042:1 model 906:9 926:23 967:15,17 1051:5,12,13,17, 19 modeled 1104:4 modeling 1022:22 1024:8 models 924:2 1024:1,5 1026:24 1031:11,15 1052:2 modification 937:23 1036:9,12 modifications 900:3 969:24 mom 969:3 moment 1069:21 1070:23 Monday 879:17 905:2 1101:3,4,6 money 950:10 monitor 974:15 Monken 869:7 871:9 month 890:11 892:18 1026:5 1083:9	months 983:23 1027:18 1028:23 Mo pep 1071:2,7 1083:3,4 morning 856:3,18, 20 858:11 863:10, 11 867:1,3 869:3, 4 872:17,19 874:23,25 907:22 912:25 916:20,21 943:14,15 945:21, 22 961:8 963:10, 11 motion 893:9 894:7,9 896:6 1098:7 1106:24 motions 1098:10 mountain 1044:17 MOUS 899:6,9 mouth 904:23 move 870:7,9 882:18 893:12 896:13 914:12 975:23 978:20 979:3 984:6 1016:1 1048:23 1060:10 1062:15 1066:15 1073:23 1078:15 moved 970:12,24 mover 1083:8 moves 965:13 1002:2 1038:8 movie 1094:4,10, 12 moving 896:20 897:19 909:14 1032:5 1048:22 MTEP 1024:15 1026:21 multi-value	1002:13 1003:14 multiple 878:24 879:22 889:24 970:13 1097:8 municipal 949:23 950:7 1059:20 1065:25 1070:18 1071:1,6,7,18 1077:25 1080:24 1081:11,17 1082:2,8,14,20 1083:21 1084:19 municipalities 1071:2 MW 875:12,17,25 876:23 879:7,19 898:2,3 899:16 903:20 904:18 913:18 914:4,13, 16,20 919:3 921:4 938:5 980:8,10 982:24,25 983:1, 11 986:8,9 987:19 988:5,19,23 989:10 1000:3 1007:25 1029:4,5 1062:11,19 1080:17,21 1082:1,9 1083:6, 9,17 1086:15,16, 19 1087:1
<hr/> N <hr/>			
			nailed 1010:9 named 1067:2 nameplate 982:24 983:14 984:1 987:3 nation 869:20 national 869:8,10, 13,16,23 870:1,2, 13 919:5 990:2,14 991:6 1024:9

1042:24 1048:9, 10,19 1049:20 1050:11,16	1084:10,21	1109:4	929:22 960:10
natural 870:5 924:3	nice 1038:5 1040:12	NREL 1033:4	962:10 979:5
nature 864:4 974:21	NIETC 1050:12,19	nuances 1039:10	1014:6 1016:3,4
Navy 924:4	night 873:20 983:21 1103:19	number 880:8 888:20 893:11	1029:18 1030:12
necessarily 870:2 922:3,8 929:15	nighttime 912:7,8	904:15 907:17	1056:17 1060:23, 24 1066:17,20,22
943:9 988:5	non-invenergy 924:20 925:25	928:18 939:22,24, 25 973:4 982:15	1067:21 1069:15
1003:2 1048:18	non-missouri 927:14	1004:8 1006:3	1070:3 1072:6,12
Necessity 934:19	noneconomical 1001:3	1011:3 1027:22	1073:15 1078:22, 25 1079:7,13
needed 860:4 880:25 918:18	nonregulated 928:16	1029:5 1031:7	1089:4 1098:24
991:14 1004:6	noon 1013:9	1033:3 1040:12	1102:15,18,24
1053:12 1055:17	normal 907:21	1046:22 1063:10, 12 1071:5,8	1103:3,6,7 1107:3
1096:16	normalized 907:5, 8 908:7	1081:13 1085:19	objections 894:10 895:1 896:6,10
negative 925:21 927:18 941:20	north 994:22 995:6	1086:25 1099:21	1003:18 1072:21, 22,24 1073:16,17, 19 1079:13
953:19 983:3,17	note 940:1 968:15	numbered 979:11	1095:1 1096:8,17, 18 1098:12
1019:23,25	980:14 981:16	numbering 911:6 979:10	1101:17,18
1020:3 1036:6	986:2 991:17	numbers 904:16 939:18,20 940:2	1104:14 1105:8, 11
1092:21,24	1003:11,16,22	962:1 979:1	objective 906:13
negatively 1047:20	1009:18 1010:17	1096:11 1108:18, 19	objectively 1095:22
negotiation 1005:20,22	1106:12	Numeral 1045:25 1046:7,23	obligation 937:2
neighbor 1038:8, 10 1039:22	noted 982:18 986:12 1010:23	<hr/> O <hr/>	observed 910:16 1069:6
neighbors 1037:2, 9 1046:3	notes 1101:13 1103:19	O-W-E-N 1088:9	obtain 883:13 939:10
nes 927:6	notice 888:12 1096:9 1101:15, 18 1103:11	object 893:25 990:5 993:8	obtained 882:21
net 922:10,11,16, 22,25 923:2,16	1107:25 1108:13	1028:12 1067:14	obtaining 955:13 967:8
926:14 927:16	notion 951:7	1070:24 1098:16	occasionally 914:14
941:19,20 942:23	Notwithstanding 990:25	1104:18	occur 931:15 954:20
943:5,6 952:25	November 891:2	objected 893:24 930:3 1030:11	off-system 922:14
954:9 1034:8		1098:15 1102:20	offer 857:22 868:9 874:11 962:6,8,9 966:3 969:18
network 891:4 1043:25 1051:13		objecting 1079:3 1101:20	
		objection 857:23 868:10 874:12	

973:22 1000:7 1007:23 1017:20 1056:5,13 1089:3 1105:15	operated 907:23 920:3	904:22,25 905:4, 6,9,11,14 947:17, 25 1007:20 1020:19	original 933:8,15 965:23,24 966:1,8 970:12 971:15 1029:12 1082:24 1086:16
offered 933:16 979:1 998:25 1011:1 1012:13	operates 1000:16	optimally 919:25	originally 979:10
offering 966:8 967:19	operating 906:10 980:9 1026:4	option 878:25 967:15 980:3 995:18	Osborn 1033:7
offers 999:24	operation 862:9 946:10,14 948:1, 13,19 949:2,21 968:24 1020:2 1031:17	options 1001:4	outage 1042:6
offhand 886:8 892:14	operational 861:1 862:2 865:11 942:16,25 1026:5 1047:10	order 887:16 888:3,13,14,18,23 889:2 897:11,16, 20 898:19 899:23 900:19 901:11 905:21 906:19,23, 24 908:10,21 913:13 914:19 915:8 917:23 919:4 920:1,7,18, 22 921:3 936:11 937:24 938:3 949:4 955:17 967:14 968:1 992:3,7,14,23 993:11,18,19 1023:6,7 1026:22 1044:17 1051:5 1062:7 1063:4 1072:10 1074:14 1081:2,9 1096:23, 25 1097:1,4,7 1107:13,18 1108:12,15	outcome 933:9 1051:6 1099:5
Office 1000:25	operations 870:18 968:13,14 969:3 1012:17 1047:16 1049:5 1077:21	ordered 937:23	outlets 1036:18
Officer 1065:22 1077:21 1088:12	operator 893:11 924:4 1047:6	Orders 920:15 1096:10	output 956:7 983:4,18 984:8,25 986:13
official 1106:20 1108:13	opinion 899:5 917:9 918:13 919:23 921:2,12 952:15 957:12 966:3 974:13 980:3 1007:19 1020:18 1068:17, 20,22 1069:5,8,9 1104:17,20	organic 970:18	outreach 971:3
officially 860:17	opinions 1068:25	organization 869:8 961:17 966:5,15 967:18 969:11	outstanding 860:13 877:8 892:17 1096:8 1098:12 1105:21
offset 925:3,5 942:24 1029:23	opponent 1098:22	organizations 971:22 1093:13	outstripped 1087:1
offsetting 927:11, 22	opportunity 909:13 964:22 970:3 1098:18 1099:14		outweighed 1020:16
oftaker 988:21 1000:21	oppose 973:6		ovation 1095:19
Oftentimes 1018:20	opposed 897:2 933:22 949:1 987:15 1021:20		overarching 965:11
older 924:2	opposition 899:18		overcome 980:23
ongoing 901:20 936:23 1086:22	optimal 901:5,6,7		overdue 1006:17
online 858:21 1003:6 1034:22 1057:20 1093:3			overloaded 1018:2
open 860:21 1079:19 1093:10 1100:21 1102:11			overly 1096:13
operate 890:8 907:8 908:7 919:25 968:18 1047:12			overrule 1073:14 1079:13 1102:23
			overruled 1096:18 1103:7
			oversubscribed 1002:9
			overturned 885:9

Owen 959:13 1087:17,18 1088:1,6,8 1089:8 1092:3,9 1094:1, 20	909:3 915:7 923:19 933:23 937:25 938:6,8,11 942:9 962:14 970:22 979:8,12 995:9 1004:8 1005:3,18,23,25 1010:20 1016:7 1017:18,19 1030:18,19,21 1039:14 1041:1 1056:21 1061:2 1066:21 1073:22 1074:5 1079:16 1082:24 1089:7 1091:3,12 1097:17 1098:16 1104:10	1052:9 patient 959:17 patiently 958:8 PATRICIA 1055:9 pattern 1040:17 Paul 987:13 1021:19 pause 1073:9 pay 904:11 922:16 950:10 1033:23 1041:18 1063:23 1084:7 paying 859:23,24 1041:17 1084:16 payment 972:23 payments 965:4, 10 PE 900:2 peak 907:6,7,13 908:5,6 911:13 912:3,23 914:24 999:6 peaks 907:19 908:16 914:24 915:15 pending 887:8 894:3 penetration 1047:14 people 908:4 925:10 940:12 968:18 973:2,5 1011:22 1047:3 1095:4 perceived 1068:23 percent 907:4,16 910:13 917:6 966:7,12 967:3 972:10,11,15,16, 22 973:7,10	982:3,6 985:23 986:7,16 990:4,9 991:1,8 998:25 999:12 1031:2,8,9 1047:9,14,16 1049:1,3 percentage 956:7 perform 994:2 performed 903:22 994:8 1034:4 performing 1051:5 1069:14 period 915:3 939:14 987:1 991:3 1040:18,19 periodical 924:13 periods 908:14 permissions 930:25 931:3 permit 1002:25 1003:1 permits 873:17 955:13 permitting 1003:12,18 1037:19 perpetuity 975:3 person 883:24 884:3 976:1 1067:5 personally 1069:6 personnel 861:10, 24 865:5 phase 878:16 880:1 886:24 899:21 902:15,16 904:4,5 906:15 919:7,8,14,17,19, 21,22 934:20,22, 24 935:1,3,4,7,10 936:10 943:19,25
P			
P-N-A-Z-E-K 1100:12			
PA 902:18 911:2 914:3,9 985:20			
packages 1005:1	partial 1021:4		
pager 1109:5	participants 926:1 937:18		
pages 859:17 862:8	participate 1070:21		
paid 891:6 892:4 898:3 921:14	participation 1022:1 1057:25		
pair 1043:3,15	parties 893:24 894:13 895:22 896:3 905:3 924:20 1074:9 1097:17 1106:19 1107:3,22 1109:6		
palatable 985:2	parts 894:10 980:20 995:4,8 1002:13 1016:24 1030:13 1092:21 1098:11		
pales 973:4	party 894:11,12, 15,17 895:20,25 930:3 1098:22 1099:6 1101:6		
paragraph 873:13 889:8 937:24 938:3 956:10 992:7,14,23 1081:10	party's 904:24		
paragraphs 955:21	past 1086:22		
parallel 880:6	patience 964:14		
part 858:1 862:11 868:13 869:25 871:8 874:16 880:4,10 886:23 894:5 895:20,23, 25 896:1 900:14			

944:10,12,14,23 946:15 947:1,21, 25 948:2,10,12, 13,18,20 949:1,3, 16,21 972:10,12, 17	939:6 1037:7 1038:4 1090:24 1091:5,16 1104:9	1063:16,24 1081:5 1084:8,13 1091:18	1048:10
phase-by-phase 1021:8	place 856:7 870:7, 9,22 973:9 1001:25 1002:23 1003:20 1058:9 1104:14	point-to-point 989:14,15	post 971:21
phases 899:21 901:6 905:5,11 919:5,6,10,20 931:19 946:10,15, 25 947:18 948:9 1008:2	places 929:14 952:5 1097:8 1101:14	points 890:5 939:9 987:20 1011:19 1036:11,15 1045:4 1046:10 1047:2 1048:23	post-mortem 1012:17
phasing 896:24 899:19 900:4,10, 17,18,24 936:3 946:1,6,20,21 947:13 948:6,23	plains 1043:2,11, 14 1044:18,20 1045:22 1046:1,2	poking 921:1	posted 891:5 892:4
philosophical 926:5 927:1	plan 889:12 892:22 1003:4 1047:11	policies 968:5 972:7	potential 881:7 915:4 932:6 951:2 952:4 994:4 1009:7 1011:2 1019:23 1036:18 1037:9 1086:23
philosophies 926:6	plane 1000:17	policy 1041:19	potentially 879:8, 24 927:11 929:18 930:2 935:7 966:25 968:17 975:17 1051:8 1093:10
philosophy 925:24	planning 886:24 1020:2 1021:24 1022:5,19 1023:24 1039:2 1040:7 1048:22	political 951:10	power 870:7,9 897:20,21 906:7 918:8,20 921:3, 21,22 934:2,3,4, 14,21,22,25 935:7,10 936:2 943:19,20 944:7, 12,22,24 947:14 949:21 950:4 951:20 956:7,11, 12,13 981:18 991:15 994:11 1000:17,21 1001:1 1002:14 1006:4 1009:15, 18 1011:23 1012:22 1018:5 1036:10 1037:21 1038:1,3 1044:12 1048:17 1049:5, 16 1050:1,7 1063:23 1070:19 1071:6,19 1082:14 1084:7 1093:9
phone 964:5 996:11	plans 860:20	pool 1002:14 1006:4 1071:2 1082:14 1085:8	PPA 1000:12
physically 1037:24 1040:2	plant 924:12 980:9	portion 944:14 955:8,14 1104:21	
pick 1017:16	play 974:10 1000:13	portions 952:5,6 988:23 1097:10 1106:17	
piece 870:8,12 1041:4 1097:12 1105:1	plural 1091:5,6,15	position 871:4 896:24 900:9,10, 16 901:15,21 902:7 903:19 919:9 920:10 927:20,21 937:25 938:6 946:24 947:24 948:5 961:15 971:2 1059:15 1065:20 1077:19 1105:5	
pieces 978:1 1105:9	Pnazek 1100:11, 12	positions 904:24	
Pipeline 888:9	pocket 1039:17	positive 877:18 911:9 939:10 941:17 1019:23	
PJM 883:25 884:8 897:6,21 898:3 903:17,20 904:2,6 918:19,20 919:22 920:23 921:3,14, 22 931:13 933:13	point 870:16 876:8 881:2,14,18 883:16 887:8 888:22 917:12 928:13 932:4 934:2 975:3 988:17 999:11 1004:10 1006:24 1009:6 1029:3 1047:5,18,24 1048:21 1062:10	possibility 927:24 1082:21	
		possibly 1022:25	

1010:4	presented 903:24 917:25 972:15 1011:6 1012:11	923:2,3 939:15 941:14 942:3,13, 22 943:8 999:18 1000:2,21 1009:18,21,25 1010:2 1012:1,6 1016:25 1018:20 1029:9 1038:7	private 972:1,8
practical 1044:21	President 961:17 973:3 977:15 1059:17 1099:11 1100:13	pricing 1009:9 1010:4 1012:2 1036:7 1092:22, 24	proactive 1002:6
practices 969:8	pressure 913:1,3	primarily 1043:16	probability 1039:21 1051:19
pre-warning 959:17,18	presumes 926:10 949:25	primary 1092:13	problem 878:8 892:16 895:19 958:10,11 1023:25 1025:13 1042:3 1048:20 1101:9
preceded 1040:19	presuming 861:9	principal 1015:3	problems 1013:20 1014:8 1104:3
precise 883:7	pretty 881:24 884:23 917:7 984:7 1023:15 1033:13 1039:5 1095:4 1109:14	Pringle 856:17,18, 25 857:21 858:2 865:17,19 866:10, 18 867:1,8 868:8, 14 871:23 872:5, 15,17,24 874:10, 17 878:1 893:15, 23 894:4 895:3,4, 5,16 896:15 909:9 930:7 957:2,17 958:2,4 985:10,14 987:4 1006:20 1007:7,9 1008:3, 15 1019:16,20,21 1021:10 1053:4,6, 7,20 1061:21 1070:8 1072:4,11 1075:6,10,22 1079:24 1080:3,8 1090:1 1108:19 1109:1	procedural 1102:19 1103:4
precisely 1023:12	prevent 895:10 989:17 1103:23	primary 1092:13	proceed 933:15 962:20 971:15 1014:7,16 1077:6
prefer 951:10 952:11 967:16	previous 905:21 937:24 966:13 974:15,18 1038:3 1104:16,22	principal 1015:3	proceeding 888:3 889:4 895:20,24, 25 904:12 955:4 961:20 982:5 1098:4
preference 951:7 967:17	previously 857:6, 10 867:17,20 873:4,7 888:12 896:8 897:4,10 901:13 903:4,25 1024:7 1030:8 1074:4	Pringle 856:17,18, 25 857:21 858:2 865:17,19 866:10, 18 867:1,8 868:8, 14 871:23 872:5, 15,17,24 874:10, 17 878:1 893:15, 23 894:4 895:3,4, 5,16 896:15 909:9 930:7 957:2,17 958:2,4 985:10,14 987:4 1006:20 1007:7,9 1008:3, 15 1019:16,20,21 1021:10 1053:4,6, 7,20 1061:21 1070:8 1072:4,11 1075:6,10,22 1079:24 1080:3,8 1090:1 1108:19 1109:1	proceedings 856:1
prefiled 882:1 961:23 962:3 978:15,16,18 1015:17 1054:14 1056:9 1060:6 1066:8,11 1068:7, 12,13 1069:12 1078:7 1088:13 1097:9	price 899:12 904:1 918:19 920:23 922:12,17,19 923:12 939:6,13 999:25 1000:3,6 1009:13,19 1029:6,8,9 1043:18	prior 861:10 887:11 889:23 901:11 920:1 933:11 934:1 936:8,11 993:11 1096:10	process 871:12 878:14,22 894:14, 18 930:6 955:12 970:23 1005:5 1021:24 1022:5 1025:21 1045:6 1102:11 1103:23 1104:2,18 1105:18
preferred 951:7 967:17	prices 897:20,21 898:2,3 899:14 903:21 904:3,4,5, 6,11,18,19 921:3, 14,22 922:2,8,23	priority 1002:14 1086:24	procure 891:3
prejudice 1097:20	prejudicial 896:2		procurements 1050:25
prejudicial 896:2	preliminary 861:5 865:9		procuring 1004:2
preliminary 861:5 865:9	premarked 1055:16		produce 912:11 913:8 916:3 983:20,25 984:21
premarked 1055:16	premises 941:22		produced 913:14
premises 941:22	prepare 977:16, 19,23 1015:8 1088:13		
prepare 977:16, 19,23 1015:8 1088:13	prepared 978:12 1015:9 1067:16		
prepared 978:12 1015:9 1067:16	preparing 1024:4		
preparing 1024:4	present 873:19 900:21 970:1 1095:23 1099:7		
present 873:19 900:21 970:1 1095:23 1099:7	presentation 1099:1,4		
presentation 1099:1,4			

<p>915:23 956:16 987:1,3</p> <p>produces 912:13 956:13 983:19,20</p> <p>producing 914:16 916:3 917:21,23</p> <p>product 926:12,16 1075:19 1107:19</p> <p>production 908:18 910:14,20 911:17 915:3 999:1,2 1051:13,17</p> <p>productive 999:21 1000:6,9</p> <p>productivity 980:7,11</p> <p>products 898:23</p> <p>professional 917:9 918:13 921:11 1095:9</p> <p>professionalism 1095:11</p> <p>proffered 888:21</p> <p>profiles 983:18 986:14</p> <p>profits 927:13</p> <p>progression 1038:6</p> <p>project 860:8 861:1,22 862:1 865:11 866:1 869:12 870:1 871:4,6,10,12 875:11 878:16 885:8 891:5 896:25 897:5 899:20 903:13 905:14 906:2,5,14 913:18 914:25 916:14 917:12,14 919:1,13,17</p>	<p>925:3,5 927:13 929:8 932:10 934:13 936:5,7,21 937:1,13 940:9 944:1 945:8 946:2 949:25 953:25 954:21 955:9,14 957:10,14 965:12, 18 967:7,9 968:2, 11 970:10 971:18, 20 972:5,25 973:4,6 975:23 980:18,21 983:10 987:19 995:17,25 1002:2 1003:7 1005:20 1006:7,8 1007:20 1019:24 1020:19,23,25 1021:5,6,21 1022:18,21 1024:6,11,12,13 1025:19 1031:23 1034:2,6,10,11 1035:23 1036:10 1039:2 1041:23 1090:12 1092:11, 19,23 1093:1 1100:16 1102:10, 14 1104:1</p> <p>Project's 882:23 897:5,8 992:16</p> <p>projected 902:5,7, 13 903:16 910:19 919:18 939:1 957:14</p> <p>projections 920:18 1005:25</p> <p>projects 864:4 952:16 974:6,15, 19 983:10 984:7, 9,18 986:1 990:3, 9 991:2 1001:23 1002:14,15 1003:5,8,10,13, 14,20 1004:5,6,9 1005:3,18,23</p>	<p>1022:6,23 1025:14,17 1027:12,13 1032:10 1050:24 1092:18 1093:3,7, 8 1104:2,4</p> <p>promises 1107:9</p> <p>PROMOD 1012:3</p> <p>proof 1052:4 1105:15,16</p> <p>property 965:19 972:8 1004:22</p> <p>proportionately 956:11</p> <p>proposal 875:14 897:3 899:22 931:2 935:9 967:1</p> <p>proposed 875:10 877:7 880:19 901:12 903:5 906:8 917:12 921:19 929:7 931:16 934:16,18 935:3 937:12,23 952:17 970:12 971:20 985:22 1007:15 1012:22 1021:8 1027:5 1032:2</p> <p>proposes 899:20 900:3</p> <p>proposing 913:20 917:14</p> <p>proposition 1090:11</p> <p>proprietary 1073:25 1074:1</p> <p>prospects 1092:10</p> <p>protect 1041:10</p> <p>protection 869:20</p>	<p>Protocol 968:5,6 969:14</p> <p>protocols 969:9, 13</p> <p>prove 972:2</p> <p>provide 860:20,25 864:18 889:9,12 892:19,22 900:23 902:2 909:2 914:19 929:1 964:20 967:14 1021:5,6 1074:8</p> <p>provided 860:22 861:3,4,14,15,23, 24 865:3,4 879:12 880:1 887:1,4 899:4,7 901:2 908:22 911:1,2 912:19 915:11 920:19,25 925:17 932:16 936:10 952:23 953:17 957:13 1005:2 1055:24 1102:10</p> <p>providing 860:22 886:14 954:6 1003:24</p> <p>provision 889:20 892:18</p> <p>provisions 971:24</p> <p>proxy 1009:13</p> <p>PSC 967:25</p> <p>public 857:4 858:15 862:20 867:14 873:1 888:7 903:14 919:8 925:12 926:3 933:23 940:24 947:20 948:10 950:9 963:16 964:21 970:22 971:4 974:8 985:7</p>
--	--	--	---

1000:25 1019:13 1025:1 1042:24 1053:1 1057:7 1059:14,15 1060:17 1061:18 1065:19,21 1075:3 1077:18, 19 1078:19 1089:23 1092:16 1106:22 publicly 939:7 988:18 published 1025:3 pull 856:15 976:16 1055:20 1102:1,7 1103:20 1106:6 pulled 976:18 998:12,19 1046:18 pun 1037:14 purchase 883:8 906:6 942:21 1000:17 1038:1 1049:16 1062:19 1080:17 1083:7, 21 purchased 988:5 1001:1 1062:12 purchaser 922:11, 22 923:17 941:20 943:6 purchasers 922:17 purchasing 922:18 923:18 1082:16 purple 1036:6 purpose 1031:11 purposes 888:17 893:15 914:2 918:2 952:10 1022:19 1025:18	1074:7 pursuing 968:22 pushing 918:19 put 881:14 891:23 904:23 911:18,22 920:4 923:22 924:8 939:14 953:13 960:4 979:11 982:4 983:24 1001:1 1023:11 1091:13 putting 924:3 puzzled 1100:3 <hr/> Q <hr/> qualified 878:21 quality 1002:7 quantify 1034:5,8 question 864:16 868:23 871:9,14 875:6,8 876:16,24 880:22 886:13 890:23 892:2,6 896:24 899:19 904:13 905:9,16, 18 908:4 915:15 918:16 919:19 922:1 925:15 927:15 928:21 933:3,10 934:24 935:5,6 936:1,12 937:5 938:5 944:4 946:4,5,9,13,19 948:16,24 950:25 952:10 959:14 965:6 966:4,23 971:12 972:21 973:25 974:17 975:12 990:18,20 994:1 996:18,21 1000:23 1004:21 1005:7,12 1008:14 1010:7	1017:18,19 1018:12 1019:22 1020:21 1028:7, 13,18 1029:13,20, 22,24 1030:1,10, 13 1035:4,24 1038:24 1040:9 1042:7 1048:1 1049:23 1051:21 1052:1 1057:18 1058:5 1063:8,25 1070:8 1071:22 1072:7 1073:1 1087:2 1091:14 1093:1,25 1100:20 questioning 954:5 958:17 985:15 1105:13 questions 857:15 858:7,9,14,18,23, 25 859:2,6,8,9,15 862:13,14,19,23 863:15 865:21 866:11 868:1,19, 25 869:5 871:16, 18,20 874:3 879:18 896:11 908:17,20 909:24 910:3 912:22,24 915:1 916:16,19, 23,25 917:1,20 919:16 920:12 932:19,21,25 934:4,7,11 935:15,23 936:7, 15,17 940:15,18, 23 941:13 943:12, 19,22,23 945:11, 25 947:15 948:21 950:17 954:13 956:24 957:18 960:2 962:19,21, 23 963:1,12 964:17,22,24 973:23 974:2	975:7,8,9,16 978:5,9 981:3,6 985:4 987:5,6 993:23,24 997:23, 24 998:2 1001:11, 16 1006:15,19,20, 21 1007:5 1008:4, 21,22 1015:19 1017:10 1019:5,7, 10,12,14 1021:11, 14 1034:18,19,20, 22,24 1035:1,5,19 1042:11,14,18 1050:20 1052:8, 15,25 1053:21,23 1054:2 1055:12 1056:24 1057:3, 16,20,21,24 1060:3,5 1061:7, 11,15,17,21 1064:3,8,10,13 1066:7,10,20 1069:23 1071:25 1072:2,6,17,22,23 1074:18,21,23,25 1075:2,23 1076:1, 7,8,10,14,15 1078:10 1079:22 1080:9 1084:1 1086:1,2,4,14 1088:20 1089:14, 18,20,22 1090:1 1091:21,24 1092:1,2,7 1093:17,23 1094:15 1109:23, 24 quick 975:12 1035:4 1103:20 quickly 996:14 1053:17 1106:15 1107:13,18 quiet 988:12,14 quotation 1024:22 quote 877:24
--	--	---	---

895:6 897:19 921:3 973:13 1025:10 1068:21 1099:2 quoted 920:22 quotes 894:20 quoting 1069:4	rated 951:24,25 983:15 986:8 ratepayer 922:9, 24 933:19,21 934:4 941:18 942:18 1041:16 ratepayers 919:15,24 922:16 934:25 936:20 937:16,20 941:17 942:6 943:5,9 950:7 1001:3 ratepayers' 922:2, 20 rates 922:2,9,15, 20,24 923:2,19 942:9,14,18,19 943:2,9 1083:22 rating 970:18 ratio 1020:6,8 1023:9 1032:6,15 1033:2,19 ratios 1020:13 1023:14 reaching 955:25 reactor 924:4,5,9 read 863:21 864:1 869:18 873:16 878:3 889:12 891:17 894:20 896:7 897:8 900:6 907:11 921:2 922:5 925:17 928:21,25 956:17 983:4 1001:5 1043:14 1046:13, 15,16 1047:3 1068:19 1073:8 1098:23 1102:1,8 1103:8 readily 1044:7 reading 864:20	893:6 894:10 1098:24 1103:17 ready 856:17 958:12 961:7 976:10 979:16 1013:11,24 1058:16 1059:2 1065:6 real 1041:16 1103:20 Realgy 903:10 realignment 885:21 realistic 910:14 realize 964:19 1106:4 realtime 1018:20 reanalysis 982:6 reason 864:2 878:19 880:2 883:4 884:10,14 895:2,17 902:20 921:17 956:20 988:9,15 991:10 1012:19 1100:2 reasonable 879:15 881:15 901:23 904:15 947:3 957:9,15 964:25 983:7 986:18 1009:5,13 1010:13 1011:7 1021:4 reasoning 999:19 reasons 894:14 951:9 995:20 Rebecca 1064:22 1065:4,9 rebuttal 857:9,13, 16 859:19 860:19 864:17 867:19,24	868:2 873:6,10,25 874:4 875:4 876:25 878:11 896:21,22 897:24 900:18 901:12 907:1,2 909:2 911:12 917:2 921:25 938:1 961:19 962:3 977:19 978:5,10, 15,21 979:15 980:5 987:16 989:22 990:13 994:16 995:12 998:7 1003:9 1011:18 1015:9, 13,17,20 1023:21 1024:4,19 1026:1 1027:4,16 1042:21 1044:3 1050:25 1055:14 1059:18,25 1060:8 1062:23 1065:23 1066:5, 13 1067:18 1070:15 1077:22 1078:4,11,13 1079:6 1082:5 recall 859:21 877:9 881:4 886:8 892:13 899:14,15 943:22 946:2 1033:9 1086:13 1101:22 1106:7 receive 895:18 942:24 967:16 1012:16 1051:1 1056:18 received 857:25 868:12 874:15 896:1 946:1 962:14 969:25 970:18 979:8 1016:6 1056:20 1061:1 1073:21 1079:15 1089:6
R			
R-E-B-E-C-C-A 1065:5 R-U-S-H 867:11 RA-1 1066:5 RA-3 1066:5 1067:1,15 1068:11 1075:11 rains 927:7 raise 866:20 889:11 892:21 894:18 913:13 976:19 1014:9 1058:19 1077:1 1087:19 raised 859:19 862:8 876:20 908:20 1079:8 raises 908:17 915:1 Ralls 875:13,19,25 876:7 ranchers 968:12 range 1033:1 1040:15,16 ranges 1032:7 ranging 1020:6 1032:11 rate 942:10 943:2 1000:25 1007:17 1083:8,11,16			

receiver 1045:2	1040:17 1056:6, 17,18,21 1058:13 1059:9,24 1060:11,25 1061:2 1065:14 1066:4,16 1068:9 1073:10,12,22 1077:13 1078:3,4, 16 1079:1,16 1088:7 1089:7 1094:8 1096:12, 14 1097:10,15,18 1098:2,14,16 1099:13,22 1100:17 1102:25 1104:22	911:16 928:14 1042:23 1068:15, 17 1069:2 1100:1	refuel 924:13
receiving 1011:23 1095:20		reference 878:10 888:24 898:10 900:19 910:7 911:7 913:25 917:2 960:19 982:12	refund 1094:2,7
recent 896:16 917:4 1016:22 1020:4 1036:25		referenced 904:22 920:21 1098:18 1099:16	refuting 1090:16
recently 1025:13 1086:25		references 1067:17 1079:5	regard 861:22 864:4 880:17 882:20 886:22 896:7 897:20 898:22 900:18 902:3 904:25 910:13 911:12 937:19 954:19 958:14 968:7 985:21 1101:1
recess 909:21 959:23 1013:9 1058:14 1073:11		referencing 887:14 893:7 971:11 998:23	region 1032:22 1044:17,18 1045:22,23,24 1046:1,8,24 1047:18 1052:5 1082:15
recipe 1048:18	recover 1007:16 1038:9	referred 888:2 940:1 994:22 1038:25 1090:15 1096:14	regions 1020:10, 18 1043:3,6,15 1044:13 1045:8 1049:18
recognize 1026:18	recross 1058:5 1094:15,17	referring 859:25 873:14 875:24 876:5,25 879:6 883:6 890:23 891:19,22 893:8, 16,21 897:11 908:3 942:5 985:25 995:1 999:8 1031:15 1090:25 1091:6, 15	regular 951:20 973:5 1072:8
recognizes 972:3	red-lined 1109:5	refers 869:18 898:13 899:23	regulated 950:9 1000:11
recollection 914:1	redirect 865:16,18 871:22,23 956:25 957:1 975:11,13 1006:22 1008:11, 16 1054:3 1064:13 1076:15 1086:7,11 1094:18	reflect 929:7 1009:14 1012:10	regulating 883:14
recommend 864:18 925:16	reduce 879:25 984:16 986:11 1031:24 1032:2	reflected 882:24 1012:14	Regulations 869:17
recommendation 873:15 880:13 929:19 969:18	reduces 956:15 980:8,19 1020:11 1026:4	reflecting 999:25	Regulatory 873:2
recommended 880:16 938:8,12 949:5 1094:4	reducing 1016:20 1017:19 1018:25	reflects 922:15	reiterates 894:9
recommending 905:7	reduction 941:14 1000:3 1003:24 1009:19 1018:24 1036:3 1092:20	refresh 1027:25	rejected 933:7 934:15
reconcile 911:11	reductions 997:10		related 915:16 1024:6 1059:19 1065:24 1069:23 1076:1 1077:23
record 856:3 857:22 858:1 867:10 868:9,13 874:11,14,16 891:20,22 909:20, 23 946:21 947:17 954:19 959:22,25 961:11,24 962:14 964:21 967:10 978:21 979:8 982:23 985:20 990:7 993:12,15 996:14,15,17 1006:9 1013:8 1014:24 1016:7	refer 908:25		relates 1039:4

relations 869:19	877:4 882:23 938:12	renewables 924:1 1004:4 1044:6	represent 987:14
relative 897:21 913:8 984:1,2 999:22 1000:9 1008:22	Remand 887:17 888:3,13,18,23 889:3 897:11,20 906:19 955:17 992:3 1062:7 1081:2 1097:1 1108:15	renumbered 979:10	representation 1022:13
relevant 873:17 877:6 901:22 904:2	remarks 1095:13 1096:4	reopen 938:17	representing 1021:20 1054:21
reliability 870:17 931:1 1012:9 1023:24,25 1024:2 1039:3 1040:2 1041:3 1046:9,25 1047:8, 22 1048:4 1051:13,19	remedy 1094:11	reorganization 885:19	represents 910:13 913:6
reliable 884:21 885:2 1019:2 1044:9 1047:16 1069:2	remember 879:17 885:18 893:20 920:10 931:22 941:12 946:6 996:22 1071:13 1101:23	repeat 878:2 880:22 938:5 946:4,13 965:6 972:13 996:18,20 1005:14 1011:12 1028:7 1042:16	reproduced 908:10
reliably 879:15 1047:12	remind 1046:22	repeatedly 927:19 968:12	Repsher 899:13 902:18 915:11 982:19 985:18 1009:1 1011:7 1012:4,5,8
relied 879:25 885:5 1024:7 1068:25 1069:13	remote 1013:13	rephrase 948:15	Repsher's 899:14 913:23 924:18 982:19 985:21 998:25 1010:10, 13
relies 885:7	remotely 964:14	reply 1106:8,24 1107:23	request 860:19 861:17 883:19 907:17 908:23 919:10 937:5 1096:17,19 1098:13 1100:20 1101:13,14 1103:10
relieve 1092:11,24	removing 1035:23	report 857:5,13 867:16,23 873:3, 10,11,22,25 887:4,16 888:2, 12,18,23 889:2 897:11,16,19 905:20 906:19,23, 24 914:9 920:22 937:24 955:16 982:19 985:18 986:7 991:7 992:3 998:25 1024:14, 22 1025:3,5,10 1043:6 1047:3 1048:13 1062:7 1081:2 1097:1 1108:12,15	requested 889:17 969:12,24 1098:22 1107:11
relocation 933:25	renew 858:24 863:2 945:15 959:13 981:7 1019:6 1052:20 1061:12 1074:22 1087:15,16 1088:12 1089:6	requesting 861:20,21	requests 886:15, 18,23 888:9 899:8 911:3 971:4 1098:13
rely 925:16 927:2 957:9 1025:6 1069:7 1090:10	renewable 901:17 906:15 945:7 951:4,8 980:2,15 981:21 983:13,14 984:2 985:2 992:17 995:17 999:9,14 1001:23 1002:7,12,18,19 1003:1,23 1004:2, 16 1010:24 1011:18 1017:3 1044:8 1047:6,9, 14,17 1092:16 1093:2	reporter 856:12 872:12 885:12 961:3 976:25 1005:14 1011:11 1058:25 1065:3 1095:18 1106:11	required 883:3,22 884:6 954:20 1047:11
relying 911:13 1097:14		Reports 1096:10	
remain 874:4 935:4 938:13			
remained 938:24			
remaining 890:10 973:8 1082:9,16 1083:17 1086:15, 19			
remains 876:12			

requirements 870:18	1073:6	results 886:20 887:1 902:21 1022:22	rhymes 927:6
requires 861:3	respond 861:17 895:3,23 970:3 1099:14	resume 1015:12, 14	right-of-way 936:25
reservation 989:5	responded 860:19 862:8 1053:11	retail 941:18 988:6 1085:9,13,19,22	rights 882:21 883:3,17,19 884:11 972:8 1004:22 1080:17
resident 933:18	responding 998:9	retirements 1009:23 1047:24	rights-of-way 968:10 970:8
residents 870:5	responds 859:18	retiring 1049:13	risk 906:10 920:2, 3,5,6 1003:20 1037:21 1093:25
resilience 1036:23 1046:10 1047:1 1049:8	response 859:20 860:21 862:9 863:15 864:17 876:21 888:8 893:9 895:15 896:16 907:16 911:3 941:12,25 969:25 1068:3,5, 6,14 1069:18 1079:9,10 1099:17 1100:1, 16 1101:7 1105:2	retrospective 1006:3	risks 997:5
resiliency 870:17 1012:9 1037:17	responses 871:21 894:7 1060:2 1066:7 1078:7	return 909:19 959:21 960:18 1007:17 1013:7	Rocky's 888:8
resolving 997:9	responsible 863:24 884:4 1100:14	revenue 879:13,14 901:24 902:4,7, 12,23 903:8 904:14 906:20 915:12 925:7 926:1 931:5 940:7 942:23 1007:16	Rodriguez 859:21 860:9 877:20 878:20 880:18 882:20 883:1 886:6,14 887:7 890:18
resource 980:12 986:2 987:2 1002:7,19 1003:1 1005:9 1009:10, 23 1010:4 1017:25 1022:2 1039:3,7 1047:20 1049:6 1051:1,8, 20 1052:4,6	rest 899:22 953:13 969:5 1097:7 1100:22	revenues 879:25 881:10 897:6 918:9,23 932:10 936:4,22 957:10, 14	Rodriguez's 859:17 863:16,19 881:21,23 886:10 890:13
resources 910:15 945:9 950:23 951:3,16,21,23 952:4,10 980:2,4, 12,13,15,19,22 983:3,13,16,22,24 984:2,5,6,11,13, 16,20 991:20 995:17,18 997:1, 6,7,11,13,14 999:7,9,14,21,22, 23 1000:1,7,9 1002:7,10,19 1003:23,25 1004:3,16 1009:7 1010:24 1011:1, 19 1017:1 1018:4 1022:15 1039:17 1040:1 1047:12 1049:12,17 1051:8 1052:4	restate 1028:17 1040:15	review 860:7 877:19 902:17 985:16,22 986:19, 21 1048:14 1075:13 1080:5 1098:18	Rolanda 1109:3
respect 965:14	restraints 1038:21	reviewed 860:6 863:19 906:23 954:23 982:3 1006:3 1075:15	role 898:25 920:24
	result 1007:20 1018:7 1020:19 1036:3 1047:25 1093:4	reviewers 899:2	roll 1101:20
	resulted 1027:18 1028:24	reviewing 860:12 898:21 1025:22	Roman 1045:25 1046:7,23
	resulting 935:10 943:2 980:18 1034:9	Revised 1068:15	roughly 921:22 1082:25
			round 1003:15 1022:24 1023:9 1040:12
			route 965:5,10 966:21 967:15 969:24 970:14 971:9 972:18
			routinely 955:25
			rows 970:25

RTO 875:7 876:25 889:9 892:19 895:8 942:19 952:2 957:4	Rush 866:19 867:2,4,11,12 868:8,15,18 869:3 871:24	911:4,10 1015:13 1044:3 1067:1,15 1068:11,12 1073:24 1075:11 1079:4 1106:5	seasonally 983:21 seconds 964:2 section 886:12 889:5,8 905:25 970:8 996:2,6,24 1049:25 1050:6,7 secure 1049:17 security 867:15 869:8,10,13,16,24 870:1,2,4,13 891:6 892:4 919:6 seeings 895:7 seek 932:3 segment 915:24 select 1048:10 self-employed 1015:2 sell 897:5 917:24 918:8 965:20 1080:20 1081:16 seller 922:11,22 923:1,2 941:19 943:5,6 selling 922:11 942:22 send 1038:10 sense 928:23 931:4 937:1 1103:19 sentence 876:3 898:9 982:18 1104:7 separate 894:12 999:10 1000:17 separately 979:11 sequitur 946:18 series 876:9 1086:14 1108:6
RTOS 878:15 1012:23 1092:21	S	scheduled 1003:21 schedules 977:20 978:2,16,22 979:11,12,13,14 1059:19,25 1065:24 1066:5 1077:23 1078:4 1095:3 schools 926:20 Schulte 859:6 874:23 875:2 878:4 885:22 888:11,25 889:1 893:12 895:13,15 896:12,13,19 909:8,11,14 910:1,5 916:16 954:15,17 956:23 981:10,15 985:4 1019:12 1052:25 1061:17 1075:2 1089:22 1098:17 1100:5,7 1101:9, 22 1102:5,15 1104:15 Schulte's 909:24 scope 940:10 screen 976:19 Seam 1033:5,9 seams 1044:6 1046:4 season 912:14 seasonal 912:17 seasonality 912:21	
Rubenstein 858:22 863:1 945:14 981:6 1013:14,15,17,24 1014:17,22 1016:1,8 1028:12 1029:17,21 1054:5,10 1061:9 rule 861:2 1095:1 1098:24 1102:21 1104:18 ruled 920:13 rules 895:16 1094:6 ruling 1072:5,25 1073:6 1100:22 1105:19 rulings 1105:21 run 958:15 1024:5 1095:7,10 1109:21 running 919:22 924:6 1095:22 runs 956:6 Rupp 868:20 916:20,24 927:8 930:9,10,11 932:18 935:20,24 936:13 941:13,25 946:1,7 958:24 998:1,3,4,15,18, 20 1001:8 1035:3, 4,6,11 1057:22 1064:11 1076:12 1086:5 1093:20, 21,24 1095:6,7	S-T-A-H-L-M-A-N 872:14 sacrifice 1107:19 safety 869:10,13 889:6 sake 1107:20 sale 975:21 1009:19 1083:16 sales 903:16 922:14 Sane 899:11 910:12 1090:11 1104:12 Sane's 901:15 909:2,6,10 910:7 911:14 1105:2 Sarah 1013:15 satisfactory 860:23 save 1100:22 1101:11 savings 902:22 1009:21 1010:2 1018:16 1085:7, 19 scale 968:11 992:19 1007:24 1033:6 scenario 914:18 1001:24 scenarios 997:16 scenes 963:23 schedule 879:12		

serve 961:17 988:6 1025:18	1058:10	significantly 1020:16 1036:10	situations 916:2
served 941:19 1047:15	shorter 1107:1	signing 893:2 918:15 1103:25	size 881:5
service 857:4 867:14 873:1 882:22 888:7 950:10 1002:21 1084:10,22 1102:10	shortfalls 1047:25 1048:5 1049:10 1053:17	signs 930:16	Skelly's 1101:15, 25 1102:8
services 922:18	shortly 948:14,19	similar 921:22 964:20,23 978:11 1000:4 1024:8 1040:17 1043:23 1080:4	skip 958:3
session 971:21	shouldering 884:5	similarities 1024:13	skipping 1050:20
set 861:14 888:9 937:25 1025:22 1043:6 1060:6 1066:11 1078:11 1093:12,13 1106:6	shows 990:7 1027:5 1038:6 1047:7	similarly 1000:4,8 1009:9 1018:25	small 1033:3
severe 1012:17 1037:8 1040:21	shut 924:6,10,15	simple 929:18 1035:24 1036:2	smaller 1007:25
severely 997:6	shutting 924:2	simply 896:3 908:5 1023:13 1090:16	Smokey 883:12
share 965:2,8	side 916:7 918:18 1000:4 1038:1 1044:23	simultaneously 905:10 947:25	smoothly 1095:10
shared 965:3,8 972:19 1044:7	sides 936:19,24 1046:3	single 907:7,14 908:6,13 911:14, 23 912:20 948:10 952:14 976:1 1018:13 1020:13 1081:16	snippet 1104:16, 17
sharing 969:7	sierra 858:21 862:25 923:24 945:13 958:25 981:5 1013:11,12, 15 1016:6 1054:4 1061:8,10 1074:20 1089:17	sir 882:8 887:22 892:8 893:6 987:4 1008:3 1021:10 1035:8 1053:20 1062:9,24 1080:8 1082:6	snippets 1102:20
Shashank 899:11	sign 891:16 893:1 918:13,17,22,23 973:16	site 910:23 956:12,14	societal 902:25 915:11 918:4 925:9,11 930:23 931:5 940:4,9 947:15
Shawn 876:9,10 877:10 878:10 887:12	signed 892:15 903:5 928:24 929:6 1009:23 1071:20 1081:16, 20,22 1083:21,24	sites 921:19	solar 907:6,13,23 908:6 910:20,22 911:13 912:5,8, 11,15 914:4 917:17 947:14 950:23 980:12,19 982:1,24,25 983:2,7,8,16,18, 21 984:5,11,15, 18,24 986:1,4,5 992:19 994:11 999:7,23 1000:6 1002:10 1003:25 1009:10
sheet 1109:5	significant 883:21 884:14 893:4 921:8 974:9 980:11,14 984:8, 13 991:18,21 996:25 997:4 1011:20 1018:6 1036:9 1047:9 1049:2 1104:2 1105:2,9	siting 969:24	Solaranywhere 910:23
Shine 879:12,25 904:19		sitting 1034:21	solely 953:18
Shine's 901:2,25 902:15 904:13 1109:4,14,20		situation 1010:11 1055:7	solemnly 856:7 866:21 872:7 960:23 976:20 1014:11 1055:2 1058:20 1064:23
shining 914:15			
shipped 1036:16			
short 909:13 959:19,25 974:21 975:2 1011:3			

1077:2 1087:19	special 1050:17	split 975:16	23,24 954:1
solicitation	specific 864:9	spoke 900:8 960:5	965:21 985:9
1102:4,11	873:18 877:6,16	spoken 1063:6,12	1007:5 1019:15,
solution 901:5,8	878:19 886:3,4	1071:19 1082:1,	21 1053:3,8
904:23,25 905:4,	899:16 902:21	21 1083:1	1061:20 1072:1
6,10,11 947:17	906:24 908:25	sponsor 873:3	1075:5 1079:20,
Solutions 1015:3	922:21 925:7,10	SPP 883:25 884:2,	23 1089:25
sooner 950:4	934:10 953:8	4 912:18 924:24	1108:21
sort 888:22 911:24	966:16 1000:23	925:4 930:24,25	staff's 856:5
1018:21 1023:9	1032:17 1093:7	931:13 999:9,13	857:5,25 862:10
1028:14 1031:5	1097:14	1024:17 1032:21	867:16 868:12
1037:5,25 1041:4	specifically	1036:7 1037:6	873:3 880:21
1043:23 1044:19,	881:13 882:16	1038:3 1043:9,11,	896:24 898:25
22 1045:13	885:7 888:1	14	899:18 900:10,16
1048:18 1050:16,	893:21 898:22	spread 937:17	901:15,21 902:7
17 1105:14	900:25 906:23	980:9 984:13	903:19 919:9,23
sound 914:5	921:16 922:1	spreadsheet	920:24 927:20
932:13	940:7 955:21	939:21	928:23 937:23,25
sounds 914:7	982:11 995:5	SS 911:9	938:6 946:24
1013:24	1024:6,10,12	SS-4 911:4	947:24 948:4
sources 945:7	1033:19 1034:5,	St 883:11	950:19 951:14
992:10	11 1035:22	stability 870:11	952:15 958:2,5
south 995:2	1036:8 1050:8	staff 857:13 862:3	1108:20
1015:6	1053:13 1068:18	866:16,18 867:23	stages 1021:3
southeast	1091:14 1093:5,6	871:2,22 872:3,5	Stahlman 872:6,
1043:19	specifics 971:10	873:10,11,14,21,	13,18,20 874:10,
southwest 910:22	1050:13	25 874:15 876:9	18,24 885:14,23
1002:14 1006:4	speed 910:21	877:9 878:10	893:16 909:25
southwestern	911:18	880:12 881:15	910:6 916:17,19
910:23	speeds 923:9	888:4,7 889:3,9,	935:16 941:4
span 1044:5	955:25 956:3,5,17	19 892:19 897:2	943:14 945:21
speak 920:14	spell 856:11 867:9	899:1,21 900:2	954:11,18 957:3,
935:16 988:16	872:11 927:4	905:2,7 911:3	17,20 999:8
1001:25 1010:21	961:2 976:25	919:13 920:9,13	Stahlman's 894:1
1020:12 1036:11	1058:24 1065:2	925:16 929:10,18,	stakeholders
1046:20 1092:12	spelled 959:2	21 930:2,17	1001:20 1005:17
1093:7	spend 1107:12	931:18 932:2	stand 864:23
speaking 912:6	spending 926:17	936:1,6 938:18	872:6 932:14
921:4,21 926:19	spent 1032:10	947:10,19 948:7,	960:18,22
945:5 966:10	spirit 971:23	11,17,25 949:5,8	1054:22 1058:18
970:5 971:7	spite 933:9	950:22 951:15	1064:22 1076:25
		952:3,11,20	1109:7,15
		953:2,11,13,19,	standalone
			953:14

standard 1039:2 1040:4,6,7,10	906:17 915:10 921:7 924:18 928:1 992:15 993:18 1024:7 1032:18 1081:9	stations 944:20	937:4
standing 871:11 1095:19		status 878:14,22 900:11 955:2,3 958:22 1050:18	strange 920:9
Star 906:8		statute 1068:19 1069:3 1073:8	strangely 880:6
start 869:11,15 924:9,16 925:24 931:15 944:15 982:17 994:1 996:5 1003:5 1013:21 1022:10 1038:7 1041:23, 25 1042:3,4,5,20 1049:2 1058:10 1074:14,16 1079:23	statement 860:2 863:16 875:13 884:19 893:13 894:16,17 895:25 921:2 953:17 965:25 970:15 972:12 990:25 992:12 995:23 1002:3 1026:8 1043:4,12 1044:9 1046:5 1102:16	Statutes 1068:16	strategically 1027:6
start-up 924:9		statutory 1050:5	Strategies 977:13, 14 981:17 1038:5
started 960:17 1033:4		stay 1105:15,16	stream 904:14
starting 881:14 916:6 986:16 1026:3 1027:4	statements 869:12 884:21 943:4 956:22 970:2 1048:2	stemme 858:12, 13,14 862:18,19 940:22,23 959:5 997:22,23 1008:9, 10 1034:17,18 1054:1,2,13,14, 16,18,25 1055:5, 8,9 1056:7,12,15, 19,20,23,24 1057:2,13,24 1058:1,3,6 1064:7,8 1076:6,7 1085:25 1086:1 1090:11 1091:25 1092:1	streams 901:24 902:5,8,13,23 903:8 906:20 915:13 925:7 926:1 968:21
starts 1042:7	states 869:20 870:13 878:13 886:17 889:9 898:5 899:19 911:1 955:24 956:4,10 988:24 989:19 991:12 994:24 995:5 1004:17 1005:2 1044:3 1046:1,9 1090:13,20,22,25 1091:4,5,6,7,9,10, 15,17 1093:12	STENOGRAPHER 885:15 927:3	Street 1015:6
state 867:9 875:22 897:2 900:1 927:23 934:14,21 935:8 936:3 941:24 945:3 961:14 972:17 976:25 987:18 989:11 990:1 995:16,20 1004:21,24 1014:23 1017:21, 23 1023:23 1026:3 1027:5 1031:23 1032:6 1033:23 1042:25 1056:3 1062:25 1070:17 1082:13 1088:6 1091:3	stating 883:2 996:22 1043:13	step 967:11	strike 893:12 894:7,9 896:6,16 1082:12 1098:7, 11
stated 883:17 893:1 895:2	station 861:8 875:16 876:2,15 881:5 889:25 890:1,3,7 897:6 919:4 923:13 929:13 933:23 934:3,17,18 935:2 938:4 944:6,23 1084:14	stepped 1018:11	strong 1020:14 1037:1 1102:9
		stop 924:13 996:8	stronger 1049:13, 20
		stop-and-go 923:10	strongly 1036:4
		storm 931:11 1012:13 1037:8, 13,14,21 1038:5, 7,8,9,11 1040:20, 21,24 1053:11	structure 965:4,9, 17 966:13 972:23 1010:1
		storms 1036:25 1038:3	structures 968:25 969:5
		straight 874:22 888:17	struggling 1036:1
		stranded 931:18	studied 1004:8
			studies 860:10 873:18 875:7,22, 24,25 876:3,5,11, 12,16,17 877:1,5, 6,11,12,15 878:12,24 883:20 884:6 886:7,17 889:5,10,11,24 892:20,21 918:16 919:5 938:20,22 939:3 957:4,5

1024:9 1026:21 1032:14 1048:19 1074:4	submission 973:15	suggested 861:2, 11	886:10 890:15 901:3 902:6 908:22 909:7,10 910:7 925:14 954:23 1088:14
study 876:1,14 879:1 880:1,4 887:2,8,9,13 890:2,10 892:18 902:18 918:4,16 924:22 925:17,25 926:10 927:17 938:24 952:23 953:8,16 954:9 957:4 985:17,20, 21 989:13 1016:23 1020:9 1031:5 1032:19 1033:4,5,9 1039:7 1042:24 1043:4 1044:2 1045:20 1048:9,24 1049:25 1050:4 1067:1,6,12,16, 18,22,24,25 1068:10,11 1069:13 1070:9 1071:25 1072:7, 18 1073:4,6 1075:12,16 1076:1 1079:4,5 1080:6 1104:5,6	submit 857:9 867:19 873:6 963:15 1101:2,5 1109:8,11,16	suit 1102:22	suspect 1036:4
stuff 1095:3	submitted 938:21 961:19 963:14	suited 871:6	sustain 896:5,9 1105:7,11
style 922:6	subscribe 1102:13	suits 960:8	sustainable 974:23
subcommittee 1022:2	subscribed 1002:9	Summary 1045:21,25 1046:8,24	swear 856:7 866:21 872:7 960:23 976:17,20 1014:11 1055:1,2 1058:20 1064:23 1077:2 1087:20
subject 881:19 895:21 896:14,20 906:25 928:10 937:17 989:21 992:6,11,13,21 993:1 994:14 1016:24 1023:20 1025:20,25 1027:15 1042:6 1069:1,9 1095:24	subsection 1068:18,20 1069:2	sun 914:14	switch 996:11
	subsequent 877:3 1063:4 1082:19 1107:2	sunny 907:22 912:23	sworn 856:22 867:5 872:21 961:10 977:8 1014:19 1055:10 1059:5 1065:10 1077:9 1088:2
	substance 1095:4	supplemental 893:10	synchrous 1044:13,14
	substantial 1018:17	supplies 1084:17	synergies 983:2
	substantially 868:3 874:5 920:2 956:3,15 978:11 1047:13 1088:21	supply 906:8 1000:5 1005:9 1009:5 1100:24	system 860:4 884:11 887:1 893:11 913:1,4 1017:20,22 1026:13 1031:17 1040:3 1041:10 1044:12 1046:9, 25 1047:6,8,22 1048:17 1049:5 1051:9 1082:2 1083:21
	substantive 1102:19	support 869:23 870:10 871:1 899:21 920:19 967:18 972:24 973:4 975:23 986:7 1047:10,12 1068:1	synchronous 1044:13,14
	substation 875:12 876:6 937:11,14 989:8	supports 880:12 1105:5	system 860:4 884:11 887:1 893:11 913:1,4 1017:20,22 1026:13 1031:17 1040:3 1041:10 1044:12 1046:9, 25 1047:6,8,22 1048:17 1049:5 1051:9 1082:2 1083:21
	subversion 869:21	suppose 989:3	systems 984:6 1041:2 1070:18 1071:1,6,8,18 1080:24 1081:17, 19 1082:8,20 1084:19
	sudden 1040:23	supposed 1034:9	
	suffice 1051:12	suppress 1011:21	
	sufficient 904:4,5 932:9 1007:16 1010:19 1011:6 1012:21 1039:17 1056:11	surface 969:20	
	suggest 973:7 1036:5	surmise 936:1	
		surprised 1033:1	
		surrebuttal 859:17 860:18 862:7 863:19,23 877:19, 23 879:13 882:2	

T			
	937:2 950:3	962:4,16 1016:8	863:20 864:17,20
	task 1041:1	1061:4 1079:17	866:13,22 867:19,
		1089:8	24 868:2 869:8
T-W-I-T-T-Y	tax 908:18 915:3,4	tendering 962:15	871:8,25 872:8
1059:1	1003:24	tenets 963:17	873:6,10,20
tab 882:4 890:15	TCA 893:3	tension 1005:17	874:1,4 875:4
tabs 909:3	TEA 1067:2,11	tenure 981:16	876:25 877:19,23
takes 975:7	1068:11 1069:12	term 939:19	878:11 879:16,21
1002:24,25	1070:9 1073:4,6	974:21 1039:14	881:4,13,21,23
1003:12	1074:3,4,7	1050:11	882:2 883:2,4
taking 917:16	1075:11 1076:1	termed 1025:14	884:25 887:12
971:8 973:22	1079:4 1080:5	terms 883:7	890:14 896:7,21
986:10 1042:10	tear 924:3,8	906:22,24 966:21	897:25 898:20
1071:19 1084:9,	technical 882:23	967:17 988:20	899:11,13,24
21 1101:17	1040:11 1042:2,3	997:3 1035:25	900:13,14,18,23
takings 967:4	1048:14 1095:18	1036:2 1053:11	901:10,12,16,25
talk 909:15 922:5,	technique 992:9	territory 1047:17	902:6,17 904:14
7 923:7 950:19	technological	terrorism 869:21	905:1 907:1 908:5
957:3 1094:7	963:23	test 902:10 915:11	909:2 910:7
1095:2	technology	947:15	911:12,14,16
talked 882:16	926:24 963:21	testified 856:22	913:23 917:2
936:20 937:3	968:15,16 986:3	867:5 871:10	918:12 919:1
938:17 941:16	1046:21	872:21 876:10	920:21 921:25
970:17 986:6	Tehachapi	880:18 886:6	924:17,18 927:9
1005:8 1035:21	1002:16	923:25 929:12	928:23 930:12
1092:10,14	temperature	938:21 961:10	931:9,17 933:4
talking 865:25	916:11	971:4 977:8	934:6 937:22
869:15 870:21	ten 904:20 959:21	992:15 1014:19	938:9 943:7
882:12 887:21	1039:1,8,9,23	1029:18 1055:10	954:24 957:20
891:25 892:1	1040:6,10,12,14,	1059:5 1065:10	960:24 961:19
896:17 923:4	20,21,22,25	1069:11 1077:9	962:3 963:14
925:18 930:22,24	1041:8,20,21	1088:2 1105:17	964:20 970:11,22
931:1 934:3 951:2	1106:12	testifies 859:21	972:9,14 973:22
953:21 974:20	ten-minute	882:20 910:12	975:18 976:6,21
984:11 1022:9	1058:11	testify 886:2 887:7	977:5,16,19,24
1027:21 1048:4	ten-year 1040:18,	897:3 907:4	978:1,2,6,11,12,
1068:10 1072:2,	19	1035:17	14,16,18,21,23
19 1101:23	tend 983:23	testifying 958:10	979:2,4,12,15
tariff 863:23	1007:24 1009:20	964:15 1028:14	980:5,10,14 982:9
1018:21	1010:2	testimony 856:8	983:18 985:25
tariffs 864:4	tender 858:3	857:9,13,16 861:6	987:16 989:22
Tartan 881:9	868:15 874:18		990:7,13 993:15
903:13 934:6			994:15,16 995:12
			999:16 1001:18,
			22 1003:9 1005:9
			1006:12,16
			1011:18 1013:2

1014:12 1015:9,
13,17,20 1023:21
1024:4,19 1025:7,
9 1026:15,25
1028:13 1031:12,
22 1032:6
1033:22 1035:12
1038:25 1042:21
1043:8 1054:7,14,
24 1055:2,14,18,
23,24 1056:2
1057:6 1058:21
1059:18,25
1060:3,6,8
1062:23 1064:16,
24 1065:23
1066:5,8,11
1067:17,18,19,24
1068:8,12,13,17,
20 1069:12
1070:15,25
1071:14 1073:8
1076:18 1077:3,
23 1078:4,7,11,13
1079:5,6 1087:20
1088:14,18
1090:10,16
1092:9,14
1095:18 1096:15
1097:2,9,12,14,19
1098:1,4 1101:16,
25 1102:21
1103:11,21
1104:12,17
1105:1,3,4,8,9,10
1109:4

Texas 995:4
1002:11 1044:16

text 990:23

theoretical 987:2
999:3

theoretically
989:1,3,6,20

theory 1040:12
1045:15

thing 907:15
969:18 982:9
1048:25 1072:11

things 871:7
875:18 902:9
916:12 920:24
938:2 939:5 940:5
947:8 953:24
954:8 958:17
969:1 974:24
1011:4 1041:13
1045:19 1048:21
1052:1 1074:13
1094:25 1100:14
1107:7

thinking 909:12
1033:8 1051:21
1103:16

Thompson
1061:10 1074:21
1089:18

thought 911:5
925:11 926:8,20
928:12,13 952:18,
19 969:19 1095:8,
9 1096:23
1099:24,25

thousand 875:17

threats 1086:23

throw 975:10
1041:8 1070:2
1094:16

thrown 1055:7,8

Thursday 856:4

tie 989:7 1044:22
1052:11

tied 881:13

Tiger 861:8 870:22
965:5,10 966:7,20
967:14 971:24

till 959:22

time 857:12,22
858:2 861:16
867:22 868:9,14
873:9 874:11,17
875:14 878:17,24
890:1 898:24
903:10 905:8
909:16 913:21
914:15 915:3
916:4 921:18,20,
24 935:11 939:14
946:25 947:1,5
948:19 949:3
954:21 964:3
965:7 973:14,22
975:2 983:25
984:21 986:3
1002:6 1003:12
1015:17,20
1018:7 1030:2
1042:11 1063:18
1076:23 1088:18
1089:2 1095:23
1096:15 1105:14
1107:20

timeline 997:2

timely 910:2

times 904:21
912:5,12,24 922:5
926:11 974:21
1073:25 1099:3

timing 862:7
905:17,19 955:13
983:3 1002:21
1099:1,3,8
1106:14

title 977:14
1068:19 1100:8

titled 889:5 906:1

today 857:15
866:5 868:1 874:4
895:12 929:7
943:22 958:18
964:16 973:23

978:9 1006:12
1014:4 1020:11
1022:14 1035:17
1037:10 1042:11
1043:19 1046:21
1048:16 1056:3
1060:5,7 1066:10,
12 1067:9
1078:10,12
1088:21 1091:10
1092:9 1093:3

told 976:2 1090:4

tomorrow 1101:3

top 997:17
1007:14 1033:9
1074:16

topic 953:15

topics 871:6

toss 1033:11

total 891:6,7
894:24 907:19,25
914:19 930:23
931:9 984:24
987:1 992:16
993:5 994:3,4
1080:20

totality 899:18
900:16

totally 860:1
907:24 933:21
999:10 1038:16

towers 975:2

track 967:10
1006:8

tracking 1097:3

tradition 926:19

traffic 923:10

train 926:7

tranche 1003:4,7,
10 1004:5
1023:10 1025:14,

17,23 1027:12,13 1033:12 1037:4, 11 transaction 1005:22 transcript 898:13, 16 1108:4 transcripts 1097:2 1106:11,14,16,20 transfer 1046:2 1047:21 transitioning 924:7 translate 1009:20 1010:2 translates 1018:4 transmission 860:12 864:13 876:18,19 880:7 882:22 884:24 885:6 893:3 906:11 914:20 915:6,16,20,22,25 918:3 921:8 941:15 944:8 952:14 980:16 981:22 983:13,15 984:3,25 986:8 989:5,14,15 991:14,18,21,25 993:6,16 996:7,25 997:8 1001:23 1002:6,8,12,16, 17,20,22,25 1003:2,4,11,15, 16,19 1004:9,16 1005:5 1006:5,8 1007:23 1009:8 1011:3 1012:15 1016:23 1017:22 1018:2 1019:1 1020:5 1021:24 1022:5,16,23 1023:10 1024:15	1025:11,22 1026:4,13,17 1027:6 1028:5,10 1029:15 1030:6, 17 1031:1,10,13 1032:2,10,20,22, 24 1033:4,6,10 1036:24 1037:1 1038:14 1039:13 1041:11,17,18 1042:24 1045:21 1047:8,15 1048:9, 10,20,22 1049:4, 8,13 1050:12,16 1051:25 1084:9, 10,12 1092:17,23 1093:5,8,13 1099:11 1100:13, 15 transmission-to- transmission 885:25 transmitted 949:12 Travis 1008:13 1019:21 1053:7 treats 965:13 trees 970:25 tremendous 1041:14,15 tremendously 1029:9 trend 1004:1 trial 1098:21 1099:6,8 trigger 880:25 tropical 931:11 true 857:18 868:5 874:7 885:1 978:6 983:21 1005:21 1015:13,23 1025:16,21	1030:24 1052:5 1055:24 1060:3 1066:8 1070:22 1078:7 1083:14, 15 1088:23 1099:5 truncated 911:25 truncating 917:18 919:21 truth 856:9 866:23 872:9 960:25 976:22 1014:13 1055:3,4 1058:22 1064:25 1077:4 1087:21 Tuesday 879:17 905:2 turbines 956:2 turn 875:3 882:3 886:9 896:21 905:23 907:1 908:24 909:1 910:10 955:19 987:15 989:21 994:14 995:11 1013:18,21 1023:21 1024:18 1025:25 1031:22 1049:10 1062:22 1070:14 1082:4 turning 1013:22 turns 936:21 TVA 989:2,7 twenty 1041:14 Twitty 959:9 1058:17 1059:4,9, 18 1061:24 1064:10,15 1071:22 type 918:4 945:3 968:7 970:6 974:11 989:17	1002:24 1012:8 1068:24 types 967:4 974:6 989:5 1020:9 typical 912:15 942:4 956:2 986:1 typically 1002:8 1039:6 1040:15, 16 1048:12 <hr/> U <hr/> U.S. 1024:22 1044:12 1045:4 1049:8 ultimate 1037:5 ultimately 929:6 942:3 unable 1014:2 1047:19 uncertain 892:12 997:3 1009:8 uncertainty 997:10 1104:6 unchallenged 895:24 unclear 876:8 919:16 uncommon 1001:22 underlie 943:4 underlying 941:22 underneath 1038:9,11 understand 892:23 898:25 899:17,25 900:16 908:8 911:22 917:25 919:9 920:23 934:23 947:23 948:15
--	--	--	--

953:10 1020:21 1042:16 1085:15	unverified 895:24	utmost 965:14	violating 1094:6
understanding 860:24 864:3,14 879:20 883:7 888:13 889:18 901:20 908:8 933:11 944:17,21 945:1,2 952:2 982:21 988:17 1037:18 1085:16	update 886:14 890:19	<hr/> V <hr/>	virtually 989:11
understood 881:11 941:17 950:21 952:18,19 999:19 1084:23 1107:17	updated 865:10	vaguely 1050:8	vital 1099:2,4
undertook 1003:16	upgrade 863:17 878:16,23 884:11 937:6,16 996:25	valid 1098:24	vocal 970:5 973:9
underway 891:12	upgrades 891:4 919:18 937:5,8 991:21 997:3 1009:8 1011:2	valuable 1011:22	voice 935:19,20 1014:5
undoubtedly 1033:23	ups 936:15	valuation 1021:3	voices 935:21
unfortunate 1043:5	urgent 1086:24	values 879:13,14 914:10	VOIR 1066:24
unique 916:14	Uri 931:11 1040:19,23 1041:7,13,22 1053:11	valuings 1004:22	volatility 1040:4
United 869:20 870:13 1004:17	USDA 970:17,18	variable 1044:8	voluntary 971:2 973:8,12,17 975:21
unnecessary 1003:7	user 1018:19	varies 956:11	<hr/> W <hr/>
unquote 973:13	usual 1106:12	vast 966:11	wait 963:4 1072:12 1098:6
unrealistic 907:24	Utah 1045:16	vehicle 923:9,10, 15	waiting 958:8 1072:12
unreasonably 907:5	utilities 901:19 942:7 988:6 1036:13 1038:20 1039:16 1049:14 1050:23 1053:10 1093:14	vein 1037:15	waiver 1074:8
unsubscribed 1086:15	utility 922:10,21, 25 923:2,5 928:4 934:10 942:2,14, 15,18,20,25 943:9 953:6 968:7 970:6 992:19 1000:12 1051:4 1059:14, 16,21 1065:19,21 1066:1 1077:18, 20,25 1081:11	velocity 956:11	wanted 862:6 900:24 938:16 960:4 968:25 1038:18 1045:11 1073:13 1074:12 1094:1 1095:7 1107:14
unsupported 893:13	utility's 942:10	verbatim 1102:1	wanting 929:15 968:23
unsure 871:14	utilize 1051:4	verified 978:15,21, 24	washer 1015:4
unsworn 894:10, 11	utilizing 1032:15	verify 904:15 932:16 939:8	watch 1094:10,12
untenable 893:4		version 1041:22 1060:17,18 1078:19,20 1109:3	watching 1094:3
		versus 918:18 927:16 940:8 955:2 966:8 997:14 1005:2	Wayne 1103:12,21
		vertically 942:6,7	ways 1041:12
		viable 936:5	weak 1027:6
		Vice 977:15 1099:10 1100:13	wear 924:3,8
		video 996:13 1013:18,20,22	weather 870:5 916:11 984:6 1012:18 1037:13
		view 861:2	

1038:12 1040:5, 16 1041:6 1047:20,22	White 860:24 864:18	Wisconsin 995:8	workers 975:1
Webex 958:8 962:24 964:6 976:14	White's 860:18 862:7	withdraw 883:24 1102:15 1104:1	working 861:6,7 964:1 969:6 981:21 983:6 1003:3
week 881:21 958:9 963:22 1106:25 1107:1,2,3,8,15, 16	Whiteman 870:20	withdrawal 882:16,18,21,22 883:3,17,19 884:7,11	workpaper 901:3 908:22 940:2 1075:20
weeks 895:22	wholesale 999:18 1000:18 1009:13, 18,19 1018:5	withdrawn 1103:7	workpapers 985:22 986:19,22 1075:15 1080:5
weighted 986:1	wide 1040:15	withdrew 875:22	works 1013:13
west 1044:15,20	WILLIAMS 858:16 862:21 940:25 941:3 943:10 985:8 1019:14 1053:2 1061:19 1075:4 1089:24	witness's 893:13 896:7 993:23 1028:13	worms 938:18
western 906:7,16 950:24 951:17,23 952:11 955:24 956:3 1045:22	wind 906:7 907:6, 7,13,18,21 908:6, 19 910:19,21 911:13,18 912:4, 6,11,16,22,24 913:3 914:4,14 915:2 917:17,21 947:14 950:22 951:3,15,16,21,23 952:4,10,12 955:25 956:2,5,6, 11,12,16,17 980:12,19 981:17 982:1,24,25 983:2,6,8,16,19, 22 984:4,5,6,9,11, 14,17,24 986:4,5 990:3,8 991:7,13, 20 992:18 994:5 999:7,17,18,23 1000:6,19 1002:10,16 1003:25 1009:10 1017:2 1027:8,17 1028:22 1029:8	witnessed 1004:7	worried 918:5 954:1
whatsoever 947:11	winter 912:16 913:2 931:11 1012:13	witnesses 856:6 871:3 873:12 901:4 905:3 947:19 958:2,5, 14,15 959:11,12 974:5 1058:10 1087:11 1095:9, 23 1096:14 1109:15	worry 1045:19
wheel 1063:23 1084:7		wonderful 1106:10	worse 966:21 971:17 1041:9
whichever 883:24		wondering 900:20	worth 908:12
Whipple 859:4 863:7 894:8 945:20,24 954:10 959:4 979:21,25 980:24 1016:12, 15,18 1017:5 1052:17 1058:17 1059:3,8 1060:10, 16,20 1061:3 1064:14,21 1065:7,8,13 1066:15 1068:2,4 1070:23 1074:2, 11 1076:16,24 1077:6,7,12 1078:15,19 1079:9,10,17 1086:8,12 1087:5, 12 1089:12 1102:18 1103:1,4, 16		word 919:2 921:9 993:2 1071:1	worthwhile 1007:17
		words 865:7 904:23 991:23	wound 920:5
		work 885:5 891:7, 11 892:5 914:25 923:20,23 930:6 942:19 963:21 964:1 966:14 967:23 981:25 1005:11 1014:3 1015:2 1069:14 1106:15	wrap 958:17
		worked 908:1 1014:3	written 977:16,19, 23 978:12 1074:8 1092:14 1101:1 1107:19
			wrong 928:12 959:2
			Y
			year 908:9 910:16, 20 911:17 983:23 984:24 1018:16 1022:8 1027:18, 21 1028:2,3,24 1040:22 1041:9, 20,21
			year's 908:12

yearly 1022:10

years 973:3

981:23,25 1002:5

1004:15 1038:17

1039:1,10

1040:20,21

1062:10 1081:15

1086:22

yesterday 900:8,

12 927:19 969:22

970:11,17 972:9,

14 974:4 975:18

1014:3

yield 1034:25

York 1015:6

young 968:23

Z

zone 1002:12