

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

BEFORE THE PUBLIC SERVICE COMMISSION

STATE OF MISSOURI

TRANSCRIPT OF PROCEEDINGS

EVIDENTIARY HEARING

In the Matter of Union)
Electric Company d/b/a Ameren)
Missouri's 4th Filing to)
Implement Regulatory Changes) File No. EO-2023-0136
in Furtherance of Energy)
Efficiency as Allowed by)
MEEIA)

WEDNESDAY, JULY 24, 2024

10:00 a.m.

Governor Office Building
200 Madison Street
Jefferson City, Missouri 65101

VOLUME 5

RON PRIDGIN, Presiding
DEPUTY CHIEF REGULATORY LAW JUDGE

KAYLA HAHN, Chair
MAIDA J. COLEMAN,
GLEN KOLKMEYER,
JOHN MITCHELL,
COMMISSIONERS

Reported By:
Shelley L. Bartels, RPR, CCR

Job No.: 169666

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

MR. TRAVIS J. PRINGLE
travis.pringle@psc.mo.gov
MS. TRACY D. JOHNSON
tracy.johnson@psc.mo.gov
Public Service Commission
200 Madison Street
P.O. Box 360
573.751.4140
Jefferson City, Missouri 65102-0360
For: Staff of the Missouri Public Service
Commission

MS. LINDSAY VANGERPEN
lindsay.vangerpen@opc.mo.gov
Office of the Public Counsel
200 Madison Street
P.O. Box 2230
Jefferson City, Missouri 65102
573.751.5324
For: Office of the Public Counsel

MR. WILLIAM HOLTHAUS
MS. JENNIFER HERNANDEZ
MS. JENNIFER MOORE
jmoore499a@ameren.com
Ameren Missouri
1901 Chouteau Avenue
St. Louis, Missouri 63103-3003
314.621.3222
For: Ameren Missouri

MR. ANDREW J. LINHARES
andrew@renewmo.org
Renew Missouri
3115 S. Grand Avenue, Suite 600
St. Louis, Missouri 63118
314.471.9973
For: Renew Missouri

MR. JOHN B. COFFMAN
john@johncoffman.net
Consumers Council of Missouri
871 Tuxedo Boulevard
St. Louis, Missouri 63119
573.424.6779
For: Consumers Council of Missouri

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

MS. SARAH RUBENSTEIN
srubenstein@greatriverslaw.org
Great Rivers Environmental Law Center
319 N. Fourth Street, Suite 800
St. Louis, Missouri 63102
314.231.4181
For: Natural Resources Defense Council

1 Proceedings began at 10:00 a.m.:

2 JUDGE PRIDGIN: Good morning. We
3 are back on the record in the evidentiary hearing
4 in EO-2023-0136. As I understand it, we are on
5 Earnings Opportunity and Mr. Michels will be taking
6 the stand. If that is incorrect, somebody please
7 correct me. Kind of seeing some nods. Is there
8 anything further before Mr. Michels takes the stand?
9 All right. Hearing nothing, Mr. Michels, if you'll
10 come forward please.

11 (Witness previously sworn.)

12 MATT MICHELS

13 the witness, having been first duly sworn,
14 testified as follows:

15 JUDGE PRIDGIN: And, Mr. Michels, you are
16 still under oath from earlier in the hearing. And
17 so, counsel for Ameren, whenever you're ready.

18 MR. HOLTHAUS: Judge, this is the second
19 time that Mr. Michels has taken the stand and will be
20 the last time for this hearing as well. We already
21 went through the direct on his first appearance, so
22 at this time we tender Mr. Michels for cross.

23 JUDGE PRIDGIN: All right. Thank you.
24 See if we have any cross-examination. I don't
25 believe Renew Missouri's here, but just in case,

1 Renew Missouri? NRDC?

2 MS. RUBENSTEIN: Your Honor, we're here
3 this morning, but we don't have any questions. Thank
4 you.

5 JUDGE PRIDGIN: Thank you. Consumers
6 Council? Staff?

7 MS. JOHNSON: Nothing from Staff, thank
8 you.

9 JUDGE PRIDGIN: Thank you. Public
10 Counsel?

11 MS. VANGERPEN: Nothing from OPC. Thank
12 you.

13 JUDGE PRIDGIN: All right. Thank you.
14 Let me see have any bench questions. Chair Hahn,
15 questions?

16 COMMISSIONER MITCHELL: Not for me,
17 Judge.

18 JUDGE PRIDGIN: Commissioner Coleman? I
19 think, if there are no other bench questions, I think
20 I will have a few.

21 QUESTIONS

22 BY JUDGE PRIDGIN:

23 Q. Mr. Michels, is -- I'm trying to think of
24 a way to articulate this. Is there -- is there any
25 consideration to adjust the earnings opportunity

1 charge if new large capacity and energy result in
2 canceling out any supply-side cost avoidance?

3 **A. Can you repeat question for me please?**

4 Q. I can. Or let me see if I can rephrase
5 it. Is there any way to insulate customers paying
6 for the MEEIA plan from future events that impact the
7 viability of the plan?

8 A. I don't know if there is. I -- I will say
9 that we tend to see that a lot of risks to resource
10 need are in one direction: Large-load additions,
11 accelerated generation retirements. So I think it's
12 more likely that we would need more resources rather
13 than less.

14 Q. I believe Staff Witness Fortson stated
15 that the Company did not model an 800-megawatt
16 single-cycle gas plant in any of its 2023 IRP plans.
17 Could you explain why did the Company did not do
18 this?

19 A. So let me clarify this because I think
20 there's a little bit of confusion on it. So in our
21 integrated resource planning, we do capacity
22 positions. We do them for all seasons, but we key
23 our resource additions off of summer and winter.
24 Winter tends to be controlling these days because
25 there's more of a need for resources during that

1 season.

2 We have also updated our planning standard
3 as we described in our 2023 IRP to include making
4 sure that we have resources to meet customer needs
5 during extreme weather events, so things like Winter
6 Storm Uri, Winter Storm Elliott. And what we found
7 in the winter is that we can see peak demands during
8 those kinds of events that are about 600 megawatts
9 higher than a normal winter peak load. And so we
10 added 800 megawatts of simple-cycle gas into our plan
11 to cover not only that 600 megawatts, but also the 25
12 percent reserve margin that we have to have in the
13 winter which brings the total need to about 750. So
14 we're adding 800 megawatts to -- to balance out
15 that 750 of additional need during the winter.

16 And so when we show capacity positions for
17 normal weather, we exclude that capacity. If we
18 showed them with extreme weather, we would include
19 that capacity because we also need resources to meet
20 our normal weather needs. And so that's what we've
21 done.

22 You'll see in Mr. Luebbert's testimony
23 that they added in that resource, but left the
24 weather as normal weather, which creates a mismatch.
25 And so in my testimony, I corrected that, added --

1 took the 800 out. You can either have both the 800
2 megawatts and extreme weather load or normal weather
3 load and without the 800 megawatts. And so that's --
4 that's the way we handled that.

5 Q. I have a few more questions. You may have
6 already answered them. If so, just please let me
7 know that you --

8 A. Sure.

9 Q. -- that you've already addressed it.

10 If the 800 megawatts single-cycle plant
11 were in the Company's IRP, what impact would it have
12 on this MEEIA application?

13 A. It wouldn't have any as long as you were
14 including both the resource to meet the extreme
15 weather and the additional load related to extreme
16 weather.

17 Q. Is it my understanding that this 800
18 megawatt gas plant is being planned for extreme
19 weather especially in the winter?

20 A. That's correct.

21 Q. Will this plant be dispatched only in the
22 winter?

23 A. It will not. It will not. But it is
24 needed for that higher peak demand.

25 JUDGE PRIDGIN: All right. Mr. Michels,

1 thank you. I think those are all the questions I
2 have. Chair Hahn.

3 CHAIR HAHN: Thank you.

4 QUESTIONS

5 BY CHAIR HAHN:

6 Q. It brought -- what he was asking brought
7 up something. You had mentioned that the plant is
8 needed during winter to meet peak. But I think in
9 the application maybe the demand-side programs, like,
10 are only in the summer. And maybe NRDC's position is
11 they would -- were hoping to see something for demand
12 side or in the wintertime like the thermo --
13 basically we've already based for the thermostats but
14 we're only offering the programs in the summertime.
15 Can you speak to that, or would that be someone else?

16 A. So there are load impacts of our programs
17 in the winter, and that's reflected in our winter
18 capacity position. If you bear with me a second, I
19 can tell you about how much that is. So now, this is
20 the RAP portfolio; it doesn't exactly match what's in
21 the application because the application is
22 implementation, more detailed based on working
23 with -- with our partners. But we showed energy
24 efficiency savings from the RAP portfolio in the
25 winter, winter peak, of 110 megawatts in 2025; 166

1 in 2026; and 222 in 2027. That's energy efficiency.

2 Demand response is relatively small,
3 although we are looking at opportunities to deploy
4 more demand response in the winter. And so that's
5 only six megawatts, seven megawatts, eight megawatts.
6 But, you know, we're getting to about 230 megawatts
7 of load reduction in the winter, and I believe our
8 load reduction from the programs in the application
9 amounts to a little over 300 megawatts during that
10 time. So we're getting a significant load reduction
11 still in the winter.

12 CHAIR HAHN: Thank you.

13 THE WITNESS: Sure.

14 JUDGE PRIDGIN: And, Mr. Michels, I think
15 I might have just maybe one or two more questions.

16 QUESTIONS

17 BY JUDGE PRIDGIN:

18 Q. Whether the gas plant is modeled in the
19 IRP or not, the Company plans on building this plant
20 anyway. Is that correct?

21 A. That's correct.

22 JUDGE PRIDGIN: All right. Thank you.
23 Any further bench questions? Let me see if we have
24 any recross based on these bench questions. I don't
25 believe Renew Missouri is here. NRDC?

1 MS. RUBENSTEIN: No questions, thank you.

2 JUDGE PRIDGIN: Thank you, Counsel.

3 Staff, any -- any cross?

4 MS. JOHNSON: Yeah, just briefly, Judge,
5 thank you.

6 CROSS-EXAMINATION

7 BY MS. JOHNSON:

8 Q. Good morning.

9 **A. Good morning.**

10 Q. Mr. Michels, my question for you is do
11 your capacity balance sheets exclude any other
12 resources from the capacity position?

13 **A. No.**

14 Q. Okay. What about the winter capacity
15 position?

16 **A. No.**

17 MS. JOHNSON: Okay. That's all. Nothing
18 further.

19 JUDGE PRIDGIN: Counsel, thank you. Any
20 redirect? Excuse me, recross. Public Counsel?

21 MS. VANGERPEN: No, thank you.

22 JUDGE PRIDGIN: Thank you. Any redirect
23 from Ameren?

24 MR. HOLTHAUS: None, Judge.

25 JUDGE PRIDGIN: All right. Thank you.

1 Mr. Michels --

2 MR. HOLTHAUS: Judge, at this time --

3 JUDGE PRIDGIN: I'm sorry.

4 MR. HOLTHAUS: -- if there are no further
5 questions for Mr. Michels, we would move to admit
6 into evidence his rebuttal testimony marked as
7 Exhibit 100 and surrebuttal testimony marked as
8 Exhibit 101.

9 And additionally, Judge, we would also
10 move for judicial notice of the 2023 IRP case and the
11 records therein that are currently before this
12 Commission, File No. EO-2024-0020 for the reason that
13 there have been several references by witnesses to
14 the 2023 IRP and the 2023 IRP will support the
15 testimony of the witnesses this week.

16 JUDGE PRIDGIN: All right. Counsel,
17 thank you. And I'm sorry, could you identify
18 Exhibits 100 and 101 again for me please?

19 MR. HOLTHAUS: Yes. Yes, your Honor.
20 Exhibit 100 is the rebuttal testimony of Matt
21 Michels, and Exhibit 101 is the surrebuttal testimony
22 of Matt Michels.

23 JUDGE PRIDGIN: All right. Counsel,
24 thank you. Exhibit 100 and 101 have been offered
25 into evidence. Any objections? Hearing none,

1 Exhibits 100 and 101 are admitted into evidence.

2 (Company Exhibits 100 and 101 were
3 admitted and made a part of this record.)

4 JUDGE PRIDGIN: And then I believe
5 Ameren's also asked the Commission to take judicial
6 notice of File No. EO-2024-0020. Any objections?

7 MS. VANGERPEN: Judge, I just have a
8 question.

9 JUDGE PRIDGIN: Sure.

10 MS. VANGERPEN: Could Ameren identify
11 what parts of the IRP docket they're wanting to take
12 judicial notice of, or is it the entire docket
13 itself?

14 MR. HOLTHAUS: We're -- the entire
15 docket.

16 MS. VANGERPEN: If possible, could OPC
17 have some time to look at that docket later today to
18 see if we would have an objection that -- to the
19 entire docket being judicial notice of? I'm just not
20 familiar with the entirety of the docket.

21 JUDGE PRIDGIN: That works for me. We'll
22 just need to readdress it later in the hearing.

23 MS. VANGERPEN: Okay. Thank you.

24 JUDGE PRIDGIN: All right. Thank you.

25 All right. I believe -- let me go back and find my

1 next witness. And while I -- and while I'm thinking
2 of this, I don't think I addressed this -- I may have
3 addressed this earlier, but I think since we're a
4 little bit behind schedule, we might need to go late
5 this evening to kind of catch up. I just wanted to
6 make sure I made everybody aware that we may be going
7 past 5:00 this evening, so.

8 I believe after Mr. Michels, we would
9 have Mr. Lozano on the stand. All right.
10 Mr. Lozano, if you'd come forward. And you're
11 already under oath, sir.

12 (Witness previously sworn.)

13 ANTONIO LOZANO

14 the witness, having been first duly sworn,
15 testified as follows:

16 JUDGE PRIDGIN: And, Counsel for Ameren,
17 whenever you're ready.

18 MS. MOORE: Yes, your Honor.

19 Mr. Lozano's already been sworn in. I tender him for
20 cross.

21 JUDGE PRIDGIN: All right. Thank you.
22 See if we have any cross-examination for this
23 witness. NRDC?

24 MS. RUBENSTEIN: No questions, thank you.

25 JUDGE PRIDGIN: All right. Thank you.

1 Any questions from Staff?

2 MS. JOHNSON: Nothing further.

3 JUDGE PRIDGIN: Thank you. Public
4 Counsel?

5 MS. VANGERPEN: No, thank you.

6 JUDGE PRIDGIN: All right. Thank you. I
7 don't believe I have any questions. Let me see if
8 anybody else on the bench has any questions. Chair
9 Hahn? If you'll bear with me, Mr. Lozano, I might
10 have a couple questions. Chair Hahn, whenever you're
11 ready.

12 QUESTIONS

13 BY CHAIR HAHN:

14 Q. I was just going through my notes and I
15 know you've been up a few times and I seem to miss
16 you. And since I was told by your counsel to ask you
17 potentially on demand response --

18 **A. Yeah.**

19 Q. -- talk to me about the demand response
20 programs that are in the application now and perhaps
21 maybe why a demand response wasn't expanded to winter
22 seasons maybe as suggested by NRDC.

23 **A. Absolutely. So there are two buckets for**
24 **demand response. We have residential demand**
25 **response, and sometimes that's referred to as**

1 peak-time savings that focused on the smart
2 thermostat, and then business demand response.
3 Residential demand response, we actually recently
4 filed a tariff change, and I believe it was January
5 of this year, maybe January 13th, but I might have
6 that date wrong, which starts to give us that
7 flexibility. We have a team researching that right
8 now to how we can operate in the winter. Mr. Michels
9 started alluding to that. So we are working towards
10 that. And I believe we mention that a little bit in
11 the application how we're working towards that,
12 flushing out those details.

13 On the business side the -- the main
14 reason that we have not been able to get there yet
15 are the one-year applications. Because the
16 applications are working on a calendar year, so they
17 cut off on December 31st of each other year. In the
18 winter season, and the MISO capacity auction goes
19 from December through February, and that is -- that
20 is in conflict with each other. That -- that is one
21 of the reasons, not the only reason, but one of the
22 reasons why we think a multi-year plan is very
23 important.

24 Q. What about the seasons in MISO where
25 you're short on cap -- you know, MISO's zone five is

1 short on capacity. Have you looked at expanding
2 demand response during those seasons or how are you
3 thinking about that?

4 A. We are. So the -- the short answer is
5 that the team that's doing the work right now is
6 looking at the assets that we have, those two
7 programs, as well as looking at other options for
8 how -- how those can continue to provide additional
9 benefit outside of where they provide today.

10 And I should have -- I should have also
11 mentioned, on the business side, we do one event each
12 year in December to ensure that we understand what
13 capability we have going into next year, but that's
14 only one event; it's a short test event. So we're
15 absolutely working towards that.

16 Q. What are -- what's the timeline for
17 working, you know, working towards it?

18 A. In terms of what we know is capable or
19 being able to execute on that?

20 Q. Being able to execute.

21 A. Part of that's going to be dependent on
22 hopefully getting a multi-year plan. That certainly
23 has an impact to it. But in this fall we will have a
24 pretty good idea of what we are able to do with these
25 assets, certainly, hopefully in conjunction with what

1 we may be able to get here with a plan along with
2 that research. Then we will begin executing on that
3 from there.

4 I think we would start to see from there
5 results growth in those assets coming for the
6 following capacity years from there. So maybe said
7 in a simpler way, the 2025-2026 MISO capacity year,
8 you see submissions for that coming in early 2025.
9 If we have some certainty on what we're able to do
10 with this plan, then we can start at least some
11 near-term actions to start building towards that
12 there. And then certainly throughout 2025 we'll
13 continue to build on that for the next MISO capacity
14 year afterwards.

15 Q. Okay. You're going to have to help me out
16 with a little bit of logistics because I'm still new.

17 A. Yes, ma'am.

18 Q. But even if the Commission does -- okay.
19 Let's play out some hypotheticals. If the Commission
20 approves the demand response programs in this current
21 application, would that still give you the
22 flexibility to go ahead and expand the current demand
23 response programs that you have that we're just
24 contemplating?

25 A. Potentially. There is -- there is the --

1 **there is some aspects of growth in this plan for**
2 **demand response. What we're researching right now is**
3 **what we can do in addition to that. So -- so there**
4 **is some, yes.**

5 Q. Okay. So there could be some even if we
6 just go with the demand response programs. If we
7 approve some of the energy efficiency programs, and
8 we can get into Programs later and not others, I
9 guess I'm not -- I'm trying to better understand how
10 the energy efficiency programs have to do with your
11 idea of expanding demand response. So help me tie
12 that together.

13 **A. Maybe it would be helpful to understand**
14 **how the energy efficiency programs impact demand**
15 **savings?**

16 Q. Yeah. I mean, I understand that they're
17 missed out programs, you know, that your current --
18 you know, the Nest thermostat rebates and things like
19 that. But you don't necessarily need those to expand
20 demand -- you don't necessarily need a MEEIA energy
21 efficiency program to expand demand response. So I'm
22 trying -- when you say we need a three-year plan, I'm
23 trying to understand --

24 **A. Yeah.**

25 Q. -- why you need a three-year plan to

1 expand demand response.

2 A. Yeah. I think it might be helpful to
3 understand that one of the reasons why demand
4 response is helpful is because it impacts
5 reliability. And energy efficiency savings or energy
6 savings is one thing that we get from energy
7 efficiency. We also get demand savings from energy
8 efficiency which also happens impact reliability.
9 The numbers I didn't have for Commissioner Holsman
10 the other day, but I do have now, I've looked them up
11 since, are what are the -- what are the demand
12 savings we get from energy efficiency programs.
13 Those are -- I have them here in front of me, but
14 they're roughly 83 for 2025; 80 -- 86 for 2026
15 and 88 for 2027.

16 Q. Megawatts?

17 A. Megawatts, yes, ma'am.

18 Q. Okay.

19 A. And those all positively impact that
20 broader reliability picture as well. Those combined
21 with demand response assets that we have all help
22 this broader reliability picture that we've been
23 discussing.

24 CHAIR HAHN: Okay. Thank you.

25 THE WITNESS: You're welcome.

1 CHAIR HAHN: Appreciate it.

2 JUDGE PRIDGIN: All right. Thank you.
3 Any further bench questions?

4 COMMISSIONER MITCHELL: I do, Judge.

5 JUDGE PRIDGIN: Yes, sir. When you're
6 ready.

7 QUESTIONS

8 BY COMMISSIONER MITCHELL:

9 Q. Forgive me if I'm backtracking a bit here,
10 but I think in our mini openings here I heard from
11 OPC that, you know, their view was that -- that the
12 Company bears no risk in not meeting the energy
13 efficiency targets. And then I think we heard from
14 the Company's position that -- that the Company bears
15 substantial risk in not meeting the energy savings
16 targets. So kind of help me understand from your
17 perspective, what does this risk profile look like to
18 Ameren and what kind of led into your calculus --

19 A. Yeah.

20 Q. -- of risk?

21 A. Yeah. There are -- there are certainly a
22 lot of risks as we talk about this. A couple that
23 come to mind right away is we as a company have
24 foregone other investment opportunities to be able to
25 deliver on this. And if we are not working to

1 specifically deliver on this, the opportunity for
2 benefits are not there. To the extent that the
3 benefits are not there for customers, the earnings
4 opportunity is not going to be there. I think that's
5 something to consider.

6 And from a customer's perspective, the --
7 if not this, then the revenue requirement that
8 you've heard Mr. Michels and others talk about, that
9 roughly \$4 billion, that is a -- that is a material
10 and serious risk for customers as well. Those are --
11 those are probably the two that come to mind right
12 away.

13 Q. I guess I understand that those are a risk
14 to the customer, but how does that translate into
15 risk to the Company? Because I think at the end of
16 the day all the costs are flowing through to the
17 customer the way I understand this to work.

18 A. The -- the risk to the Company of not
19 investing elsewhere which then ties to the plan that
20 we're trying to offer, the int -- preferred resource
21 plan, the integrated resource plan. To the extent
22 that -- and again, I'm not -- I'm not the Company's
23 expert on preferred resource plan, but part of that
24 is us being able to reliably meet the needs of our
25 customers. And I think there is a risk of being able

1 to do that if we're not -- if we're not able to
2 execute on a preferred resource plan.

3 Q. So just help me understand. If we --

4 A. Yeah.

5 Q. -- if we put this basket of programs into
6 place --

7 A. Yeah.

8 Q. -- and they underperform or don't perform,
9 then what happens?

10 A. When you're talking about underperforming,
11 savings are not being realized.

12 Q. Correct.

13 A. Then I think -- I think it would depend on
14 the level of savings not being realized. Then
15 certainly we would have to evaluate options to -- to
16 be able to -- to close that similar to how we would
17 analyze the portfolios.

18 COMMISSIONER MITCHELL: Okay. Thank you.

19 THE WITNESS: You're welcome.

20 JUDGE PRIDGIN: Commissioner Mitchell,
21 thank you. Further bench questions? Chair Hahn.

22 QUESTIONS

23 BY CHAIR HAHN:

24 Q. Are you testifying on the Programs
25 portion?

1 **A. Yes, ma'am.**

2 CHAIR HAHN: Okay. Thank you.

3 JUDGE PRIDGIN: Thank you. Any further
4 bench questions? Seeing none, any recross based on
5 bench questions? NRDC?

6 MS. RUBENSTEIN: No, thank you.

7 JUDGE PRIDGIN: Staff?

8 MS. JOHNSON: Yes, please. One second,
9 Judge.

10 JUDGE PRIDGIN: When you're ready. Thank
11 you.

12 MS. JOHNSON: Thank you, Judge, we're
13 ready.

14 REXCROSS-EXAMINATION

15 BY MS. JOHNSON:

16 Q. Just a few quick questions, Mr. Lozano.
17 Would the earnings opportunity matrix treat demand
18 response events or megawatt reductions for winter
19 versus summer differently, and if so, how?

20 **A. I don't believe it does.**

21 Q. So there's so no distinction of
22 seasonality in calculating of the EO in your matrix?

23 **A. I do not believe there is.**

24 Q. Okay. And then just to follow up on what
25 Commissioner Mitchell was asking, how many

1 shareholder dollars have been invested in MEEIA?

2 MS. MOORE: I'm going to object to the
3 relevance of the question. I mean, the statute
4 itself is designed -- I mean, we can get into a legal
5 argument about what is shareholder property and by
6 virtue of a customer paying a rate. They do not have
7 an interest in -- and we can get into the legal
8 arguments on that. So to the extent it cause -- it
9 calls for a legal question or a philosophical
10 question, you know, I think it's open ended and broad
11 and it's not relevant to the bench questions.

12 JUDGE PRIDGIN: Ms. Johnson?

13 MS. JOHNSON: Really just trying to
14 clarify here. Mr. Lozano stated in his answer to
15 Commissioner Mitchell that they are not able to
16 invest in other areas because they're investing here,
17 and I'm just wondering how much.

18 JUDGE PRIDGIN: All right. I'll overrule
19 the objection.

20 **THE WITNESS: I didn't say we weren't**
21 **able. I said we have foregone other -- other**
22 **investment opportunities. But in terms of how**
23 **much, I think we've identified that. We talked about**
24 **Plan C versus Plan I. But you asked how many**
25 **shareholder dollars have been invested for MEEIA?**

1 BY MS. JOHNSON:

2 Q. Yes.

3 **A. I don't believe any.**

4 MS. JOHNSON: Thank you. Nothing further.

5 JUDGE PRIDGIN: Ms. Johnson, thank you.

6 Public Counsel?

7 MS. VANGERPEN: Yes, Judge, just very
8 briefly.

9 RECROSS-EXAMINATION

10 BY MS. VANGERPEN:

11 Q. Good morning, Mr. Lozano.

12 **A. Morning.**

13 Q. You have testified that the demand
14 response program is broken down into two different
15 sectors: The residential demand response and
16 business demand response. Is that correct?

17 **A. Yes.**

18 Q. And of those two, which is the program
19 that's more certain to result in demand savings?

20 **A. Can you help me what you understand by
21 more certain?**

22 Q. To hit the targets that the Company has
23 set out for itself, just based on program design.
24 And I might be able to break that down a little
25 easier.

1 A. Yeah. I'm -- I'm just trying to think
2 through in my head here. I think what you're asking,
3 and I'm going to throw a phrase out, are you asking
4 what is the reliability of the -- of the assets?

5 Q. Maybe not of the assets, but of the
6 programs themselves. Let me try to --

7 A. Yeah. I -- I would need to check the
8 performance to confirm that. I -- the way I hear the
9 question, what I think you're asking is is what is
10 the -- what is the potential we have under contract
11 versus what is the potential that responds in an
12 event. Is that -- is that the question that you're
13 asking?

14 Q. That -- that is a good -- a good --
15 another good way to put it. Let's --

16 A. I would need to confirm that. I don't
17 have those numbers. I'd rather not guess that.

18 MS. VANGERPEN: Okay. That's all I have
19 for now. Thank you, Judge.

20 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
21 Any redirect?

22 MS. MOORE: Yes, your Honor.

23 REDIRECT EXAMINATION

24 BY MS. MOORE:

25 Q. I have one follow up questions on Chair

1 Hahn's question about the demand-side programs. Can
2 you please walk through the MISO registration process
3 necessary to register a demand-side load?

4 A. For the capacity auction?

5 Q. Correct.

6 A. The general timing of it, I can.

7 Q. Correct.

8 A. I think when you're talking about each
9 capacity year -- and I'm going to -- I'm going to
10 skip over most of the details, but usually kind of
11 that late February of each year is -- is when you
12 need to start committing to numbers. I believe in
13 the March-ish -- and sorry for the general time
14 frame -- but in March of each year is when you're
15 going to need to say what the capability of that
16 asset is. And then in April, sometime in early April
17 is when the results of those auctions come out for
18 June through May of the following year.

19 Q. For winter capacity demand-side programs,
20 how does that timeline work?

21 A. It is the exact same timeline. So that --
22 that timeline effectively at the end of February to
23 early March, you need to understand what your
24 capability is for summer, fall, winter, and spring
25 all the way through spring of the following year.

1 Q. And how does that impact the contract? So
2 if you're going to contract with an industrial
3 customer say for two megawatts of curtailment and you
4 want to register that for the winter auction as well,
5 walk through --

6 A. Yeah.

7 Q. I think you mentioned there was a mismatch
8 between the calendar year --

9 A. That's right.

10 Q. -- and the program year that you would be
11 doing that.

12 So could you please explain that a little
13 bit further?

14 A. Absolutely. So in that February-March
15 time frame when we're committing, if we do not have
16 continuity of programs beyond December of that year,
17 we cannot make a commitment to MISO for winter or
18 spring of that year.

19 Q. And that commitment, how -- what is the
20 time frame for the commitment? So if I --

21 A. Yeah.

22 Q. -- put in 200 -- 2 megawatts for that
23 auction year, does it run from January 1st to
24 December 31st, or is there a different time period?

25 A. The commitment to MISO?

1 Q. Correct.

2 **A. The commitment to MISO --**

3 Q. So when -- yes. When are they wanting you
4 to call the events? What is the time frame for that?
5 If you could put it in perspective --

6 **A. Yeah.**

7 Q. -- so that the timing issue is better
8 understood.

9 **A. The time frame for the whole year is**
10 **June 1st of the current year to May 31st of the**
11 **following year. The time frame for winter is**
12 **December 1st of that year through February 28th of**
13 **the following year.**

14 MS. MOORE: Okay. Thank you. I don't
15 know if that helps. I have no further questions.

16 JUDGE PRIDGIN: Ms. Moore, thank you. I
17 think I might have one more question.

18 QUESTIONS

19 BY JUDGE PRIDGIN:

20 Q. Will the 800 megawatt gas plant that we've
21 been discussing, will that be put into MISO only for
22 winter capacity?

23 **A. I do not know the answer to that.**

24 JUDGE PRIDGIN: Thank you. Any other
25 bench questions? Any recross or redirect based on

1 that one question that I had? All right. Thank you.
2 Mr. Lozano, you may step down. I believe Mr. Fortson
3 is the next witness.

4 (Witness previously sworn.)

5 BRAD FORTSON

6 the witness, having been first duly sworn,
7 testified as follows:

8 JUDGE PRIDGIN: And, Mr. Fortson, you're
9 still under oath. Ms. Johnson, when you're ready.

10 MS. JOHNSON: Thank you, Judge.

11 Mr. Fortson, his exhibits were introduced yesterday,
12 and he'll be up again. So at this time we consider
13 him tendered for cross.

14 JUDGE PRIDGIN: All right. Thank you.
15 Any cross, NRDC?

16 MS. RUBENSTEIN: No, thank you, your
17 Honor.

18 JUDGE PRIDGIN: Thank you. I'm sorry.
19 Public Counsel? I went out of order; I apologize.
20 Public Counsel, any cross?

21 MS. VANGERPEN: No, thank you.

22 JUDGE PRIDGIN: Ameren Missouri?

23 MS. HERNANDEZ: None, thank you.

24 JUDGE PRIDGIN: All right. Thank you.
25 Any bench questions for Mr. Fortson? I will have a

1 few. All right.

2 QUESTIONS

3 BY JUDGE PRIDGIN:

4 Q. Mr. Fortson, thank you. I think I will
5 have a few questions, and the bench may have a few
6 other questions as well.

7 Mr. Fortson, were you here when Mr. Wills
8 testified about the Company's most recent IRP and how
9 the process works?

10 **A. I was.**

11 Q. Okay. I believe in your prefiled
12 testimony you identified what you consider to be
13 flaws in the Company's IRP analysis and especially
14 comparing Plan C and I. Based on Mr. Wills and
15 Mr. Michels' testimony, can you explain your concerns
16 specifically regarding Plans C and I?

17 **A. Yes. So there is a few -- a number of**
18 **concerns. One initially being what was just**
19 **previously discussed with Mr. Michels and the 800**
20 **megawatts, the simple cycle in 2028 and in looking at**
21 **those capacity balance sheets and the exclusion of**
22 **the 800 megawatts. And, you know, as Mr. Michels**
23 **explained, you know, they -- they excluded the 800**
24 **because they also excluded the, what they consider**
25 **the corresponding load that comes with an extreme**

1 winter weather event.

2 Staff had concerns and confusion really
3 around that in giving what we view the capacity
4 balance sheets as in the capacity position to exclude
5 any supply side, especially an 800 megawatt gas plant
6 that is going to be a part of the generation fleet.
7 It -- if you think about comparing apples to apples,
8 I mean, I guess on the surface what Mr. Michels says,
9 you know, at least gives the perception that it makes
10 sense. But to exclude something that we know is
11 going to be there, I mean, there's an application in
12 front of the Commission right now, I mean, that --
13 that -- given Commission approval, it will in the
14 near term be a part of that generation fleet.

15 So excluding, you know, the 800 because
16 of the 600 megawatts. And the 600 megawatts now
17 is -- the 600 megawatts is considered because of the
18 potential of recent history and winter storm events.
19 So we don't know that that's going to happen. It
20 could and it has, but even if it does happen for
21 those few days or I think the 600 megawatts was based
22 off of Storm Gerri, one of the storms, which I think
23 lasted five days, we know that, you know, outside of
24 those five days, that plant is still going to be
25 there, it's still going to be a part of the fleet,

1 it's still going to be called on or capable to be
2 called on. So to exclude it didn't make sense to us.

3 So I sort of preface all that because then
4 once you add that 800 megawatts in, it changes the
5 dynamics of Plan C and Plan I dramatically, and
6 specifically for the DSM, you know, especially
7 outside of those say five days that the 600
8 megawatts, the potential for the 600 megawatt load is
9 there and you've got the 800 megawatts to cover that
10 for the reliability, but the other 300 days, we've
11 still got that 800 megawatt plant which really just
12 diminishes the need for the DSM and the extreme cost
13 of the DSM. That was sort of the main flaw.

14 I was trying to find in my testimony --
15 well, and to build off of that, that then -- once you
16 change the dynamics of, you know, the framework of
17 those plans and you now see based off, you know, our
18 analysis that those plans that were being determined
19 by the Company to -- to being deferred, those plants
20 in the future that are being deferred or avoided
21 aren't there anymore, the need for those plants
22 aren't there anymore. So that then gets to, you
23 know, the issue at hand currently with the earnings
24 opportunity. And with no foregone earnings, no
25 earnings opportunity exists. So those were the two

1 main -- main considerations of flaws.

2 Q. Mr. Fortson, thank you. I believe in
3 your surrebuttal you stated that the Company didn't
4 model the 800 megawatt gas plant in its 2023 IRP
5 plans. Can you explain why the Company did that?

6 A. So I guess to be clear, and I think
7 Mr. Michels explained or attempted to explain, I
8 think to be clear, I -- I don't want to say they
9 didn't model it, but when we look at these capacity
10 balance sheets that I was just referring to, you
11 know, the main illustration of those are to show, you
12 know, the expected load and peak load and the
13 expected capacity to be able to cover that load and
14 the additional capacity that will be needed to cover
15 current and future load. So I think the main
16 consideration here is not including the 800 megawatt
17 in the illustration, the overall demonstration of the
18 need for that 800.

19 So I think the way Mr. Michels tried to --
20 was explaining it was they illustrated it based off
21 of normal weather, normal conditions. But even
22 when there's normal conditions, we're going to have
23 the 800 megawatts. So I think Mr. Michels was trying
24 to attempt, you know, you know, show an apples-
25 to-apples sort of comparison when I just don't

1 believe that's -- that's the reality when the 800
2 megawatts is going to be there.

3 So I think they've -- they've modeled for
4 it and shown the need for it in the case of an
5 extreme weather event, but then not including that
6 into the Company's position and to sort of an
7 illustration of reality is where I -- there's a
8 disconnect.

9 Q. And I think you already answered the
10 question, but just in case, is it your understanding
11 that plant would be dispatched only in the winter, or
12 would it be available year-round?

13 A. I will believe it would be available
14 year-round. I don't know why it would just be
15 specific to a season.

16 JUDGE PRIDGIN: I think those are all the
17 questions I have. Chair Hahn, any questions?

18 CHAIR HAHN: Thank you.

19 QUESTIONS

20 BY CHAIR HAHN:

21 Q. Are you familiar with the MISO zone five
22 capacity auction?

23 A. I have limited knowledge. I would
24 actually defer that to Mr. Luebbert to have probably
25 more knowledge on that.

1 Q. Sounds good. I think on a different
2 issue, issue one, you basic -- I think we've
3 discussed this before potentially and tell me if my
4 summary of your testimony prior was right or how it
5 needs corrected. But my notes say that basically,
6 you know, if they would have included the 800
7 megawatts, we wouldn't be avoiding any capacity costs
8 under this plan and if there are no avoided capacity
9 costs, there wouldn't be any missed earnings
10 opportunities. Did I say that right, or is that --
11 tell me -- tell that to me in the right way.

12 A. **Mostly right. Based off the analysis that**
13 **Staff did, if you delay implementation of DSM or of**
14 **MEEIA for a substantial amount of time, potentially**
15 **out to 2034, there is a potential for deferring what**
16 **I think was a plant potentially needed for -- in 2037**
17 **or defer the plant for a few years. So -- so nothing**
18 **in the near term or even relatively mid term, but.**

19 And for purposes of MEEIA Cycle 4, I would
20 say absolutely is it is not a loan deferring
21 anything. If you take Cycle 4 coupled with a
22 Cycle 5 and a 6 and 7, you may defer something out
23 that far, but I think our analysis was more you don't
24 need 4, 5, 6. Maybe -- well, a 4 several years out
25 could do something maybe to a deferral, but.

1 Q. And the cost of this plan is, I think I
2 saw yesterday in Dr. Marke's testimony, \$521 million.
3 Can you tell me the cost of the gas plant that is
4 currently in front of us as a CCN?

5 A. Oh --

6 Q. I recall around 800 million, but I can't
7 be exact.

8 A. I don't know for sure. It would be around
9 a billion dollars, but to say for sure, that might be
10 something that Mr. Luebbert may know as well a little
11 more specific.

12 CHAIR HAHN: Thank you.

13 JUDGE PRIDGIN: Chair Hahn, thank you.
14 Any further bench questions? I think I might have
15 one more.

16 QUESTIONS

17 BY JUDGE PRIDGIN:

18 Q. Mr. Fortson, would it make sense to only
19 bid this 800 megawatt gas plant unit into the winter
20 capacity auction? And why or why not?

21 A. My opinion or my thoughts on that is no.
22 This plant, if approved, will be in rate base and
23 customers will be paying for it year-round, so it
24 should be available for customer benefit or for
25 reliability to customers year-round.

1 JUDGE PRIDGIN: Mr. Fortson, thank you.

2 Let me see if we have any recross based on bench
3 questions. Public Counsel?

4 MS. VANGERPEN: No, thank you.

5 JUDGE PRIDGIN: NRDC, any questions?
6 Hearing nothing, Ameren Missouri?

7 MS. HERNANDEZ: A few, thank you.

8 RECROSS-EXAMINATION

9 BY MS. HERNANDEZ:

10 Q. Would you agree with me, Mr. Fortson, that
11 the cost of the proposed simple-cycle plant is
12 estimated at about \$1 billion?

13 A. **That sounds right, subject to check.**

14 Q. And if you believe that the DSM program
15 should be excluded from our plan, why would you
16 propose excluding DSM that's cheaper versus a one
17 billion plant?

18 A. **So I think simply put, the \$1 billion
19 plant is an absolute and we know that's going to be a
20 part of Ameren's fleet in the near future with the
21 application in front of the Commission right now. If
22 approved, that billion dollars is, again, is an
23 absolute and it also comes with some reliability
24 benefits.**

25 I kind of see the two as separate inside

1 because the -- the DSM -- the MEEIA application is,
2 you know, talking about deferring plants in the
3 future which, again, we disagree with those deferrals
4 or avoidance. So if -- if the hundreds of thousands
5 of dollars of MEEIA application isn't going to defer
6 anything and bring benefits to customers, then
7 there's -- I mean, it -- it doesn't make sense to
8 support an application like that.

9 Q. But the simple cycle hasn't been built
10 yet. Correct?

11 A. That's correct, but it's anticipated to.

12 Q. And nor has it been approved by the
13 Commission?

14 A. That's right.

15 Q. And if Ameren Missouri needs to commit the
16 simple cycle for extreme weather capacity needs,
17 would you agree that we do need another resource to
18 meet normal load capacity needs?

19 A. Can you help me understand that or
20 rephrase it?

21 Q. Well, if we're using committing the simple
22 cycle to meet extreme weather needs and we're short
23 on capacity, we would need another resource to meet
24 normal weather needs.

25 A. Above and beyond the 800 megawatt simple

1 **cycle?**

2 Q. Yes.

3 **A. I don't believe so.**

4 Q. So let me ask -- maybe try to clarify my
5 question a little bit. So if we use the simple cycle
6 to meet normal load and we have an extreme weather
7 event, we would need another resource to meet that
8 extreme need. Would you agree with that?

9 **A. So the 800 megawatt simple cycle is what's**
10 **being used to meet the extreme winter weather event.**
11 **Is that what we're talking about?**

12 Q. Correct. But if we committed that to use
13 for normal weather, we would still need a resource to
14 meet an extreme weather event.

15 **A. I'm -- I'm really confused. So the 800**
16 **megawatts is being considered to cover reliability**
17 **for an extreme weather event. Absent that, you would**
18 **be looking at normal weather. Are you asking if**
19 **during an extreme weather event, something else is**
20 **still needed to cover everything else? Yeah, I'm --**

21 Q. Correct.

22 **A. -- struggling --**

23 Q. Because you're -- you're proposing that
24 the Commission not approve our demand-side management
25 program, so those would be excluded as a future

1 resource.

2 **A. Correct.**

3 Q. So if we're using the simple cycle to now
4 meet normal weather needs, we still need another
5 resource to meet an extreme weather event.

6 **A. But you're not using the 800 megawatt
7 simple cycle to -- it's not intended to meet normal
8 load. It's intended to meet extreme load.**

9 Q. Just one moment. Thank you. Okay. Let
10 me -- I think we're kind of talking past one another.

11 **A. Okay.**

12 Q. And so I'm just going to try to ask this
13 again in another way. You're saying that the 800
14 megawatt simple-cycle plant can be used for normal
15 weather loads. But if we have an extreme weather
16 event and DSM programs are removed, we're using
17 the 800 megawatt to meet what was the normal weather
18 load, but we don't have another resource to meet the
19 gap in that extreme weather event.

20 **A. I'm not trying to be difficult; I'm really
21 trying to understand the question so I can give you,
22 you know, an appropriate answer. So when your
23 question -- you're saying that I or Staff is saying
24 that you're using the 800 megawatts to cover normal
25 weather -- maybe this goes back to including the 800**

1 but not including the 600. But I'm still not sure
2 that it makes sense for those -- for those few days
3 that there might be extreme weather in the winter,
4 you've got the 800 megawatts for reliability. I
5 guess I'm just struggling, still struggling.

6 MS. HERNANDEZ: Could I have an exhibit
7 marked please, your Honor?

8 JUDGE PRIDGIN: Certainly.

9 MS. HERNANDEZ: We're trying to determine
10 if this is confidential, and we'll have to go in
11 camera. May I approach?

12 JUDGE PRIDGIN: You may.

13 MS. HERNANDEZ: Thank you.

14 Should this be the one the witness uses?

15 COURT REPORTER: That's fine.

16 MS. HERNANDEZ: Bill, do we have any more
17 of these? Sorry. We're trying to see if we have
18 more copies. Sorry. We didn't expect to use this
19 and we didn't print enough copies, but this is our
20 slide deck that we provided.

21 MS. JOHNSON: We're going to need a few
22 minutes to look at it.

23 MS. HERNANDEZ: Sure.

24 MS. JOHNSON: Judge, Staff is going to
25 need a few minutes to review this.

1 JUDGE PRIDGIN: Sure.

2 MS. HERNANDEZ: It's September 14, 2023.

3 JUDGE PRIDGIN: If it helps, I can
4 volunteer my copy if anybody else needs to review it.

5 MS. HERNANDEZ: If you don't mind, Judge.
6 I apologize again for are not having enough copies.
7 May I approach please?

8 JUDGE PRIDGIN: Certainly.

9 MS. HERNANDEZ: I'll just have OPC look
10 at that and give that back to you.

11 DR. MARKE: What page?

12 MS. HERNANDEZ: Twenty-three in
13 particular.

14 COMMISSIONER MITCHELL: Judge, what pages
15 are important here?

16 JUDGE PRIDGIN: I'm afraid I don't know.
17 Ms. Hernandez, can you answer Commissioner Mitchell's
18 question?

19 MS. HERNANDEZ: Page 23 in particular.

20 COMMISSIONER MITCHELL: Thank you.

21 JUDGE PRIDGIN: Counsel, I'm not trying
22 to rush you, do we need to take a break for counsel
23 to look over this exhibit? I do want to give you the
24 time that you want.

25 MS. JOHNSON: Judge, Staff's of the

1 opinion that if they're going to enter the entire
2 slide deck, we do need more time please.

3 JUDGE PRIDGIN: Okay. Let's go ahead and
4 take a break then. Will ten minutes suffice?

5 MS. JOHNSON: We can try to read 36
6 slides in 10 minutes.

7 JUDGE PRIDGIN: Okay. How about 15
8 minutes?

9 MS. JOHNSON: Okay. Thank you.

10 JUDGE PRIDGIN: We'll go back on the
11 record -- I show it's roughly five after 11:00.
12 We'll go back on the record at 11:20. Thank you.
13 We're off the record.

14 (Off the record.)

15 JUDGE PRIDGIN: Good morning. We are
16 back on the record. We've had a 15-minute break to
17 allow counsel to review an exhibit, and I believe,
18 Ms. Hernandez, you were still questioning
19 Mr. Fortson.

20 MS. HERNANDEZ: Yes, thank you.

21 JUDGE PRIDGIN: Whenever you're ready.
22 And I'm sorry. Has Counsel -- maybe I should ask
23 this: Has Counsel had enough time to review that
24 exhibit?

25 MS. JOHNSON: Staff is satisfied. Thank

1 you.

2 JUDGE PRIDGIN: All right. Thank you.
3 I'm sorry, Ms. -- Ms. Hernandez, when you're ready.
4 Thank you.

5 MS. HERNANDEZ: Thank you.

6 BY MS. HERNANDEZ:

7 Q. You would agree with me that DSM is in our
8 preferred plan right now. Correct?

9 **A. Yes.**

10 Q. And if you assume that peak normal load
11 is approximately 6,000 megawatts and we forego the
12 plan resources in the current plan, that being DSM,
13 we have to use the proposed simple cycle to meet
14 that 6,000 megawatt need. Correct?

15 **A. Can we take a step back and kind of slow
16 that down and break it out?**

17 Q. Sure. Let's just go back to where we
18 started. So energy efficiency demand-side management
19 is in our preferred resource plan today. Correct?

20 **A. At the RAP level, yes.**

21 Q. Okay. Now, if you were to assume that the
22 peak normal load is 6,000 megawatts.

23 **A. Okay.**

24 Q. And we have to forego the DSM resources
25 that are in the current plan.

1 **A. Okay.**

2 Q. We would need to use the simple cycle,
3 proposed simple cycle to meet that 6,000 megawatt
4 need. Correct?

5 **A. Just based off this discussion, I'm not**
6 **visualizing this. I'm not -- I'm not sure.**

7 Q. Well, let's -- you have a copy of the --

8 **A. I do.**

9 Q. -- Exhibit in front of you. Right?

10 **A. Yes.**

11 Q. Turn to page 23.

12 **A. Okay. I'm there.**

13 Q. And in your testimony on, let's see,
14 rebuttal testimony, page 20, line 4, you speak about
15 a meeting that you had September 14th, 2023. I
16 apologize. So, in -- it's still September 2023, but
17 you met with Ameren Missouri to discuss the -- our
18 IRP filing.

19 **A. Are you still saying that's in my**
20 **testimony?**

21 Q. I think you're -- I apologize. I think
22 you're referencing a different meeting in your
23 testimony.

24 **A. Okay.**

25 Q. So my question to you is you did meet with

1 Staff -- with Ameren Missouri in September of 2023 to
2 discuss Ameren Missouri's IRP filing?

3 **A. This presentation is dated**
4 **September 14, 2023, so I -- I can only assume that we**
5 **had that -- a meeting on that day.**

6 Q. Okay. And you were in attendance?

7 **A. I most likely was.**

8 Q. Okay. And on page 23, and this might help
9 with the example we were trying to walk through,
10 today our -- this slide shows our capacity position
11 with extreme weather. Correct?

12 **A. It says, Winter capacity position MISO RA**
13 **extreme weather preferred plan.**

14 **So I'm not sure exactly. Are you saying**
15 **this is Ameren's preferred plan illustrated in the**
16 **chart?**

17 Q. Correct. For extreme weather.

18 **A. Based off the words on the page, I take**
19 **your word for it.**

20 Q. And you've already agreed that DSM is in
21 our preferred plan, so would you agree with me that
22 we -- that Ameren Missouri needs another resource to
23 meet an extreme weather event?

24 **A. I apologize. This is going to go back to**
25 **my confusion earlier. I don't know how to directly**

1 **connect the two based off your question.**

2 Q. Okay. So if you could assume that we
3 have a peak normal load of 6,000 megawatts and we
4 have to forego the DSM and use the simple cycle to
5 meet the 6,000 megawatts of the normal load, we would
6 need another resource if our -- we would need another
7 resource to meet an extreme weather event because the
8 need would now be above 6,000 megawatts?

9 A. Now I'm trying to connect the question to
10 the illustration. What -- where can I -- where's
11 the 6,000 come into play? We're just assuming that?
12 Is that --

13 Q. That's about --

14 A. -- something I can see here visually?

15 Q. The 6,000 megawatts is Ameren Missouri's
16 peak normal load.

17 A. Okay. So we assume 6,000. Okay.

18 Q. All right. And we're using demand-side
19 management in the preferred plan to meet that 6,000
20 megawatt load in normal weather conditions.

21 A. I think we established DSM is a part of
22 the preferred plan.

23 Q. Okay. And we're using that DSM to meet
24 normal peak load conditions.

25 A. I don't know if I can say that

1 **confidently. I mean, DSM is part of the preferred**
2 **plan.**

3 Q. Well, let's -- can you -- can we just walk
4 through the hypothetical then. So assuming our peak
5 normal load is 6,000 megawatts.

6 **A. Okay.**

7 Q. Demand-side management is in our current
8 preferred plan.

9 **A. Okay.**

10 Q. And we can no longer use DSM to meet that
11 peak normal load, so we have to use the simple cycle
12 to meet the 6,000 megawatts. All right? And at the
13 moment assume that that the resources are just
14 enough, Ameren Missouri's resources are just enough
15 to meet that 6,000 megawatt need. Would you agree
16 with me that Ameren Missouri would need another
17 resource to meet an extreme weather event?

18 **A. I don't -- I don't even know if in this**
19 **type hypothetical I can go so far as to play along.**
20 **DSM's a part of the preferred plan. Is it being used**
21 **to meet normal load. It's a part of the plan, and**
22 **there is a load. Are you using the 800 megawatt**
23 **simple cycle -- 800 megawatt simple cycle, if**
24 **approved by the Commission, will be a part of the**
25 **Ameren Missouri capacity fleet. I don't -- I**

1 don't -- I just don't -- I don't know that -- that I
2 can do much more. I mean, in looking at this
3 colorful graph and lines and bars without any
4 underlying work papers and numbers being jumbled on
5 the page, I'm -- I'm just becoming -- more so
6 becoming a loss as to the question and the
7 illustration and how to even respond.

8 JUDGE PRIDGIN: Ms. Hernandez, I'm
9 getting the sense that he just doesn't know the
10 answer to your questions.

11 MS. HERNANDEZ: If I could just ask a few
12 more questions, I won't take too much longer.

13 JUDGE PRIDGIN: Thank you.

14 BY MS. HERNANDEZ:

15 Q. Can you agree with me that if Ameren
16 Missouri does not do -- or a DSM program is not
17 approved for Ameren Missouri, the load will be higher
18 for Ameren Missouri without those DSM programs?

19 A. I don't know if I could absolutely
20 agree given the assumptions within DSM, the
21 criticisms we, Staff, has of DSM and what effect that
22 really has on load. I -- I can't sit here and say
23 that it is or by any really substantial amount.

24 MS. HERNANDEZ: Okay. Thank you.

25 JUDGE PRIDGIN: Ms. Hernandez, thank you.

1 I do think I have a few more questions and I'll
2 certainly allow time for more bench questions and
3 recross and redirect.

4 QUESTIONS

5 BY JUDGE PRIDGIN:

6 Q. Mr. Fortson, if you know, what would be
7 the expected life of this 800 megawatt gas plant that
8 we've been discussing this morning?

9 A. That may very well be on the record in a
10 docket somewhere. I want to say -- I want to say 50
11 years. I don't know if -- how accurate that is,
12 but it would -- I think I can confidently say more
13 than 30 years.

14 Q. Okay. If putting that 800 megawatt gas
15 plant into service were deferred by four to five
16 years, what would be the value of that deferral?

17 A. I don't know for sure. That would take
18 certain calculations and assumptions or -- and I
19 don't know if parties could agree on what that would
20 be, but I can't sit here and tell you exactly what
21 value that would have.

22 JUDGE PRIDGIN: I appreciate it. Thank
23 you. Further bench questions? Hearing none, any
24 recross based on my questions? Public Counsel?

25 MS. VANGERPEN: No, thank you.

1 JUDGE PRIDGIN: NRDC?

2 MS. RUBENSTEIN: No, thank you.

3 JUDGE PRIDGIN: Ameren Missouri?

4 MS. HERNANDEZ: No, thank you.

5 JUDGE PRIDGIN: Ms. Hernandez, thank you.

6 Redirect?

7 MS. JOHNSON: Yes, please, Judge.

8 JUDGE PRIDGIN: When you're ready.

9 REDIRECT EXAMINATION

10 BY MS. JOHNSON:

11 Q. Mr. Fortson, thank you for your answers
12 thus far. I want to start with something simple just
13 to clarify. Is it Staff's opinion that this MEEIA
14 Cycle 4 application will defer the simple-cycle plant
15 that we've been talking about?

16 A. **No, it will not defer it.**

17 Q. And the cost impacts of that plant on
18 rates?

19 A. **Are going to be what we discussed earlier,
20 say the 800 million to a billion dollars.**

21 Q. Okay. All right.

22 Just one second, Judge.

23 Okay. I'm going to try to make this
24 clear, Mr. Fortson, so bear with me. If you need any
25 details, please ask me for them.

1 **A. Okay.**

2 Q. So we're talking about the exclusion of
3 the simple cycle in 2028 regarding capacity balance.

4 **A. Okay.**

5 Q. As far as you know, does that contradict
6 the treatment of all other plants in the Ameren
7 fleet?

8 **A. Absolutely.**

9 Q. How so?

10 **A. If I understood the question, excluding a**
11 **plant that is anticipated to be online in a part of**
12 **the fleet treats it differently than the other**
13 **current and anticipated plants that are included in**
14 **the capacity position of Ameren Missouri.**

15 Q. Okay. And that fleet of Ameren, all of
16 those plants, that includes several other plants that
17 have peak times. Correct?

18 **A. Yes.**

19 Q. Okay. I have some follow up about if DSM
20 is not approved for Ameren.

21 **A. Okay.**

22 Q. Okay. So will load be higher without DSM?

23 **A. No.**

24 Q. Okay. So whenever you were referring to
25 Staff's concerns with Ameren's projections and

1 assumptions in Cycle 4, can you clarify the concerns
2 you have with the DSM impacts and whether it would or
3 would not impact load?

4 A. Help me with that. Can you do that one
5 more time?

6 Q. Yeah. Okay. So I want to clarify that
7 when you discussed your concern with Ms. Hernandez
8 about demand-side impacts, you said you weren't sure
9 if you could agree that, to her question, it did
10 increase load if there were no DSM plans approved. I
11 want to go over Staff's concern with Ameren's
12 projections and assumptions for Cycle 4 regarding
13 that DSM impact.

14 A. Sure. So -- well, I guess initially I
15 would say, you know, the -- the concern -- when we
16 were talking about the winter capacity position and
17 kind of mixing and matching this MEEIA application
18 and the IRP, in the preferred plan, and the
19 assumptions used in the IRP for that winter capacity
20 position, as far as I'm aware, to my knowledge with
21 the application and what was supplied or, you know,
22 provided to Staff based on assumptions, a lot of the
23 focus when we talk about MEEIA is summer impacts.
24 And we don't -- the focus isn't on winter or spring
25 or fall, so the seasonality really is called into

1 questions as to, you know, is DSM, any level of DSM
2 going to impact the IRP and the capacity -- capacity
3 position presented in the IRP based off a separate
4 filing that likely does not use the same or even
5 similar assumptions and, in fact, assumptions that
6 are more focused and based on summer impacts than
7 winter impacts.

8 So we start getting more than apples to
9 oranges sort of discussion as to can we use what
10 we've been provided and what Ameren has presented in
11 the MEEIA case to accurately represent anything as
12 far as what was filed in the IRP as far as the winter
13 capacity goes and trying to somehow connect, you
14 know, the assumptions used in the MEEIA application
15 to the assumptions used in the IRP, in the preferred
16 plan.

17 So there is a disconnect. It may be sort
18 of subjective as to what that disconnect is, but it's
19 hard to determine what, if any, DSM impacts are going
20 to have -- or DSM is going to have an impact on that
21 winter capacity position.

22 And then we get further -- further along
23 with concerns of the timing of additions and removals
24 of supply side, the magnitude of -- of the additions
25 and subtractions and the -- you know, we've talked

1 through or at least, you know, Staff has presented
2 concerns over assumptions in the IRP, but we've got
3 the same sort of concerns with the MEEIA application
4 and some of those concerns are the same, but then
5 some of them, you know, some of them overlap and some
6 of them are completely different when looking at
7 certain assumptions for what MEEIA is actually being
8 modeled for as what the IRP would show that it was
9 likely intended for. I'm sorry if I got off track
10 there, but.

11 Q. No. I appreciate you going into the
12 details. Thank you. I just have one more
13 clarification. So there's been a lot of discussion
14 regarding the 2028 simple-cycle 800 megawatt. I want
15 to clarify. To your knowledge, that's an open docket
16 and Staff are still reviewing that application and
17 have not put forward a recommendation on that.
18 Right?

19 A. No. That's a good clarification to make,
20 and I think Ms. Hernandez was trying to make that
21 clarification earlier. Some of my responses were
22 sort of based off the -- were based off that being
23 approved and being a part of the fleet. So for
24 clarifying purposes, that is an open docket in front
25 of the Commission that Staff has not taken a position

1 on and the Commission obviously has not ordered on.

2 MS. JOHNSON: Thank you for the
3 clarification. Nothing further.

4 JUDGE PRIDGIN: Ms. Johnson, thank you.
5 I think we have a few more bench questions. Chair
6 Hahn.

7 QUESTIONS

8 BY CHAIR HAHN:

9 Q. To pick up on where Ms. Johnson left off,
10 when was that application for that CCN made roughly?

11 A. If you give me a moment, I think I have
12 that in testimony. And you're talking specifically
13 about the 800 megawatt simple cycle?

14 Q. Yes.

15 A. I have a footnote on page 8 of my direct
16 that says on February 27th, 2024, Ameren filed its
17 notice of case filing.

18 Q. So then --

19 A. That was at least giving notice.

20 Q. That was the notice.

21 A. That was the notice.

22 Q. But the actual application with the
23 testimony, when was that?

24 A. Since this was a 60-day notice, I'm -- I
25 assume it was roughly 6 -- or 60 days or shortly

1 thereafter, sometime late April, early May. I could
2 be off on that. Others -- other witnesses following
3 me may know specifically.

4 Q. How long does it typically take to go
5 through the CCN process for a plant like that?

6 A. Recent cases, recent history would show, I
7 don't know that we've completed one in less than
8 several months and up to, from beginning to end, I
9 think there's a likelihood it could be several months
10 to some amount over a year.

11 CHAIR HAHN: Okay. Thank you.

12 JUDGE PRIDGIN: Chair Hahn, thank you.
13 Any further bench questions?

14 COMMISSIONER MITCHELL: Yeah, just one
15 for me, Judge.

16 QUESTIONS

17 BY COMMISSIONER MITCHELL:

18 Q. So just in a big, big picture, do you
19 believe the utility's position is long or short with
20 or without the MEEIA program?

21 A. Well, depending on, you know, which --
22 what assumptions and, you know, what analysis you
23 rely on, but based off the analysis that we have done
24 and including in the 800 megawatt simple cycle again
25 that is anticipated to be online in 2028 and

1 especially absent any extreme weather event
2 definitely of the, you know, depending on the
3 magnitude, but if you -- again, the unknowns really
4 play into that and, you know, the magn -- if an
5 extreme weather event were to happen and what
6 magnitude it is, I believe with, you know, as
7 analyzed by Staff in this case, I don't believe
8 Ameren to be short or to be -- or for there to be any
9 reliability concerns absent DSM.

10 COMMISSIONER MITCHELL: Okay. Thank you.

11 JUDGE PRIDGIN: Commissioner Mitchell,
12 thank you. Further bench questions? I think I might
13 have a couple.

14 QUESTIONS

15 BY JUDGE PRIDGIN:

16 Q. Mr. Fortson, does the Company's proposed
17 MEEIA portfolio affect its winter peak?

18 A. I would say no. I can't sit here and say
19 absolutely no, but the way it's been modeled, the
20 assumptions used, it has historically and I believe
21 continues to be more of a summer focused -- or just
22 more of a summer focus. I don't believe it's been
23 modeled or structured to impact the winter season or
24 the shoulder seasons for that matter.

25 Q. If Ameren Missouri's service territory had

1 an extreme weather event that required Ameren
2 Missouri to use this 800 megawatt plant that we've
3 been discussing, would its proposed demand-side
4 investments cover other load during that storm?

5 A. I think I'd answer it very similar to the
6 previous -- my previous answer. I can't say that I
7 know for sure, but again, based off the way it's
8 modeled and the -- the underlying assumptions, I have
9 concerns and hesitate to think that it would be
10 covering any additional load. It also, as we've
11 discussed, brings in, you know, to question the level
12 of savings that are anticipated in this application
13 anyway that Staff and other parties have -- I should
14 say Staff and OPC have questioned.

15 I think just in general we have concerns
16 with the level of savings that are achievable, the
17 savings that are being accounted for, you know,
18 through EM&V for numerous reasons, and again, just
19 the way it's -- it's been modeled and presented, I --
20 I struggle to see much, if any, of an impact on a
21 winter extreme event.

22 JUDGE PRIDGIN: Mr. Fortson, thank you.
23 Any further bench questions? Any recross based on
24 the recent bench questions? Public Counsel?

25 MS. VANGERPEN: No, thank you.

1 JUDGE PRIDGIN: NRDC? Hearing nothing,
2 Ameren Missouri?

3 MS. HERNANDEZ: No, thank you.

4 JUDGE PRIDGIN: Any redirect?

5 MR. LINHARES: Judge, this is Andrew
6 Linhares with Renew Missouri. I have no redirect
7 or -- and cross questions for this witness. I did
8 want to mention that I am on; I've been on the past
9 hour-plus. I just haven't had an opportunity to
10 acknowledge myself.

11 JUDGE PRIDGIN: My apologies,
12 Mr. Linhares. I've been looking at Webex and I
13 didn't notice your name. My apologies. Thank you
14 for speaking up.

15 MS. RUBENSTEIN: And, Judge, this is
16 Sarah Rubenstein. Can you hear me?

17 JUDGE PRIDGIN: Yes, I can.

18 MS. RUBENSTEIN: I've responded a couple
19 times where I don't think it came through. I just
20 want to make sure the line is working.

21 JUDGE PRIDGIN: All right. Thank you.
22 Did you have any cross?

23 MS. RUBENSTEIN: I do not, thank you.

24 JUDGE PRIDGIN: Thank you so much. I'm
25 sorry, any -- Ms. Johnson, any redirect?

1 MS. JOHNSON: Nothing further, thank you.

2 JUDGE PRIDGIN: All right. Thank you.

3 Mr. Fortson, thank you very much. You may step down.
4 And I believe we would back to Mr. Luebbert to take
5 the stand again.

6 MS. JOHNSON: Can we have a quick five
7 minutes? Mr. Luebbert was reviewing the slide deck
8 and requests a break.

9 JUDGE PRIDGIN: Sure. We'll take --

10 MS. JOHNSON: Okay. Thank you.

11 JUDGE PRIDGIN: We'll take about five
12 minutes. Thank you. We'll go off the record.

13 (Off the record.)

14 JUDGE PRIDGIN: All right. Good morning.
15 We're back on the record. Mr. Luebbert has taken the
16 stand.

17 Before he begins his testimony, I want to
18 let you know I'm looking to take a lunch break
19 somewhere around 12:30. I'm going to look for a
20 natural break. I don't want to necessarily stop a
21 witness in the middle of testimony, but that is my
22 plan to try to find a natural break somewhere
23 around 12:30 for a lunch break. So Mr. Luebbert's at
24 the stand and, sir, you're still under oath.

25 (Witness previously sworn.)

1 J LUEBBERT

2 the witness, having been first duly sworn,
3 testified as follows:

4 JUDGE PRIDGIN: Ms. Johnson, anything
5 before we take cross-examination?

6 MS. JOHNSON: No, Judge. We consider him
7 tendered for cross.

8 JUDGE PRIDGIN: All right. Thank you.
9 Any cross-examination, Public Counsel?

10 MS. VANGERPEN: Yes, just briefly, your
11 Honor. Thank you.

12 JUDGE PRIDGIN: When you're ready.

13 CROSS-EXAMINATION

14 BY MS. VANGERPEN:

15 Q. Good almost afternoon, Mr. Luebbert. How
16 are you?

17 A. I'm doing well, thank you.

18 Q. Good. Staff's position on the earnings
19 opportunity is that it's not warranted. Is that
20 correct?

21 A. That is --

22 MR. HOLTHAUS: Objection, Judge. This
23 is -- this relates to some objections we had
24 yesterday. This is a softball question that's
25 tantamount to direct examination. We objected

1 yesterday to friendly cross. I will disclaim that
2 Judge Dippell had overruled our objections, but we
3 just wanted to renew.

4 JUDGE PRIDGIN: Ms. VanGerpen?

5 MS. VANGERPEN: Your Honor, Staff does
6 have a different position on this issue from the OPC
7 and the -- the question was a closed question, so I
8 believe that is a cross question.

9 JUDGE PRIDGIN: All right. I'll
10 overrule.

11 **THE WITNESS: I'm sorry, could you**
12 **repeat?**

13 BY MS. VANGERPEN:

14 Q. Sure. Staff's position on the earnings
15 opportunity is that it's not warranted. Is that
16 correct?

17 **A. In this case it is not warranted by the**
18 **application before us today.**

19 Q. And, in fact, Staff didn't recommend a
20 value for an earnings opportunity as like an
21 alternative position. Is that correct?

22 **A. I don't believe -- well, I believe Staff's**
23 **position is that -- that there wouldn't be -- that**
24 **there isn't an earnings opportunity that's warranted**
25 **given kind of the historic cost recovery that's**

1 occurred under MEEIA to date. I do think that we --
2 we offered that there could be some alternative cost
3 recovery mechanisms. And that's outlined more
4 thoroughly in Ms. Lange's testimony.

5 Q. Okay. But you're aware that Dr. Marke
6 from the OPC has put forth a proposal for the value
7 of an earnings opportunity?

8 A. I am aware of his testimony, yes.

9 Q. Okay. And, in fact, he -- he -- I guess
10 putting that aside, if the Commission approves the
11 Company's amended application, including an earnings
12 opportunity, has Staff -- does Staff agree with
13 Dr. Marke's proposal for that value of the earnings
14 opportunity?

15 A. We don't. There -- there are a few
16 reasons that are important to consider. I laid out
17 in my direct testimony kind of the importance of how
18 to -- to value what an earnings opportunity is. And
19 the first step in that is identifying an investment
20 that can be foregone or a foregone earnings
21 opportunity from the shareholder perspective. We
22 don't have that in this case.

23 But a -- kind of the next, that there --
24 even if you were to value what an earnings
25 opportunity might be, there's also another step which

1 is to design the recovery of that earnings
2 opportunity in a way that would meaningfully benefit
3 ratepayers. And as I talked about in -- in my
4 testimony, it's -- it's tantamount for a MEEIA
5 application to not only benefit participating
6 ratepayers, but ratepayers in the class regardless of
7 participation.

8 And so targeting -- well, I guess kind of
9 the next step that is important to consider is timing
10 when you're -- when you're trying to design that EO.
11 I don't know that Dr. Marke kind of takes that next
12 step and describes how you -- you would design the
13 recovery of that earnings opportunity in a manner
14 that would result in or should be expected to result
15 in those ratepayer benefits from a foregone
16 investment.

17 And so that's -- those are areas that I
18 think are kind of key considerations when -- when
19 we're looking at whether or not that proposal might
20 be reasonable.

21 MS. VANGERPEN: One moment, Judge, please.

22 BY MS. VANGERPEN:

23 Q. And I think just one more question here,
24 Mr. Luebbert. You would agree with me though that
25 Dr. Marke's proposal attempts to value demand side on

1 an equivalent basis with supply side in accordance
2 with the MEEIA statute. Right?

3 A. I'd have to say that -- I can't confirm
4 that, that that is the case. And there are a few
5 reasons that I feel that's kind of appropriate for
6 everybody to understand. In the case of a
7 supply-side investment, the utility is putting up --
8 the shareholders are putting up money. They're --
9 and in return they have an expectation of recovery of
10 those funds over time as well as a return on that
11 investment.

12 We're really looking at something
13 different with kind of what's been proposed to date
14 through -- through MEEIA which is ratepayer funding
15 and a kind of contemporaneous ratepayer funding. So
16 they're -- they're funding through the DSIM or the
17 EEIC in this case, they're funding what the costs are
18 projected to be over the next recovery period and
19 then truing up at the follow. And so there isn't a
20 shareholder investment to actually earn a return.
21 And that's -- that's why it's so important to -- to
22 quantify what the earnings opportunity is based on
23 what that fore -- foregone earnings opportunity is
24 for the utility and then design it and structure it
25 in a way that recovery of that earnings opportunity

1 **is actually tied to that resulting ratepayer benefit.**

2 Q. Thank you, Mr. Luebbert. And I -- so in
3 addition to Dr. Marke's proposal for the valuation of
4 the EO, the Company has also put forth a
5 recommendation to value that EO. Does Staff agree
6 with the Company's proposal for the valuation?

7 A. Absolutely not. What Dr. Marke has
8 proposed is a value that's much lower, but, like I
9 said, we -- we still don't think that it's warranted
10 in this case. Obviously that -- that same premise
11 holds true for Ameren except what they're proposing
12 is a much higher dollar value and not much -- not
13 much that's going to hold them to kind of achieving
14 ratepayer benefit.

15 MS. VANGERPEN: Thank you, Mr. Luebbert.
16 Nothing further, your Honor.

17 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
18 Any cross from Renew Missouri?

19 MR. LINHARES: No cross, thank you.

20 JUDGE PRIDGIN: Thank you. Any cross
21 from NRDC?

22 MS. RUBENSTEIN: No, thank you.

23 JUDGE PRIDGIN: Cross from Ameren
24 Missouri?

25 MR. HOLTHAUS: None, thank you.

1 JUDGE PRIDGIN: Any bench questions?

2 Chair Hahn, when you're ready.

3 QUESTIONS

4 BY CHAIR HAHN:

5 Q. Good afternoon, Mr. Luebbert.

6 A. **Good afternoon. I had to check the clock**
7 **to see if it was.**

8 Q. I'd asked earlier Mr. Fortson if he was
9 familiar with the MIS -- the most recent MISO
10 resource cap -- the capacity auction. And he said
11 that he would better defer those questions to you.
12 So are you familiar with that auction?

13 A. **I am familiar. I won't be able to list**
14 **what the results are by dollar value by season by any**
15 **means, but I am familiar with -- with the most**
16 **recent.**

17 Q. Okay. I think you have the general -- you
18 probably have the general picture, but for zone five,
19 the capacity auction prices for fall and spring were
20 notably higher than the other seasons and the other
21 zones. Does this MEEIA plan address capacity or
22 energy efficiency meaningfully in the fall and in the
23 spring?

24 A. **Yeah. That's -- that's a point of**
25 **emphasis that I've been trying to make in this case.**

1 When you're looking at capacity reductions and you're
2 looking at the potential for capacity additions or
3 requirements from the RTO to serve ratepayers, the
4 timing is so crucial. Accounting for that timing,
5 making sure that the assumptions support what -- what
6 you're estimating.

7 In this case what Ameren proposes, what
8 they -- what they include as their megawatt
9 reductions is reliant on a single, what they call a
10 CP factor for every single measure. And so it's only
11 looking at one time period during the year. Now,
12 presumptively that's summer. In the past that was --
13 that was more likely to be kind of the -- the peak
14 period. But as we move forward, especially with
15 the -- the MISO seasonality capacity construct and
16 especially with the -- the zone five position, those
17 time periods become that much more important.

18 Now, I think I talked about on Monday
19 the -- the demand response being much, much lower in
20 capacity during the winter. That gets -- I -- my
21 assumption is that that would be even less in spring
22 and fall, but frankly, you just, you have to design
23 the program from the beginning with the outcome in
24 mind, right. So there are -- there are possibilities
25 that there could be a program designed to have a

1 winter impact, but you have to be thinking about that
2 from the onset. And then I think the other aspect
3 that you have to think about is the longevity of
4 those impacts, especially when we're -- we're trying
5 to make comparisons to a supply-side resource that
6 may be out kind of further off in the future.

7 CHAIR HAHN: Thank you.

8 JUDGE PRIDGIN: Chair Hahn, thank you.
9 Any further bench questions? All right. Hearing
10 none, I don't -- I don't believe I have any
11 questions. Any recross based on bench questions?
12 Public Counsel?

13 MS. VANGERPEN: No, thank you.

14 JUDGE PRIDGIN: Renew Missouri?

15 MR. LINHARES: No, thank you.

16 JUDGE PRIDGIN: NRDC?

17 MS. RUBENSTEIN: No, thank you.

18 JUDGE PRIDGIN: Ameren Missouri?

19 MR. HOLTHAUS: None, thank you.

20 JUDGE PRIDGIN: Any redirect?

21 MS. JOHNSON: Yes, please, judge.

22 REDIRECT EXAMINATION

23 BY MS. JOHNSON:

24 Q. I have some redirect related to EO
25 calculations. So, Mr. Luebbert, I'd like for you to

1 offer a little clarity to the record. We've heard
2 Mr. Wills and Mr. Lozano speak in response to
3 Commission questions yesterday and today about EO
4 calculations being tied to benefits for ratepayers.
5 Do you feel that the EO in this application has been
6 shown to be tied to ratepayer benefits?

7 A. No.

8 Q. Okay. If you were going to design an EO
9 that was tied to ratepayer benefit, can you walk us
10 through how that should happen?

11 A. Sure. I talked a bit in my -- my direct
12 testimony about quantifying what that EO amount would
13 be, and specifically I included a schedule to that
14 direct that kind of walks through what -- how you'd
15 quantify the deferral of a resource and what that
16 foregone earnings would look like from that. Now, it
17 includes some kind of generic assumptions, but it is
18 kind of a framework that you could utilize to look at
19 what that -- what that foregone earnings would be.

20 And so that's -- that would be the first
21 step is can you identify the -- a supply-side
22 resource that you can defer or ideally avoid. And
23 then you also have to identify the timing of when
24 that resource would be added otherwise and the timing
25 that it would be added if you move forward with a

1 demand-side program. That -- that kind of -- those
2 are the pieces of information that you'd need amongst
3 some others to quantify what that foregone earnings
4 would be.

5 Then the next step would be designing
6 metrics that can achieve that desired outcome, right.
7 If your desired outcome is to defer an investment
8 with kind of the goal of benefiting all the
9 ratepayers within the class including those that
10 don't participate, the timing, again, we've talked
11 about this over and over, but the timing matters.
12 And so if that supply-side resource isn't going to
13 happen for 12 years or more, then after you've
14 quantified what the earnings opportunity would be for
15 that deferral, now you need to tie the recovery of
16 that earnings opportunity to savings that can
17 actually defer that resource.

18 And so if you think about -- we've talked
19 about differences in energy efficiency measures.
20 There are some measures that might last two years or
21 are expected to last two years, and so that -- that
22 energy reduction might happen for a very short time
23 period. And then there are others that may last a
24 much longer time period. Well, if you're trying to
25 design an earnings opportunity with the intent of

1 benefiting ratepayers, right, then the metrics that
2 you set up have to be considering when those savings
3 occur.

4 And then -- and then the last piece of
5 that is not only the timing, but also the magnitude
6 of what those savings are in that future time
7 period, right. If -- if you need 300 megawatts in
8 the year 2033 in order to defer a resource, then
9 that -- you've created your goal, right. So
10 that's -- that's why when I talk about in my
11 testimony that that identification of that avoided
12 investment is the first step, it's because that is --
13 that is what's driving you toward a goal that gets
14 you that ratepayer benefit of avoiding that
15 investment or at least deferring that investment and
16 the recovery of that investment through rates.

17 That isn't how Ameren's done their
18 earnings opportunity in this case. They've done it
19 backwards. So they -- they have designed -- I'm
20 sorry. I'm sorry.

21 The reason that is important for you to --
22 for you to design the earnings opportunity in that
23 way, so you're looking at when that ratepayer
24 benefit's going to incur, is that it ensures that
25 you're aligning the utility financial incentive with

1 the ratepayer benefit. We know that the earnings
2 opportunity is what the utility's going to strive
3 for. That's their shareholder profit if they achieve
4 it. If it gets approved and they have an earnings
5 opportunity, whatever metrics are included in order
6 to achieve that is what they're going to be striving
7 for. That's -- I'm -- it shouldn't come as a
8 surprise, right. If they have an incentive to do so,
9 that's what they should be striving for.

10 So if you -- we've talked about designing
11 or evaluating what that foregone earnings is. Then
12 potentially designing for kind of achieving the end
13 goal. If you try to find that within Ameren's
14 application, what is the end goal. The end goal
15 is -- is -- it isn't resulting in that ratepayer
16 benefit, especially when you're -- when you're trying
17 to consider whether or not it benefits
18 nonparticipants. Because we don't see that deferral
19 of a resource. We don't see that they've accounted
20 for the interactions of the other mechanisms that
21 we've talked about. The end goal is included with --
22 with what's in their -- their earnings opportunity
23 and that's that shareholder profit.

24 Q. I'd like still just a little bit more
25 clarity if you would please. So the end goal, the EO

1 in Ameren's application, how is it organized?

2 **A. Yeah. So I think this is -- this is -- in**
3 **order to kind of explain this, it's important to have**
4 **their earnings -- I think they call it their earnings**
5 **opportunity. It's Appendix N. Sorry, Appendix N of**
6 **their application. And that -- it provides kind of**
7 **four performance metrics that the Company will be**
8 **striving for over the -- over the cycle. One of them**
9 **is the number of megawatts that they have --**

10 Q. Can I interrupt you just one second --

11 **A. Yeah.**

12 Q. -- Mr. Luebbert?

13 We have the demonstrative from Ameren's
14 application for everyone to follow along with if you
15 like.

16 **A. It would be really helpful, yeah.**

17 MS. JOHNSON: Okay. Would that be
18 appropriate if we entered an exhibit for
19 demonstrative purposes only? It's Ameren's
20 application exactly as they submitted it for Appendix
21 **A and Appendix N.**

22 JUDGE PRIDGIN: That is certainly fine
23 with me. We'll need a number.

24 MS. JOHNSON: Oh, I'm sorry. I'm not
25 sure what --

1 MS. MOORE: Your Honor, I hate to
2 interrupt. So at the end of the hearing we were
3 going to move to admit all of the appendices as
4 our 115. If we want to make it administratively more
5 efficient, we could refer -- if you want to use it as
6 a cross -- I'm sorry. It's going to be our 114.

7 JUDGE PRIDGIN: So what I'm hearing is --
8 or what I think I'm hearing is that Ameren Missouri
9 might want to offer that exhibit now. I think if
10 it's admitted into evidence, then we can work from
11 there. Is that what I'm understanding?

12 MS. MOORE: Yes. We could offer them as
13 our Exhibit 114 which would include all our
14 appendices, revised Appendix A through O.

15 JUDGE PRIDGIN: And, Ms. Moore, is
16 that -- is that what you're offering is Exhibit 114?

17 MS. MOORE: That is correct.

18 JUDGE PRIDGIN: All right. Any
19 objections?

20 MS. JOHNSON: Staff has no objection to
21 the entirety of Ameren's application coming in so
22 long as Appendix A and N are able to be used for
23 demonstrative purposes right now.

24 JUDGE PRIDGIN: Okay. Any objections or
25 comments? I'm hearing no objections. Exhibit 114 is

1 admitted into evidence.

2 (Company's Exhibit 114 was admitted and
3 made a part of this record.)

4 BY MS. JOHNSON:

5 Q. Mr. Luebbert, you have a copy of that in
6 front of you. Right?

7 A. I do.

8 Q. Okay. While Ms. Lange is handing that
9 out, would you walk us through what that is?

10 A. Yeah. So Appendix N is the -- the
11 document that's in landscape format. That is the
12 earnings opportunity, either calculator or -- oh,
13 here, they've got it named Earnings Opportunity
14 Summary. And then Appendix A I have page 8 and
15 page 10. And what that includes is incremental net
16 megawatt hour savings as projected by the Company,
17 and then incremental net megawatt savings as
18 projected by the Company is page 10.

19 If you look at performance metric -- let's
20 look at the performance metrics for Appendix N;
21 that's their earnings opportunity calculator. And
22 we're going to start with metric number three which
23 is, it's labeled as Energy Efficiency or EE Megawatt
24 Hours. Criteria will be the evaluated first year
25 incremental megawatt hour savings, includes

1 residential, business, and income-eligible programs
2 and excludes DR programs.

3 I'll have you kind of look over to the
4 column that says -- sorry -- P1 Target Max. And
5 you're going to see a value that says 269,942. So
6 if you look at page 8 of Appendix A and you look
7 under Portfolio Total for 2025, you're going to see
8 that same value, 269,942. As you move to the right
9 on Appendix N, you can match up that same value
10 from 2026 and 2027 in that same metric. So on the P2
11 target pay out or target max, 275,357, that matches
12 Appendix A; 2027, 277,042, again, that matches
13 Appendix A. So that is the portfolio total as
14 they've included within their application.

15 So the next thing we're going to look at
16 will be comparing metric number one, and that's the
17 demand response. So that -- that criteria will be
18 the cumulative evaluated megawatts enrolled. And it
19 says it includes residential and business DR
20 programs.

21 Now, if you look here, the P1 target
22 max for that is 246. And if you look at page 10
23 for 2025, the demand response total is 246 and a
24 quarter. It's -- it's the same for both. Move
25 to the right, look at P2 target max. Same

1 thing, 252. 55. Move to the right for 2027

2 it's 258.66. They align.

3 Q. Mr. Luebbert, can you explain why it
4 matters that their portfolio calculations for the
5 programs and the target goals listed in the four
6 buckets that they have in their earnings opportunity
7 calculator are exactly the same?

8 A. Sure. I talked earlier about the
9 importance of driving that ratepayer benefit through
10 the earnings opportunity, and I think I mentioned
11 that Ameren's kind of reversed how this -- this
12 process should work. What Ameren's provided to you
13 in this application and they've provided to us for us
14 to review is an application that's premised on very
15 specific programs with very specific numbers of
16 measures assumed to occur to come up with these
17 incremental savings in Appendix A. Now, what they've
18 also recommended is a great deal of latitude to pivot
19 how those programs are actually implemented and which
20 measures they actually incentivize. Some of them are
21 going to be better at reducing -- reducing demand,
22 some are going to be better at reducing megawatt
23 hours, and some of them are going to cost less to
24 implement.

25 So they've set their own target based on

1 this very specific kind of portfolio of programs, set
2 their own benchmark, with the ability for them to
3 pivot off of all of those assumptions from Day One.
4 They're asking for your approval to do that. But
5 they're also asking for their maximum earnings
6 opportunity to be boiled down from those 20-plus
7 programs with very specific details into these four
8 categories in Appendix N. Those four categories are
9 really broad and they don't account for the timing of
10 when those reductions occur. We're looking at first
11 year megawatt hours and megawatts saved during the
12 evaluation year. So first year megawatt reductions.

13 The third criteria -- so they -- they
14 split megawatts into demand response and nondemand
15 response. I think if you looked at metric two, that
16 EE coincident megawatts, that's going to coincide
17 exactly with that page 10 if you removed the demand
18 response impact.

19 So they've -- they've offered up this what
20 they're calling their plan, but their plan can change
21 and it's up to them whether or not they decide to
22 change and how they change it. Because once they
23 have approval, they have that ability based on their
24 plan. Now, what that -- that results in is they can
25 change which -- which programs they focus on or, more

1 importantly, which measures that they focus on. So
2 long as they hit their self-imposed target broken
3 down into four buckets of megawatt reductions,
4 megawatt hour reductions in the first year and
5 income-eligible spend.

6 That flexibility is something that we
7 talked about in our testimony. And it's something
8 that if you don't start off with an end goal in mind,
9 and that end goal for MEEIA should be benefiting
10 ratepayers over the long term and aligning the
11 utility's incentives of doing so. The earnings
12 opportunity is that chance to align the utility's
13 actions with its financial incentives and ratepayer
14 benefits. The Company's earnings opportunity isn't
15 going to do that. It's going to ensure that they get --
16 they hit their self-imposed target and they do it as
17 they see fit. But it won't ensure ratepayer
18 benefits, especially for those that don't
19 participate.

20 Q. Thank you for that explanation and walk
21 through. One point of clarification. We've talked
22 about the targets and the four buckets. Would the
23 difference between the program targets laid out for
24 the 20-plus programs and the summation of the 4
25 buckets be an explanation in your opinion for why

1 there could be wildly underperforming programs and
2 still full EO earned in the application that's been
3 submitted?

4 **A. Yes.**

5 Q. So no matter how the programs perform,
6 there are thousands of calculations for Ameren to
7 gain those four buckets and hit full EO?

8 MR. HOLTHAUS: Objection, Judge. We're
9 beyond the scope of cross-examination of the
10 Commission questions.

11 JUDGE PRIDGIN: Ms. Johnson.

12 MS. JOHNSON: Judge, we're talking about
13 the buckets and calculations of earnings opportunity.
14 Ameren created this plan.

15 JUDGE PRIDGIN: All right. I'll
16 overrule.

17 BY MS. JOHNSON:

18 Q. My question was there are thousands of
19 calculations based on program measurements under
20 which Ameren could hit full EO even with wildly
21 underperforming programs. Right?

22 **A. Yes, and fairly easily. Now, I think**
23 **what -- what's important to consider is that we -- we**
24 **have tried to get information from the Company on**
25 **kind of what that end goal is, right, from these --**

1 these programs. Because that is the starting point.
2 Getting to -- how do I -- how do I identify the
3 problem that I'm going to solve prior to throwing out
4 a solution. Once you've identified the problem or
5 identified what we -- what we've talked about as the
6 deferred investment, now you can start planning
7 towards that, start looking at the timing of when
8 that investment occurs, what seasons are driving kind
9 of that investment and then identifying what measures
10 and what kind of mix of programs can really achieve
11 that end goal.

12 We don't have that within this
13 application. Staff has tried over the course of the
14 last year, and probably, honestly, longer to get to
15 that information with the Company. We've been
16 unsuccessful. But that's what we need to have, MEEIA
17 programs move forward that are going to meaningfully
18 benefit ratepayers regardless of whether or not they
19 participate.

20 MS. JOHNSON: Nothing further, Judge.
21 Thank you.

22 JUDGE PRIDGIN: Ms. Johnson, thank you.
23 Mr. Luebbert, thank you very much. You may step
24 down. And this looks to be an opportune time to take
25 a lunch break. I'm showing time to be 12:30. I

1 would like to get back on the record, and I believe
2 is it Ms. Lange will be the next witness, at 1:30.
3 So is there anything further from counsel or from the
4 bench before we take a lunch break? All right.
5 Hearing nothing further, we'll be off the record
6 until 1:30. Thank you very much. We're off the
7 record.

8 (Off the record.)

9 JUDGE PRIDGIN: All right. Good
10 afternoon. We are back on the record. I believe
11 Ms. Lange is about to take the stand on Earnings
12 Opportunity. Before she does, some scheduling
13 matters. We are kind of behind schedule now and
14 we're running out of days in the week. So the only
15 solution I see is to go a little late this evening,
16 unless of course the pace picks up and then we won't.
17 But I kind of see not going any later than 7:00. I
18 think after that, people are going to start falling
19 over, especially our court reporter and we don't
20 want that. So my thoughts are we'll go until we
21 either finish Earnings Opportunity and EM&V or
22 roughly 7:00 p.m., whichever comes first.

23 So if there's nothing further from
24 counsel or from the bench, I'll call Ms. Lange to the
25 stand. And you are still under oath.

1 (Witness previously sworn.)

2 SARAH LANGE

3 the witness, having been first duly sworn,
4 testified as follows:

5 JUDGE PRIDGIN: And, Ms. Johnson,
6 anything before she stands cross?

7 MS. JOHNSON: No. We consider her
8 tendered. Thank you.

9 JUDGE PRIDGIN: All right. Thank you.
10 Any cross-examination from Public Counsel?

11 MS. VANGERPEN: Yes, just briefly. Thank
12 you, Judge.

13 CROSS-EXAMINATION

14 BY MS. VANGERPEN:

15 Q. Good afternoon, Ms. Lange.

16 A. **Good afternoon.**

17 Q. Are you aware of any investor-owned
18 utilities that have energy efficiency programs but do
19 not also have an earnings opportunity or throughput
20 disincentive mechanism?

21 A. **That was the status quo for Empire,**
22 **Liberty Utilities until very recently; I think that**
23 **would be until around 2020 that that was the case for**
24 **Empire. Ameren, that was the case from I believe**
25 **about -- well, from -- from before I got here until**

1 about 2011. Similar timeline for Evergy, well, at
2 the time Aquila and Kansas City Power & Light.

3 Q. Thank you for that. Are you aware of any
4 investor-owned utilities who currently have that
5 setup, even if they are not electric utilities?

6 A. Oh, I'm not sure exactly how Spire's setup
7 is -- it's been a while since I've been involved in
8 that, but I'm not sure exactly what Spire, formerly
9 MGE and Laclede, have.

10 Q. Okay. Thank you. We've also talked a
11 little bit today about demand response. You would
12 agree with me that Ameren can do demand response
13 outside of MEEIA. Correct?

14 A. Absolutely. And I would expect it would
15 be prudent for them to do so in many instances.

16 Q. And are you aware whether Ameren did
17 demand -- had a demand response program prior to
18 implementing MEEIA or did demand response in any
19 respect?

20 A. I believe they had curtailable rates or a
21 curtailable rider. Whether or not programs were
22 denominated demand response, I'm -- I'm not certain,
23 but I know they have a history of interruptible load.
24 And I -- I think that they had an air conditioner
25 cycling program in the late 2000s time frame. I'm

1 not completely certain on that. I would defer to
2 their cancelled tariffs.

3 MS. VANGERPEN: Thank you. Just one
4 moment, your Honor. That's all we have. Thank you,
5 Ms. Lange. Thank you, your Honor.

6 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
7 Any cross from Renew Missouri?

8 MR. LINHARES: No. Thank you very much.

9 JUDGE PRIDGIN: Mr. Linhares, thank you.
10 Any cross from NRDC?

11 MS. RUBENSTEIN: No, thank you.

12 JUDGE PRIDGIN: Thank you. Any cross
13 from Ameren Missouri?

14 MS. MOORE: No, thank you, your Honor.

15 JUDGE PRIDGIN: All right. Any bench
16 questions?

17 COMMISSIONER MITCHELL: None from me,
18 Judge.

19 JUDGE PRIDGIN: Hearing none. All right.
20 Thank you. Any redirect?

21 MS. JOHNSON: None for us Judge, thanks.

22 JUDGE PRIDGIN: Ms. Johnson, thank you.
23 Ms. Lange, thank you very much. I believe Dr. Marke
24 is the next witness on this topic and the final
25 witness on this topic if I recall correctly. And,

1 Dr. Marke, you're still under oath.

2 (Witness previously sworn.)

3 DR. GEOFF MARKE

4 the witness, having been first duly sworn,
5 testified as follows:

6 JUDGE PRIDGIN: And, Ms. VanGerpen,
7 anything before he stands cross?

8 MS. VANGERPEN: No. We consider him
9 tendered for cross.

10 JUDGE PRIDGIN: All right.
11 Ms. VanGerpen, thank you. Cross-examination. Staff?

12 MS. JOHNSON: Yes, please, just briefly.
13 Okay. Sorry about that.

14 CROSS-EXAMINATION

15 BY MS. JOHNSON:

16 Q. Good afternoon, Dr. Marke.

17 **A. Good afternoon.**

18 Q. So we've talked a lot about kind of the
19 supply-side equivalent for the earnings opportunity.
20 I would like your perspective on how or what would be
21 a comparable earnings opportunity on the supply side.

22 **A. Okay. This is a challenge because there's**
23 **a lot different resource mixes that could be the**
24 **proxy, right. So Ameren needs to fill some missing**
25 **load. What do they fill it with. And by definition**

1 the costs are going to change, right, you know, cost
2 for wind is going to be different than cost for gas
3 and coal and so forth.

4 Putting aside -- let's just accept at face
5 value that what they put forward here, simple cycle
6 is the appropriate resource that we're going to use
7 as a proxy. When we talk about companies and
8 cost-plus regulation, they make money by building
9 things. So on a supply-side investment they make a
10 return on their capital expenditures, not their
11 operational expenditures.

12 If you follow that same logic with DSM
13 programs, the closest comp in my professional opinion
14 would be to say rebates and incentives are the
15 equivalent of capital expenditures, and that program
16 administrative costs are the equivalent cost of
17 operational expenditures. If you do that and if you
18 look at my surrebuttal testimony in page 50 and 51
19 where I break down the different cost categories, I
20 have given -- my testimony effectively talks about
21 a 20 percent equivalent return that Ameren,
22 shareholders, the Company would get from if they
23 accomplish what they're proposing to accomplish.

24 When we talk about -- when we write about
25 MEEIA, and this is a complex topic, you know. When

1 I -- when I try to simplify fee something, it comes
2 at the expense of, like, trying to go into something
3 in more detail, and this is a case where I'm critical
4 of myself in this. So return on equity is not a
5 comparable metric to use for how it works with MEEIA.
6 And in part, because capital structure matters, the
7 timing of the rate case matters. There's a
8 difference between authorized ROE and earned ROE.
9 All of those factors kind of play into what that
10 earnings opportunity is on the supply side.

11 Not so for DSM. For DSM it's these are
12 the targets the Company picked. If we meet the
13 targets, we get rewarded. Well, if you keep that
14 frame of thought that I talked about, capital
15 expenditures and operational expenditures, and this
16 is -- this is what the statute says, we need to
17 value them on an equivalent basis. And if you look
18 at my page 50, I talk about how let's take out all
19 the operational expenditures, in this case the
20 program administrative overhead. And the Company's
21 not arguing this; they're saying we project 45
22 percent administrative overhead, all right. Then
23 you're down to \$166.5 million that we are taking out
24 of the equation. You shouldn't get a return on
25 something like that because we don't do that on the

1 supply side. So you have \$203 remaining.

2 If they get a \$70 million return, which
3 would be the full EO, that comes out to close to a 35
4 percent return on investment. So I'm going to say
5 ROI instead of ROE just to avoid the complexity of
6 that. That's a 35 percent. If they earn 70 million,
7 we've got 203 million of capital investment. And
8 that capital investment's HVACs and calling demand
9 response programs and stuff like that.

10 Now, if you take it a step further, is the
11 next section we're going to talk about is evaluation,
12 measurement, and verification which is what can
13 actually be attributed to Ameren Missouri and what
14 would naturally occur. My page 51 talks about that.
15 And I took a very conservative approach. I -- for
16 example, I didn't even factor in the IRA. Everything
17 we talked about yesterday about the IRA and being a
18 free rider impact on this case is not even included
19 in this evaluation. I put in something about the
20 rebound effect on operational efficiencies. I just
21 did historical free ridership of 15 percent.

22 All of a sudden what can be attributed to
23 Ameren Missouri, I calculated approximately \$112
24 million, all right. So that's \$112 million that's
25 doing the heavy lifting. That's the heavy that can

1 be attributed to Ameren Missouri as capital expense.

2 So what is \$70 million of return on \$112 million
3 investment. That's 62 percent. Sixty-two percent
4 return on investment. I can't think of anything
5 anywhere that gets that sort of return on investment.

6 Like, that's -- and the caveat here is
7 that they're not putting up their capital. There is
8 no risk. These are ratepayer dollars that are
9 putting up that capital and ratepayers will then have
10 to pay a 62 percent -- now, and I get it. Like,
11 maybe they don't hit their targets. Okay. Fifty
12 percent. I mean, that's still incredibly generous
13 for something that we can't be sure will happen. And
14 that there is -- reasonable people can sit here and
15 say a lot of this is probably just going to naturally
16 occur. And that's -- that's the frustration on our
17 end and that really is a product of me talking to
18 Ms. Lena Mantle who's an OPC witness yesterday where,
19 you know, she kind of came into this at the last
20 minute and we started talking about the earnings
21 opportunity and she pointed out the -- the flaw in my
22 logic, you know, that I had put in testimony, and
23 she's right.

24 So that really gets to the heart of it,
25 that this is an extremely -- I mean, use your

1 **hyperbolic statement that you want to put in there.**

2 **It's very rich.**

3 Q. Okay. I need a little bit more help,
4 Dr. Marke, because I understand that we started with
5 program costs of 370 million.

6 **A. Uh-huh.**

7 Q. And the earnings opportunity, 70 million.
8 It's 19 percent --

9 **A. Correct.**

10 Q. -- ROI if we -- if we count the 370 as an
11 investment. Right?

12 **A. Right.**

13 Q. Okay. So then you moved to a 35 percent,
14 which was basically 166.5 million less than the \$370
15 million program budget.

16 **A. So --**

17 Q. Where did that come from?

18 **A. Right. So the \$370 million is the overall**
19 **cost of the programs. But within that cost you have**
20 **costs that are tangible, like I can point to**
21 **something concrete, and costs that are not tangible,**
22 **it's hiring another employee to go ahead and secure a**
23 **contract, right. And those dollar amounts are**
24 **historically not stuff that's included in -- it's not**
25 **rate based. Those are your operational expenses.**

1 So again, if we're valuing what the
2 statutes says, we're valuing supply side on an
3 equivalent basis of demand side, we shouldn't be
4 counting that as part of it. So when you look at,
5 well, how rich is this, you're in step two, and that
6 step two just went from 19 percent, 20 percent,
7 depending on how you look at it, to 35 percent.

8 Q. Okay. And that happened by taking
9 the \$370 million of programming and removing
10 administrative overhead which is the equivalent --

11 **A. Yep.**

12 Q. -- of operational expenditures?

13 **A. That's correct.**

14 Q. And that leaves us with 203.5. And the 70
15 million as a percentage over 203.5 is 35 percent ROI?

16 **A. That's correct.**

17 Q. Okay. So we're step two?

18 **A. Right.**

19 Q. Okay. So step three?

20 **A. Okay. Step three is -- and we'll talk**
21 **more about this in the next session, but it's the**
22 **EM&V. Step three says maybe not all of this is a**
23 **result of Ameren. Maybe that 8,000 rebate that I'm**
24 **getting from the federal government had more of a**
25 **push than the \$900 rebate I got for my HVAC. And if**

1 that's the case, then we need to not count that. And
2 that -- again, that's the Commission rules. That's
3 how we set this up. These are naturally-occurring
4 energy efficiency.

5 I -- based off of my recommendations, and
6 I can't stress this enough, these are very
7 conservative recommendations where I factored in 10
8 percent for a rebound fact. That's straight from
9 ACEEE. That's about as an authoritative, like,
10 pro-energy efficiency group you can find. I did 15
11 percent for operational efficiencies. Again, that's
12 the Department of Energy. I did 5 percent on
13 principal-agent, which I think is probably grossly
14 understated, but okay. And then we did 15 percent
15 for free ridership just based off of historical
16 numbers. Just historically we've just said, yeah,
17 about 15 percent would just naturally happen. Now, I
18 think it's going to be greater than that because of
19 the IRA, but let's say, I don't know, people never
20 hear about the IRA, okay.

21 If you then take that 203 million and
22 subtract those elements, I came up with 112 million.
23 That, if we want to value it on equivalent basis,
24 that's what they should be earning a return on
25 investment off of. And if you do that, if it's still

1 the 70 million, we haven't adjusted anything else,
2 this is the Commission saying, We agree with Ameren's
3 proposal, then they're earning a 62 percent return on
4 their investment. On, I say their investment; it's
5 ratepayers' investments. That's -- that's a very --
6 that's very generous.

7 Q. What's a typical return?

8 A. Oh, boy. I mean, so again, it's a bit
9 complicated but, you know, we talk about the 8 to 10
10 percent, you know, on ROEs are typically set on that,
11 whether or not they earn it, you know, is -- is open
12 to debate and timing and the capital structure of
13 the utility. But for simplicity's sake, let's just
14 say 8 to 10 percent.

15 Q. Okay. So based on the most thorough
16 estimate that you can do in your professional opinion
17 to value this equivalent to the supply side, the
18 result of your analysis, when you apply it to this
19 application using extremely conservative estimates
20 that you listed in your testimony, results in a 52
21 percent higher return on investment than anything on
22 the supply side?

23 A. And the 52, if I understand your question
24 correctly, it would be -- is that subtracting --

25 Q. Yeah. Taking out --

1 **A. -- what it typically would be --**

2 Q. -- the 10 percent --

3 **A. So, yes. Yes, that would be correct.**

4 Q. Okay. Thank you. Oh, I have one more.

5 I apologize, Judge.

6 Oh, right. We need to address -- we need
7 to address an assumption here, I guess, a caveat that
8 we're making. We're making a caveat that -- that
9 Ameren is going to earn a return on the ratepayer
10 investment there at all. Right?

11 **A. That's correct.**

12 Q. Can you explain that a little bit more?

13 **A. We're making the assumption that Ameren
14 would have an opportunity? Is that maybe --**

15 Q. Sure.

16 **A. Okay. I thought I understood the
17 question, but maybe I don't.**

18 Q. I just want to make sure that all of our
19 assumptions are transparently listed here. So when
20 we have this entire discussion of what the return on
21 investment looks like moving through your three steps
22 to reduce the 370 million program budget --

23 **A. Right.**

24 Q. -- down to the 112 which gives us that 62
25 percent ROI, all of that is with the caveat that

1 Ameren is earning return on ratepayer investment at
2 all.

3 A. Oh, I understand I think. Yes, that's
4 true. And this is effectively what Staff's argument
5 is that it -- whether or not that that's appropriate
6 that we're deferring anything at all and that you can
7 point to something tangible. That's the problem of a
8 counterfactual, right. How do you prove something
9 that would not -- that doesn't exist but for this.
10 And my sanity check on it and I -- we had a
11 completely very different approach than what
12 Mr. Luebbert did in sort of valuing this, and I don't
13 disagree with anything that he's talking about. I
14 took it from a much more macro perspective of saying,
15 How -- if this program didn't exist, how reasonably
16 can we expect that people will still buy energy-
17 efficient equipment and take advantage of it. Given
18 the IRA and the saturation of just efficient
19 appliances, I would -- my professional opinion is
20 it's very likely.

21 MS. JOHNSON: Thank you for the
22 clarification. I appreciate it. Nothing further.

23 JUDGE PRIDGIN: Ms. Johnson, thank you.
24 Any cross from Renew Missouri?

25 MR. LINHARES: Yes, Judge, just very

1 briefly.

2 CROSS-EXAMINATION

3 BY MR. LINHARES:

4 Q. Dr. Marke, I want to actually keep on the
5 current thread to which you were just speaking. So
6 we heard your opinion there. In the case of
7 income-eligible populations, income-eligible customer
8 market, would your answer be the same if we're just
9 looking at that -- that demographic? Would -- do
10 you --

11 A. Oh, I understand. Okay.

12 Q. Yes.

13 A. No. Do I think absent -- well, that's an
14 interesting question.

15 Q. Yeah. I'll -- happy to rephrase just for
16 the record here. Do you think that absent an Ameren
17 Missouri energy efficiency portfolio --

18 A. Yeah. I believe I understand your -- your
19 question. I'm thinking about it a little bit. So
20 I'm going to reframe the question and you just tell
21 me if I've got it correct. So absent the Ameren
22 Missouri program, would low-income customers still
23 take advantage of energy efficiency products.

24 Q. That's correct.

25 A. Okay. So there's a couple things to think

1 about when we start talking about those programs.

2 And I want to say just in general we're consumer
3 advocates. We are very conscious of how expensive
4 things have become just inflation-wise. Nobody's
5 denying that having a rebate will have a material
6 impact on your purchasing power.

7 The problem that we wrestle with is those
8 products are going to exist regardless of whether or
9 not the rebate takes place. That wasn't the case
10 when we first passed the statutory requirement of
11 MEEIA. That is much more the case today. So even if
12 the low-income customer can't afford it, if they were
13 in a position to purchase something or if they were
14 forced to do something, their only options available
15 to them would be very efficient equipment.

16 Now, there are other mechanisms in place.
17 The most notable one is LIWAP. So we get federal
18 funds that come down to go ahead and address energy
19 efficiency. All things being equal, that's our
20 preferred method because I don't have -- as a
21 consumer advocate, we don't have to pay lost revenues
22 for that. We don't have to pay an earnings
23 opportunity. We don't have to pay program costs.
24 That's all through taxpayer dollars. And there's
25 more of that money coming down at ARRA-like levels

1 than what has existed for at least more than a
2 decade.

3 Now, is there more of a need than there is
4 money. Most definitely. Like, there are definitely
5 people that need help and that can move forward with
6 it. But what I just articulated really -- and this
7 is more of a program question, but this goes to the
8 same -- my same criticism of Ameren Missouri and
9 their low-income programs. So Ameren Missouri's
10 proposing a single-family low-income weatherization
11 program. By all practical purposes, that's the exact
12 same thing that you have with federal LIWAP. You've
13 got people going in and just weatherizing homes. The
14 difference between the two is that what I'm paying
15 for program cost overhead for everything that's
16 taking place through a contractor through Ameren
17 Missouri is so much more expensive than just having
18 it go through the community action agency.

19 That's what I struggle with, Mr. Linhares,
20 in promoting the energy efficiency through the
21 low-income programs. I think there's an argument to
22 be made for multi-family programs because of the
23 split-incentive issue that takes place between
24 landlords and tenants, and maybe we can talk more
25 about that in the Programs section. But the

1 low-income programs are most definitely a challenge.

2 So I acknowledge the problem, but from my
3 vantage point, that doesn't justify the cost and
4 certainly doesn't justify the -- the potential, you
5 know, orders of magnitude, like earnings opportunity
6 that the utility would otherwise receive if the
7 Commission were to approve this program. Because at
8 the end of the day, those customers, those low-income
9 customers are going to -- you know, a good chunk of
10 them, because they can opt out -- do I think most
11 customers do opt out of that program. No I don't.
12 The numbers will bear that out. But they're going to
13 be the ones getting that bill, that rate increase
14 that's going to result from MEEIA. So I think it's
15 just incumbent upon us that we are good stewards of
16 the finite money that we have.

17 MR. LINHARES: Okay. Well, your answer
18 touched upon a lot of issues on which I have other
19 questions, but to stay on topic, I'll forego those
20 for the time being. No further questions.

21 JUDGE PRIDGIN: All right, Mr. Linhares.
22 Thank you. Any cross from NRDC?

23 MS. RUBENSTEIN: No, thank you, Judge.

24 JUDGE PRIDGIN: All right. Thank you.
25 Any questions from Ameren Missouri?

1 MS. MOORE: Yes, your Honor. Thank you.

2 CROSS-EXAMINATION

3 BY MS. MOORE:

4 Q. Good afternoon, Dr. Marke. I have a few
5 questions for you. I believe you were present when
6 Mr. Fortson was testifying. Correct?

7 A. I was.

8 Q. All right. And then he discussed the need
9 for an earnings opportunity to be tied to deferred
10 resources?

11 A. Yes.

12 Q. Do you remember that? Okay. Do you agree
13 with his assessment that programs we are seeking to
14 approve will not reduce winter load at all?

15 A. No. Would you like me to explain why?

16 Q. Sure. It might lead -- help lead into the
17 next couple of --

18 A. Okay.

19 A. -- series of questions.

20 A. So the demand response programs are going
21 to reduce load. If you're recalling events for --
22 for items for peak load, the demand response will
23 reduce it. It sounds like the Company is making
24 every effort to go ahead and move forward with
25 expanding programs on the winter side and to an

1 extent, it already is including some of that. So
2 that will have an impact on it.

3 And our office is supporting the demand
4 response programs. I mean, I think it's critically
5 important for the Commission to distinguish when we
6 start -- and Mr. Wills did it correctly. I mean, he
7 says DSM's sort of an umbrella term that includes
8 demand response and energy efficiency. I mean, we
9 take -- we've made the observation that there are
10 private entities that are now in the market that
11 could go ahead and function in the exact same manner
12 as Ameren's demand response. But realistically I
13 think we're probably a couple years away from that
14 being a reality. So we are -- we are effectively
15 supporting the demand response programs for Ameren.

16 Q. Great. Thanks. Now, in terms of the
17 energy efficiency measures, do you, off the top of
18 your head, can you think of any energy efficiency
19 measures that might affect winter peak load or winter
20 load?

21 A. Winter load? Water heaters is one thing
22 that -- there's a lot of hope for, like, dispatchable
23 water heaters. There's some pilot programs that have
24 been done in, like, some much colder states would
25 have an impact. Our big go-to for reducing -- to get

1 demand savings on the energy efficiency side are
2 HVACs. Well, I mean, HVACs aren't going to run in
3 the winter, so I mean, that kind of negates that --
4 that argument. There are -- there is a little bit of
5 demand savings that are going to be associated with
6 energy efficiency, but it's going to vary
7 considerably between the measures.

8 Q. Okay. But what about on the commercial
9 side.

10 A. Oh.

11 Q. So let's think process chillers. You
12 know, those are the things that help reduce the heat
13 made by machines such as computers for data centers
14 and then there's some industrial applications in
15 MRIS. Do you think more efficient equipment in that
16 sector would help reduce winter load?

17 A. It would.

18 Q. And then on the HVAC side, heat pumps
19 would be helpful in that regard too. Do you agree
20 with that?

21 A. I would agree with that.

22 Q. All right. And then would you -- would
23 you agree -- would you agree with me that if we
24 reduce our winter peak load, that that, in turn,
25 would reduce our winter resource needs and improve

1 our capacity position in the winter?

2 **A. Yes.**

3 Q. All right. And then were you at the
4 meeting last fall in September where the Company went
5 over its IRP plan?

6 **A. I was. I -- I don't -- I went back and
7 checked my calendar from a year ago and it's on my
8 calendar so I'm sure I was there.**

9 Q. Yeah. Is it your understanding that the
10 capacity position reflects the demand-side programs
11 as part of our preferred resource plan?

12 **A. I would agree that that's what Ameren has
13 framed it as.**

14 Q. So you would agree that in the assumptions
15 made for that preferred plan demand response?

16 **A. The demand response, yes. It does factor
17 that.**

18 Q. Well, demand-side programs were included
19 as well.

20 **A. So --**

21 Q. So let --

22 **A. Okay.**

23 Q. I have to get used to the Missouri, when
24 other jurisdictions energy efficiency is a big
25 umbrella.

1 **A. Right.**

2 Q. So just demand response and energy
3 efficiency measured together for.

4 **A. It is -- so it's a modeling exercise. And**
5 **there's a lot of assumptions that go into a modeling**
6 **exercise. What Ameren Missouri modeled for was their**
7 **market potential study results that informed that.**
8 **We agreed that there are demand savings that**
9 **accurately reflect that on the demand response side.**
10 **We are less confident that those savings associated**
11 **on the energy efficiency side accurate -- accurately**
12 **reflect what would happen absent this program.**

13 **From my vantage point when you ask me do**
14 **heat pumps do this, do controls in commercial**
15 **buildings. Yes, they do. Do I think those are going**
16 **to happen regardless of an Ameren program. Yes, I**
17 **do.**

18 Q. All right. Would you agree with me that
19 not having those demand-side or DSM programs would
20 increase the -- well, I think you answered it, but
21 I'll let you do it again. And let me start from the
22 beginning. Would you agree with me that not having
23 DSM programs would increase the capacity shortfall
24 projected by the Company under extreme weather event
25 with this even if we had a simple cycle in place?

1 **A.** **Yes. But I'll tell you when we started**
2 going down this rabbit hole, I started thinking about
3 the curtailable rate tariff that we had on there.
4 And I'm more convinced now than ever that you don't
5 necess -- there are -- there is a way forward with
6 value demand-side demand response programs that we
7 have historically done that doesn't necessarily need
8 to fit within this framework. So I hope I answered
9 that question.

10 **Q.** So let me ask you this. So let's give you
11 a scenario where we have to -- for demand response
12 you really do need to rely on the customer to drop
13 the load. Correct?

14 **A.** **Correct.**

15 **Q.** So what happens when we request a customer
16 drop the load and for whatever reasons, they're going
17 under their own crisis, and they cannot drop the
18 load?

19 **A.** **So it depends.**

20 **Q.** Would you want to rely on that and -- go
21 ahead. I'm sorry.

22 **A.** I mean, to -- to be clear, and I don't
23 want to, like, a tit for tat here. I mean, we are --
24 we are recommending that they support -- the
25 Commission recommend -- we are recommending the

1 Commission approved the demand response program. I
2 believe that that's the simplest, easiest way to go
3 ahead and -- and deal with the potential shortfall
4 that you're articulating.

5 Now, are there other ways of doing that.
6 Absolutely. Have there historically been other ways
7 of doing it. There has. Most energy -- most DSM
8 programs in other states don't even touch on demand
9 response programs. This is -- this is largely a
10 unique Missouri application because we have
11 historically let out ARCs.

12 Q. Okay. I want to just circle back to some
13 question that Staff had asked you regarding the
14 return on equity. Would you agree with me that kind
15 of an ov -- a simplified formula of the revenue
16 requirement includes rate base times the rate of
17 return plus expenses and taxes will equal --

18 A. Yes.

19 Q. -- that adds up to the revenue
20 requirement.

21 So that's -- all of those are one
22 component of the revenue requirement. Correct?

23 A. Correct.

24 Q. All right. Give me a moment. I want to
25 go back to, you know, when we were talking about heat

1 pumps reducing the, you know, energy efficiency
2 measure that can help contribute to reducing the
3 winter peak.

4 **A. Yes.**

5 Q. All right. Would you agree with me that
6 under the MISO seasonal construct, September is
7 defined as a fall month?

8 **A. Yes.**

9 Q. And over the recent years MISO has had
10 peaks in September?

11 **A. Yes.**

12 Q. And so if -- and I think you heard
13 Mr. Lozano testify earlier that the curtailment
14 period runs through September?

15 **A. Yes.**

16 Q. So assuming that we have those resources
17 available, the residential HVAC, we could also call
18 on those resources, well, not only for curtailment,
19 but those that enrolled in the demand side, the
20 curtailment programs to -- through the smart
21 thermostats, those customers who opt not to --

22 **A. Turn it off.**

23 Q. Yeah, turn it off. Those customers who
24 have participated in the HVAC program and gotten
25 rebates for more efficient HVACs, air conditioners,

1 that would be an energy efficiency resource that
2 would be contributing to reduce that load peak during
3 that September month, would it not?

4 **A. Oh, there's a lot to unpack there. So if**
5 **I understand correctly, it -- you're asking me**
6 **whether or not --**

7 Q. I think the simple way to say --

8 **A. Okay.**

9 Q. -- is that a customer has purchased a more
10 efficient HVAC system, but they elected not to
11 enroll in the peak-time savings reward program.

12 **A. Okay.**

13 Q. So the Company cannot curtail.

14 **A. Right.**

15 Q. They -- not at all. They can't curtail
16 that HVAC system. And what I'm -- and, but we both
17 agree that that's an energy efficiency measure?

18 **A. It is.**

19 Q. So on a hot day if that customer is
20 running their more efficient air conditioner, do you
21 agree that that contributes to reducing the overall
22 peak load on that hot day?

23 **A. Yes.**

24 MS. MOORE: All right. Thank you. No
25 further questions.

1 JUDGE PRIDGIN: Counsel, thank you. Let
2 me see if we have any bench questions. Chair Hahn,
3 any questions? Commissioner Coleman?

4 COMMISSIONER COLEMAN: I do.

5 QUESTIONS

6 BY COMMISSIONER COLEMAN:

7 Q. Just something I've thinking about all day
8 and since you're on the stand, I think I'll ask you
9 about this. So after all the DSM programs, from your
10 vantage point, do you believe that Ameren is selling
11 less electricity to their customers?

12 A. That's a great question. I think MEEIA
13 affords a really -- up until a couple years ago where
14 everything started -- the -- the first movement was
15 like, oh, there's going to be electric cars coming
16 online and that's going to be a lot of load and smart
17 appliances is going to be a lot of load. And now
18 it's data centers, right. Prior to that it was
19 decreased load because the efficiency just kept
20 increasing exponentially, just naturally. It's
21 naturally-occurring energy efficiency.

22 When you got MEEIA, all of a sudden
23 that -- those lost revenues all of a sudden became
24 potentially captured through MEEIA so the Company
25 could get recovery for that. Now, they would say,

1 Well, we're promoting, you know, light bulbs and
2 everything else. And, you know, reasonable minds can
3 disagree, you know. And I'm disagreeing right now.
4 I'm saying a lot of this stuff is just going to
5 naturally happen. And we would say those numbers are
6 grossly overstated.

7 I think Evergy -- Evergreen Economics, I
8 heard the quote earlier in this -- this hearing where
9 they were talking about the IRA and how the net to
10 gross should account for that. I believe they said
11 point, you know, ten should be the -- the
12 net-to-gross ratio. So what Evergreen Economics is
13 saying is that 90 percent of that's just naturally
14 going to happen. We've never gotten -- we've never
15 had an approved or lost revenue mechanism that showed
16 that much. But if you believe that that's at all
17 accurate, then -- then the Company's probably
18 recovering lost revenues that they otherwise
19 shouldn't be getting because of MEEIA.

20 So do I -- do I think that the Company is
21 losing ener -- do I think they're losing revenues as
22 a result of energy efficiency. Yes. I mean, and
23 that's okay. I mean, that's how -- we're -- there's
24 no -- they're natural monopolies, and what we're
25 doing here as economic regulators really is a proxy

1 for the market. I mean, you go out into the market,
2 it ebbs and flows.

3 COVID-19's a perfect example, you know.
4 COVID-19 hit everybody, hit all companies. And we
5 had utilities come in and say, Hey, we're losing
6 revenues, like we should be made whole entirely for
7 this. Well, that doesn't actually reflect a natural,
8 you know, a proxy for the market. And in the market,
9 you've got market discipline. In a market, the pizza
10 company has to work really hard to get your business
11 because you can go someplace else. You can't do that
12 for the utilities.

13 So anytime that we're giving mechanisms to
14 increase or ensure revenues on this end, you're just
15 reducing risk and you're getting farther and farther
16 away from what I believe pure economic regulation is
17 supposed to master. And the result of it is that you
18 end up getting -- the companies end up making more
19 money than they otherwise would be. I -- look no
20 further than, you know, their earnings over time.
21 And what you see really in the past ten years with
22 the influx of surcharges like the FAC, MEEIA, the
23 RESRAM, their earnings go up and they've gone up and
24 they've gone up. And you -- can I point to other
25 nonnatural monopolies that deal with this. Well,

1 what you see is that most companies ebb and flow.

2 That's -- again, it's not the case.

3 So do I think it's happening. Yes. Do I
4 think it's happening at the level that should cause
5 us panic. Absolutely not. Because you're going to
6 get more generation that's going to -- you're going
7 to get more load coming on, the data centers.

8 Anytime anybody buys an electric car. Like, those
9 revenues are going to materialize over time.

10 Because, I mean, think of it this way, Commissioner
11 Coleman, we're not sitting here talking about what we
12 can retire. We're sitting here talking about what we
13 can build. That's -- that's the easiest example.
14 Like, I -- I'm not concerned on that end.

15 COMMISSIONER COLEMAN: Thank you. Thank
16 you, Judge.

17 JUDGE PRIDGIN: Thank you, Commissioner.
18 Any further bench questions? I will -- I will have a
19 few.

20 QUESTIONS

21 BY JUDGE PRIDGIN:

22 Q. Dr. Marke, does the Office of Public
23 Counsel believe there's a way to insulate customers
24 who are paying for the MEEIA plan from future events
25 that might impact the viability of the plan?

1 A. I mean, it -- it'll come at a cost.
2 Every -- and I don't -- again, I don't envy what --
3 the position that you guys are in. It's -- there's
4 trade-offs in everything that we -- we decide. So
5 there are ways of insulating it. A crude example
6 would be what they did in Iowa. And that was a
7 legislative fix where they said, okay, you know, the
8 Commission can approve a program, but if doesn't pass
9 the RIM test, customers have the option of opting
10 out. Okay. I mean, there it is. Because the RIM
11 test would actually show that it's happening. It's
12 taking into account all those costs. And if it's
13 not, then those customers could -- could opt out.

14 I think the trade-off on that is, I mean,
15 I think you would cripple the programs, right. And
16 that's -- so we wouldn't be moving forward with any
17 viable DSM program. I mean, in short, I mean,
18 there's a reason why customers of a certain size try
19 to opt out of MEEIA, right. That's -- if that luxury
20 was afforded to other customers, I believe they would
21 take advantage of it.

22 Q. Do any of the programs in Ameren's
23 proposed MEEIA have the ability to meaningfully
24 reduce winter load?

25 A. The -- the most obvious in short term and,

1 again, like, that's the key, it's short term, would
2 be the demand response programs. I mean, that's --
3 that's just very obvious. Like, it's peaking. Okay.
4 Hey, Walmart, shut off your power. All right. We
5 can -- we can point to that.

6 As far as measures, the heat pumps, if they
7 were adopted at -- at scale -- and it's difficult to
8 go ahead and project whether or not people going to
9 adopt heat pumps at scale especially in Missouri
10 given the price of electricity versus natural gas at
11 the moment. I said water heaters could have an
12 impact. I haven't seen any -- there's been pilot
13 studies in other states. I haven't seen any real
14 strong showings to point one way or the other. The
15 honest to God evidence, and it's not going to be a
16 really popular answer, but the -- the honest to God
17 answer is pricing electricity.

18 You know, in my direct testimony, and this
19 is coming from Ameren, I go -- I talk a little bit
20 about this and we all understand now at this point
21 that a TRC above one is a good thing. So if the TRC
22 of two, that's even better and if it's three, that's
23 is even -- that's even -- that's better than two,
24 right. Well, the TRC for their rates, if adopted at
25 scale, is on page 38 of my testimony. Residential

1 TOU ultimate savers has a TRC of 10.28. That's --
2 that's a real value at the end of the day that you
3 can point to. Now, again, there's trade-offs that
4 come with that, you know. The education that would
5 be involved in -- in making that, the adoption of
6 that. I think we're probably a ways off from doing
7 that, but I would encourage the Commission not to
8 forget that, that pricing -- I'm an economist. Like,
9 pricing matters, you know, and I think price signals
10 do matter at the end of the day.

11 So the nice thing about that is I don't
12 have to pay -- I don't have to do incentives for
13 that. I don't have to go ahead and -- not like
14 measures like we do with the uncertainty with -- with
15 MEEIA. You know, we've -- that's sunk investment, in
16 fact. You know, we've already paid for the AMI.
17 We've already paid for the software. Ameren's
18 putting on their own private LTE network just for
19 that, to support that. Well, not just that, but it
20 is supporting that. And that's all really expensive
21 stuff that they're getting a return on.

22 From our perspective, like, we just want
23 the benefit that -- from that investment. So that is
24 another way of curbing winter peak and summer peak.

25 Q. Dr. Marke, can you confirm what the

1 low-income eligibility criteria is for the LIWAP
2 program?

3 A. 200 percent federal poverty line. I'm 90
4 percent sure saying that, you know, with -- subject
5 to check. And I -- would be lower I think for a
6 LIHEAP. It would be lower for a LIHEAP.

7 Q. Do you know whether Ameren Missouri's
8 weatherization proposal offers expanded eligibility
9 which could help lower-income customers who struggle
10 paying their bills, but are not eligible for LIWAP?

11 A. It -- oh. No, I don't believe it would.
12 Now, Mr. Via got up here, and I -- I want to commend,
13 like, Ameren actually, like, on that. Like, you
14 know, there's a lot of things that we disagree with
15 about this, but they have worked with Office of
16 Public Counsel, they've worked with Staff, you know,
17 to craft these programs.

18 One of the things we've been doing to try
19 to address the LIWAP problem is utilizing, whether
20 it's through a rate case or even through MEEIA, like
21 approved MEEIAs, what we've said is use that money to
22 work on homes that are pass overs. And what I mean
23 by pass overs is homes that have mold, homes that are
24 hoarders, homes that have a bad roof or knob and tube
25 wiring that's messed up. All of -- there's -- which

1 is a lot of homes, right, that are just poorly made.
2 Well, under the construct today with federal funds,
3 community action agencies can't touch them. They're
4 hazardous homes. They can't touch them.

5 What we've done is say, all right, well,
6 let's take the money and we'll get -- Evergy's
7 actually been real good with this -- let's go ahead
8 and just get a couple roofers and knob and tube
9 wiring electricians on contract, and they'll go ahead
10 and redo that stuff. Because you can't use federal
11 funds for that, but as soon as you take care of that,
12 then you can use the federal funds to weatherize it.
13 So we're -- we're just trying to adapt and do what we
14 can. And, I mean, the reality is that some homes
15 just can't be weatherized. You hit a point of
16 diminishing returns. Like a big hole in a roof, you
17 know, at some point you just kind of walk away from
18 it.

19 But where there are examples of -- of
20 being flexible with that, the Company -- the
21 companies, plural, have been very receptive to that
22 idea.

23 Q. And I think one final question. If the
24 Commission rejects this application, do you think
25 that ARCs could provide equivalent demand response

1 services?

2 **A. Yes, but I don't think immediately.**

3 JUDGE PRIDGIN: Thank you, Dr. Marke.

4 Any further bench questions before we go to recross?

5 Any recross from Staff?

6 MS. JOHNSON: Yes, just briefly. Thank
7 you.

8 RECROSS-EXAMINATION

9 BY MS. JOHNSON:

10 Q. Dr. Marke, I want to clarify a few things
11 in your answers to Judge Pridgin. So the judge asked
12 about insulating customers who pay a MEEIA charge
13 from future events that impact the viability of the
14 plan. Have you considered an earnings opportunity
15 claw back that would serve as an offset to rate base
16 if the Company builds a new supply-side plant?

17 **A. Oh, I mean, yes. I haven't considered**
18 **that, but that's -- you know, typically you have**
19 **enough bandwidth to go ahead and work on a program**
20 **and say yes or no, not usually both. So, you know,**
21 **if I started getting in like the problem-solving**
22 **mode, I'm sure we could come up with -- with some**
23 **options. But I think it would be incumbent upon the**
24 **Commission saying that's what they want. And then we**
25 **can go back and figure out some options. But you're**

1 **right, a claw back method might be a viable option.**

2 Q. Okay. You also discussed with the judge
3 the adoption of heat pumps over gas. Just to
4 clarify, is an efficient heat pump more electrical
5 load than a gas furnace?

6 A. It is, yes. That -- yeah, I walked into
7 that. That -- that is true. The heat pumps are
8 going to increase load too, so. The point I think
9 Ameren was trying to make was peak reduction, but if
10 that heat pump was formerly a natural gas furnace,
11 then all things being equal, we would have been
12 better off with the natural gas furnace by reducing
13 that load.

14 Q. Okay. One more follow up related to the
15 adoption of the programs. So we've talked about
16 upgrades and the Bench has asked several questions
17 about if customers opt in, if they don't opt in. You
18 and Ms. Moore had a discussion about the customer who
19 isn't enrolled in the smart thermostat program, but
20 buys a more efficient HVAC, which you agreed would
21 reduce load on a warm September day. What portion of
22 that reduction should be attributed to Ameren?

23 A. I mean, I sit here today, and I challenge
24 myself. Like, I think that customer's going to buy
25 it regardless of the Ameren program. So in a vacuum,

1 having a more efficient HVAC will reduce load.
2 Will -- if Ameren doesn't have their program will
3 there still be HVAC -- efficient HVACs moving
4 forward. Yes, I think there will be. And again,
5 very generous tax breaks and market saturation
6 will -- it's just -- it's what's available at the end
7 of the day.

8 And if the goal really is let's just make
9 the cost cheaper for customers regardless of
10 attribution, then my God, let's go to a statewide
11 program, let's do bulk buying. Like, if the answer
12 is more heavy-handed government, we can go that route
13 and it'll -- you will save money. But again, it's
14 trade-offs. You're going to come at the expense of
15 market innovation and other things, so yeah.

16 MS. JOHNSON: Thank you for the
17 clarification. Nothing further from Staff.

18 JUDGE PRIDGIN: Ms. Johnson, thank you.
19 Any recross from Renew Missouri?

20 MR. LINHARES: None at the moment, Judge.

21 JUDGE PRIDGIN: All right. Thank you.
22 Recross from NRDC?

23 MS. RUBENSTEIN: No, thank you, Judge.

24 JUDGE PRIDGIN: Thank you. Any recross
25 from Ameren Missouri?

1 MS. MOORE: Yes. I just have a couple
2 follow-up questions I promise.

3 RE CROSS-EXAMINATION

4 BY MS. MOORE:

5 Q. Staff counsel just asked you about heat
6 pumps. Those -- that's not a -- Ameren's program
7 isn't a fuel-switching program. Correct?

8 A. No.

9 Q. That would apply to customers that don't
10 have natural gas available to heat their homes.
11 Correct?

12 A. The program's not limited to those
13 customers. So, I mean, if a customer is a natural
14 gas customer and wants to convert, there's nothing
15 preventing them from taking advantage of that. But
16 the comp -- the programs aren't promoting that.
17 There's effectively an agreement across the board
18 between the gas and the electric utilities that we're
19 not fuel switching.

20 Q. All right. Well, do you know how --
21 approximately what percent of residential customers
22 in Ameren's service territory do not heat with gas?

23 A. I don't. I mean, I have -- I've seen
24 those figures before. I know it's largely -- I know
25 areas where there are more than -- than not, but I

1 **don't know off the top of my head.**

2 MS. MOORE: All right. Thank you. I have
3 no further questions.

4 JUDGE PRIDGIN: All right. Thank you.
5 Dr. Marke, thank you very much. You can step down.
6 I'm sorry. Redirect. Excuse me. Ms. VanGerpen, I'm
7 sorry.

8 MS. VANGERPEN: That's okay.

9 REDIRECT EXAMINATION

10 BY MS. VANGERPEN:

11 Q. I just have a few definitions I want to
12 make sure that we have clear --

13 **A. Sure.**

14 Q. -- in the record.

15 You mentioned the LIWAP program. Could
16 you define what that is?

17 **A. Low-income Weatherization Assistance**
18 **Program, LIWAP. It's a federally-funded program, but**
19 **we supplement a version of that through rates in the**
20 **utilities' cost of service.**

21 Q. Okay. Thank you. You also mentioned the
22 LIHEAP program?

23 **A. Low-income -- gosh, it's either Housing or**
24 **Heating Energy Assistance Program which is -- so**
25 **LIHEAP is bill assistance. And natural gas has that**

1 option too. Water had it, but that's since been
2 eliminated.

3 Q. Thank you, Dr. Marke. And lastly the LTE.
4 Could you explain what that is?

5 A. Yes. LTE stands for -- it's the 5G stuff.
6 I can't think off the top of my head. It's -- it's
7 the -- I'm sorry, I can't. It's -- it is effectively
8 their -- AT&T, Verizon, they've got all, you know,
9 effectively LTE networks, so some of our utilities
10 utilize that resource. Ameren and Evergy now are
11 putting in their own LTE network to -- basically for
12 cybersecurity reasons is probably the primary reason.
13 Look, you know, the Windows debacle a week ago is a
14 good example of that.

15 MS. VANGERPEN: Great. Thank you,
16 Dr. Marke. Thank you, Judge.

17 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
18 Now you may step down. My apologies for earlier.

19 And we are now ready to switch topics to
20 EM&V. Did counsel wish to make mini openings on this
21 topic?

22 MS. JOHNSON: Yes, Judge.

23 MS. MOORE: Yes, your Honor.

24 JUDGE PRIDGIN: I'm assuming that the
25 Company's been going first; I think I missed -- so

1 Ameren Missouri, when you're ready.

2 MS. MOORE: Good afternoon. May it
3 please the Commission. Jennifer Moore again
4 appearing on behalf of Ameren Missouri. For the
5 issue today that -- it's whether the Commission
6 should adopt Ameren Missouri's EM&V plan proposed in
7 this docket. And I just want to make the Commission
8 aware that this EM&V plan is similar to the MEEIA 3
9 plan and also consistent with the Commission's rules.
10 And accordingly, the Company thinks that you should
11 adopt this plan as part of the MEEIA plan.

12 Now, this EMV process we're proposing as
13 has allowed for stakeholder input, and the Company
14 collaborated to make the process more transparent
15 dating back from the MEEIA 3 plan. The proposed EM&V
16 process is designed to maintain the collaboration
17 that reduced the amount of EMV disputes before the
18 Commission. The Company considered feedback from
19 MEEIA 3 and whether stakeholders -- and whether
20 stakeholders from -- whether that feedback is from
21 stakeholders or our -- the evaluation reports. And
22 the result is that a more open and transparent
23 process is needed for EM&V. And I think we've heard
24 testimony about that today too.

25 And so what I want to do is walk you

1 through all these documents everybody is talking
2 about and what that plan consists of. So here is the
3 Appendix E which is a residential program evaluation
4 plan template. So we take these plans, and everybody
5 has been talking about free ridership. And so if you
6 look at net impacts, so this evaluation plan would
7 take those free riderships in consideration and then
8 other stakeholders would have the opportunity to
9 comment on it and then there's a process evaluation
10 that we go through. Stakeholders contribute and have
11 an opportunity to say -- speak up and, you know, add
12 different things that they'd like to see done with
13 this evaluation for this plan. And then it would be
14 given to the evaluator to look over and then a scope
15 would be developed for the process of the EM&V.

16 And for specific details, Mr. Graser will
17 be able to give you some details.

18 Now, I want to make a distinction that
19 we've been talking today. So if you look at net
20 impacts, it says the net to gross is one. For the
21 multi-family income-eligible and even single-family
22 income-eligible programs, there will be no evaluation
23 of net to gross. So -- or excuse me -- free
24 ridership. So that one nets it out, and it's not
25 being considered. But for the income-eligible

1 programs, the nonenergy benefits are looked at. And
2 so for the MEEIA 3 cycle, we did look at whether or
3 not there was an impact on these income-eligible
4 programs on the customer bill.

5 And so again, this would have been gone
6 to the evaluator as an outline. People would have
7 commented on it. And then the evaluation report
8 comes out where everybody has a chance to comment on
9 it. So this one is from 2023 where I believe
10 Commissioner Holsman has been reading from, and this
11 will outline those nonenergy benefits for those
12 income-eligible customers and in -- our plan
13 outlines. And it has shown some benefit to customers
14 in the reduction of bills, and they've also seen that
15 it's more likely that -- and you can look at the more
16 details of what percentage that is -- it's more
17 likely that customers who participate in
18 income-eligible programs are less likely to be
19 disconnected. So we have more customers online
20 paying bills, and I think all customers receive a
21 benefit from that.

22 Then I want to go into part of this and
23 part of the Company's planning. So when evaluators
24 look at this and they look at the savings, they're
25 going to go to the Technical Resource Manual. This

1 is the volume one, and it's -- this volume is only 19
2 pages, but there is another; it will give you a user
3 index. But what we heard Staff express concern over
4 is that this document, this is all the changes that
5 we've made to the volume two -- is that volume three?
6 Those are documented, but this document has grown to
7 over a couple hundred pa -- well, I think it's not
8 quite 200 pages. And to give you some -- I checked
9 into this. Illinois has a statewide technical
10 resource plan. Their volume three is over a thousand
11 pages. So that's just the nature of, you know, when
12 you start looking at different measures and trying to
13 evaluate what -- what is out there, you want a
14 comprehensive index there.

15 And then, again, that gives you an idea
16 that it's organized so you can see the table of
17 contents. And then you'll have the measure
18 description and how it impacts that. And this is a
19 resource for evaluators for the Company and for
20 stakeholders to see.

21 Now, here we get more technical because
22 in the same subsection you have, you know, the
23 calculations. And I just want to highlight because I
24 want to stress that I want you to ask Mr. Graser
25 these questions. So in that table, there will be

1 footnote references. And a few of the footnotes
2 there you cannot get to that electronic copy of that
3 water heat recovery calculator. Or it's not a
4 calculator, but it's a PDF of a manual for that. And
5 so talk to Mr. Graser because we are trying to make
6 this as comprehensive as possible, but again, this
7 process began and the Commission originally approved
8 this document in 2018, and it's undergone some
9 changes that you saw there in the table here.

10 Now we're talking about another component
11 of EM&V which is in our reviewed Appendix F and
12 that's the deemed savings table. And in there you
13 can see we -- all of the changes that you get in
14 October for the TRM updates include this deemed
15 savings log. And so this is what has been tracked
16 and approved.

17 And then this is a snapshot of all the
18 measures listed. And this deemed savings table, I
19 don't believe that we offer the clothes washer
20 anymore, but -- so that would be one of the measures
21 that would be included.

22 So I just want to, you know, so this
23 is -- kind of gives you, explains of what we've been
24 filing and what we're talking about in the abstract.
25 Visual learners, that might be helpful. And so I

1 want you to also understand that when we file the TRM
2 update, we have a 2020 -- a 2023 evaluation that
3 we're working on in 2024. And then we're filing that
4 update, will be coming up here in October of 2024
5 filing that update and then implementing the
6 measures. And you can see that there's a timing
7 difference. So when we're talk about the deemed
8 savings table and Mr. Graser is talking about just
9 updating this portion prospectively agreeing to it
10 sooner, it's more of a timing issue. And so I
11 welcome you to ask him more questions about that so
12 you can understand the process that we've been
13 debating the past week.

14 I think, you know, we've provided a lot
15 of detail in the plan and invite you to have more
16 questions. Overall, this is the same format and
17 structure with updates, version improvements if you
18 will. When your iPhone tells you to update, this is
19 same thing that we've been doing as we've been going
20 along. So we believe that this EM&V is reasonable
21 and the planned evaluation does have an outline for
22 each program. We do document the prior version of
23 the TRM that was approved, and we provide that to the
24 Commission and the stakeholders when they review it.

25 And for all of these reasons, we believe

1 it's reasonable and the Commission should approve the
2 EM&V program and its associated Technical Resource
3 Manual and deemed savings chart. And that concludes,
4 if you have any questions.

5 JUDGE PRIDGIN: Ms. Moore, thank you.
6 Any bench questions? Counsel, thank you.

7 MS. MOORE: Thank you.

8 JUDGE PRIDGIN: Any opening statement
9 from Staff?

10 MR. PRINGLE: Yes, Judge, thank you.

11 JUDGE PRIDGIN: Mr. Pringle, when you're
12 ready.

13 MR. PRINGLE: And for the record this is
14 now Travis Pringle representing Staff. Good
15 afternoon, Judge Pridgin, Chair Hahn, Commissioners.
16 And may it please the Commission. As we've heard
17 this week, the devil is in the details. And these
18 details are essential to implementing a successful
19 EM&V program. Like the rest of the application
20 Ameren has submitted, Staff recommends rejecting
21 Ameren's proposed EM&V plan. What Ameren has
22 submitted regarding EM&V is simply not developed
23 enough to measure and verify the demand savings for
24 each program.

25 Things to keep in mind when reviewing

1 Ameren's proposed EM&V plan include are the results
2 of EM&V applied on a prospective or retrospective
3 basis. While Staff does not directly address this
4 question in its testimony, Staff witness J Luebbert
5 does discuss the impact of retrospective versus
6 prospective EM&V on seasonality and Staff supports
7 the position of OPC witness Dr. Marke who recommends
8 that EM&V be done on a retrospective basis. I
9 encourage you to ask both -- questions to both
10 Mr. Luebbert and Dr. Marke on why a retrospective
11 EM&V is essential in the context of MEEIA.

12 Staff has multiple concerns about issues
13 that Ameren has failed to address in its proposed
14 EM&V plan. This includes the omission of the
15 following: First, there is the rebound effect. The
16 rebound effect arises in energy efficiency programs
17 when a more efficient asset like an appliance or HVAC
18 unit is now being used more than it previously was.
19 Staff witness Dr. Hari Poudel has put forth testimony
20 describing this effect and is happy to take any
21 questions you may have.

22 The interactive effects. The interaction
23 of primary and secondary measures within the
24 application, the throughput disincentives, and how
25 Ameren intends to use this information to inform

1 potential future MEEIA cycles must be taken into
2 account. Staff witness Justin Tevie is available to
3 answer any questions you may have on this topic.

4 The principal-agent issue. This problem
5 arises when one party to a contract, in this case the
6 ratepayers, cannot directly observe the actions or
7 efforts of the other party, the agent, in this case
8 Ameren Missouri. The ratepayers can only observe the
9 outcomes of Ameren's actions. Since the actions of
10 Ameren cannot be observed, ratepayers have no say in
11 pushing Ameren to pursue the most optimal action.
12 Staff witness Justin Tevie is also available to
13 answer questions you have on this topic.

14 Back to the Inflation Reduction Act. As
15 pointed out earlier in this hearing, Staff's
16 independent auditor, Evergreen Economics, suggests
17 the IRA products be entirely excluded from Ameren's
18 MEEIA savings claims. If IRA products are to be
19 included, a low negotiated net-to-gross ratio should
20 be used to reflect the dominant influence of the IRA.
21 Staff agrees with Evergreen's suggestion and
22 recommends a ratio of no higher than 10 percent.
23 Staff witness Mark Kiesling is available to answer
24 any questions you may have on this topic.

25 Free ridership. Again as discussed

1 during the IRA portion of this hearing, the current
2 application does not adequately provide restrictions
3 and safeguards to prevent or minimize free ridership.
4 Staff witnesses Mark Kiesling and Francisco Del Pozo
5 are available to answer any additional questions you
6 may have on this topic.

7 Spillover. It is important to note the
8 presence of spillover prior to the implementation of
9 these programs. Staff witness Dr. Hari Poudel has
10 put forth testimony describing this effect and is
11 happy to take your subject.

12 Time-based rates. This will tie into the
13 net throughout disincentive issue later in these
14 proceedings. Without precise and updated savings
15 data, it is very difficult to determine realistic net
16 impacts. For EM&V, Dr. Hari Poudel has put forward
17 testimony describing this and is happy to take any
18 questions you may have.

19 Also tomorrow when we do net throughput
20 disincentive issue, I implore you to ask Sarah Lange
21 well this about as well.

22 The Commission is also being asked to
23 determine if EM&V should be completed by a single
24 independent Commissioner-approved consultant with no
25 utility oversight. The answer is yes. Independence

1 of EM&V is crucial to identifying the net benefits of
2 a given MEEIA cycle. EM&V process to date has relied
3 on several assumptions, and the verification has
4 occurred for a relatively small size -- small sample
5 size of measures. Further, after final EM&V reports
6 are filed for any given program year, there is not a
7 process in place to ensure those evaluated savings
8 actually occurred as they were deemed to have. Staff
9 witnesses Dr. Poudel and Brad Fortson are happy to
10 take any questions you have on this issue.

11 Next the Commission is being asked to
12 approve, modify, or reject the Technical Resource
13 Manual, or TRM, and the deemed savings table. Both
14 should be rejected. Both are voluminous and give the
15 appearance of providing very accurate estimates of
16 energy and demand savings, but the sources utilized
17 for thousands of assumptions included are opaque.
18 Many of the assumptions within the deemed savings
19 table are hard coded without citations. Many of the
20 citations that do exist within the TRM and deemed
21 savings tables are no longer valid. Citations that
22 are still valid within the TRM and deemed savings
23 table are largely vague references to entire
24 documents that are often hundreds of pages long.

25 In this case Staff performed a limited

1 review of the TRM and deemed savings table and
2 identified assumed values that do not appear
3 reasonable are aligned on studies that are likely
4 outdated and many of which did not provide clear
5 citation to justifications for the assumptions.
6 Staff witness J Luebbert is available today to answer
7 any effects [sic] you may have regarding the flaws in
8 the TRM and deemed savings table and how this affects
9 EM&V.

10 Staff further argues that no MEEIA cycle
11 should be approved prior to the submission of a TRM
12 and deemed savings table with serviceable links and
13 page-specific citations of the assumptions that are
14 reasonable, justified, and well-documented. Staff
15 witness J Luebbert is available to answer any
16 questions you may have about the importance of
17 these -- of assuming these documents are reasonable,
18 justified, and well-documented.

19 Also as a note, when it comes to the
20 low-income programs, there is also an impact of that
21 on the NTD as well and I implore you to save
22 questions about that for tomorrow when Sarah Lange
23 comes up as well.

24 Thank you for your time. And if you have
25 any questions, I'm happy to entertain them.

1 JUDGE PRIDGIN: Mr. Pringle, thank you.
2 Any bench questions? All right. Mr. Pringle, thank
3 you.

4 MR. PRINGLE: Thank you.

5 JUDGE PRIDGIN: Any opening on behalf of
6 Renew Missouri?

7 MR. LINHARES: None at this time, Judge.

8 JUDGE PRIDGIN: Thank you. Any opening
9 on behalf of NRDC?

10 MS. RUBENSTEIN: No, thank you, Judge.

11 JUDGE PRIDGIN: Thank you. Any opening
12 behalf of Public Counsel?

13 MS. VANGERPEN: Yes, Judge, thank you.

14 JUDGE PRIDGIN: You're welcome. Whenever
15 you're ready.

16 MS. VANGERPEN: Good afternoon again,
17 Chair Hahn, Commissioners, Judge Pridgin. May it
18 please the Commission. We're here today to talk
19 about the evaluation, measurement, and verification
20 process or the EM&V process. The EM&V process in a
21 nutshell is trying to determine what amount of energy
22 savings exist and what can be attributed to Ameren.
23 It's trying to take that maybe that I talked about in
24 my main opening and turn it into something that's
25 more verified. But as I mentioned during that main

1 opening, this is really, really hard. We're trying
2 to estimate a counterfactual here. So what's the OPC
3 asking you guys -- you all to do.

4 The OPC sees three possibilities for
5 moving forward. First and most simply, we're --
6 Commissioners, we're asking that you reject Ameren's
7 amended application. This of course would eliminate
8 the need to do any sort of EM&V process. Second, you
9 could move forward with Dr. Marke's suggestion
10 towards a statewide program and order a limited,
11 simple EM&V as he discusses. Or third, if you wish
12 to move forward with MEEIA energy efficiency programs
13 and an EM&V, the OPC requests that you provide the
14 parties some guidance on the considerations that are
15 listed in the list of issues.

16 These considerations include things like
17 operational inefficiencies which would account for
18 things like individuals forgetting to change their
19 air filters in their -- in their furnaces. It would
20 also include time-based rates and the rebound effect
21 where an individual uses more energy after adopting
22 an energy efficiency measure. Each of these items
23 affect the attribution due to Ameren. Dr. Marke
24 includes in his surrebuttal testimony a table that
25 gives estimated reductions for many of those

1 considerations.

2 Without your guidance on these issues
3 now, should you approve any MEEIA programs, it's
4 likely that we will have very contentious EM&V
5 dockets in the future.

6 If you move forward with this third
7 option, the OPC also encourages you, Commissioners,
8 to require that the EM&V be completed by a single,
9 independent, Commission-approved consultant with no
10 utility oversight. As Staff has stated throughout
11 the hearing, the details here matter. With EM&V, the
12 inputs really matter. To ensure the objectivity of
13 any EM&V that is completed, the Commission should
14 move away from Ameren overseeing the EM -- EM&V
15 consultant and move towards a single, independent
16 consultant.

17 And lastly, we've already touched a bit
18 on the topic of prospective versus a retrospective
19 EM&V during this hearing. This is one of our listed
20 subissues in this issue as well. As Dr. Marke has
21 testified, a prospective EM&V process requires you,
22 Commission, to first determine the savings attributed
23 to Ameren. This again would require a consideration
24 of that -- those list of con -- list of issues that
25 are included in our list of issues. A retrospective

1 EM&V process requires that those considerations be
2 made after the programs are implemented, and the OPC
3 believes that a retrospective process should be used
4 moving forward, but again, it will also require
5 consideration of those -- those listed issues as
6 well.

7 And again, Commissioners, I encourage you
8 to ask Dr. Marke any questions that you have. And
9 I'm happy to take any questions that you have now as
10 well.

11 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
12 Any bench questions? All right. Thank you, Counsel.

13 MS. VANGERPEN: Thank you.

14 JUDGE PRIDGIN: I believe we are ready to
15 go to -- is it Mr. Graser, I hope I'm pronouncing
16 that correctly, from Ameren Missouri.

17 MS. MOORE: I believe that is correct,
18 your Honor. And as a reminder, he was sworn in
19 yesterday, and so we would tender him for cross, as
20 soon as he arrives.

21 JUDGE PRIDGIN: Very good. Thank you.
22 Mr. Graser, I'll remind you you're still under oath.

23 (Witness previously sworn.)

24 NEIL GRASER

25 the witness, having been first duly sworn,

1 testified as follows:

2 JUDGE PRIDGIN: All right. Any
3 cross-examination for this witness from Renew
4 Missouri?

5 MR. LINHARES: No, thank you.

6 JUDGE PRIDGIN: Thank you. Any cross
7 from NRDC?

8 MS. RUBENSTEIN: No, thank you, Judge.

9 JUDGE PRIDGIN: Any cross from Staff?

10 MR. PRINGLE: Yes, Judge, thank you.

11 CROSS-EXAMINATION

12 BY MR. PRINGLE:

13 Q. Good afternoon, Mr. Graser.

14 A. **Good afternoon.**

15 Q. And were you present when Ms. Moore gave
16 her opening statement?

17 A. **Yes.**

18 Q. And did you hear her say that the Illinois
19 TRM volume three is over 1,000 pages long?

20 A. **I did.**

21 Q. Do you know, are there any references or
22 citation to the Illinois TRM in Ameren's TRM?

23 A. **Yes, there are.**

24 Q. Do you know how many?

25 A. **I do not know off the top of my head.**

1 Q. Thank you, sir.

2 One moment, Judge.

3 Mr. Graser, the citations that are in the
4 Ameren TRM to the Illinois TRM, are you aware, are
5 they cita -- like, are they citations to the document
6 as a whole, or do they have specific page citations?

7 **A. Subject to check, I believe there are**
8 **specific page citations.**

9 Q. But that is subject to check at this time?

10 **A. Yes. I don't know off the top of my head.**

11 MR. PRINGLE: Thank you, sir. No further
12 questions at this time, Judge.

13 JUDGE PRIDGIN: Mr. Pringle, thank you.
14 Any cross from OPC?

15 MS. VANGERPEN: No, thank you.

16 JUDGE PRIDGIN: All right. Thank you.

17 Any bench questions? Seeing none. Any -- no bench
18 questions I guess, so no cross. Any redirect?

19 MS. MOORE: No, your Honor.

20 JUDGE PRIDGIN: All right. Thank you.

21 Mr. Graser, thank you.

22 MS. MOORE: Your Honor, I don't believe
23 Mr. Graser is going to appear again, so I would move
24 to -- I move to admit Ameren Exhibit 110, which is
25 the rebuttal testimony of J., just the letter J.,

1 Neil Graser. And -- I apologize. He -- I -- he's
2 probably cheering now. He is on TV; he is in that
3 list of -- so I will withdraw -- we'll move tomorrow.
4 I apologize.

5 JUDGE PRIDGIN: No problem. Thank you.

6 MS. MOORE: God, his hope was up.

7 JUDGE PRIDGIN: All right. The next, we
8 can go on to a -- several Staff witnesses. I think
9 Mr. Kiesling is the first one scheduled do appear.

10 MR. PRINGLE: That is correct, Judge.

11 JUDGE PRIDGIN: All right. Mr. Kiesling,
12 have you been sworn in yet?

13 MR. KIESLING: Yes.

14 (Witness previously sworn.)

15 MARK KIESLING

16 the witness, having been first duly sworn,
17 testified as follows:

18 JUDGE PRIDGIN: All right. You are still
19 under oath. Anything from Staff before he stands
20 cross?

21 MR. PRINGLE: No. At this time Staff
22 tenders Mr. Kiesling for cross-examination.

23 JUDGE PRIDGIN: All right. Thank you.
24 Any cross from Public Counsel?

25 MS. VANGERPEN: No, thank you.

1 JUDGE PRIDGIN: Any cross from Renew
2 Missouri?

3 MR. LINHARES: No, thank you, your Honor.

4 JUDGE PRIDGIN: Any cross from NRDC?

5 MS. RUBENSTEIN: No, thank you, Judge.

6 JUDGE PRIDGIN: And cross from Ameren
7 Missouri?

8 MS. HERNANDEZ: No, thank you.

9 JUDGE PRIDGIN: Any bench questions? I
10 think I have one.

11 QUESTIONS

12 BY JUDGE PRIDGIN:

13 Q. And if you're not the proper person I
14 should ask, feel free to let me know who I should
15 ask. I believe it's Staff's position that the EM&V
16 approach should be rejected. Is that correct?

17 **A. Yes.**

18 Q. If the Commission were to approve either
19 the entire application or maybe just a portion of it,
20 what would be Staff's proposed modifications that
21 should be made to the EM&V approach to address some
22 of Staff's concerns?

23 **A. I believe Staff witness J Luebbert would**
24 **probably be the best to speak to that.**

25 JUDGE PRIDGIN: All right. Thank you. I

1 think that's all I have. Any other bench questions?

2 Any recross based on my questions? Public Counsel?

3 MR. PRINGLE: It's Staff's witness,

4 Judge.

5 JUDGE PRIDGIN: Excuse me. Well, I was

6 going to ask any recross based on my questions, so.

7 Public Counsel, any cross?

8 MS. VANGERPEN: No, thank you.

9 JUDGE PRIDGIN: Renew Missouri?

10 MR. LINHARES: None, thank you.

11 JUDGE PRIDGIN: NRDC?

12 MS. RUBENSTEIN: No, thank you.

13 JUDGE PRIDGIN: Ameren Missouri?

14 MS. HERNANDEZ: No, thank you, Judge.

15 JUDGE PRIDGIN: Any redirect?

16 MR. PRINGLE: No redirect, Judge, thank

17 you.

18 JUDGE PRIDGIN: Thank you. Thank you.

19 You may step down. Next witness, Staff witness, is

20 it Tevie? Am I pronouncing that correctly?

21 MR. PRINGLE: Justin Tevie.

22 JUDGE PRIDGIN: Tevie, excuse me. And,

23 Mr. Tevie, you're still under oath.

24 MR. TEVIE: Yes.

25 (Witness previously sworn.)

1 JUSTIN TEVIE

2 the witness, having been first duly sworn,
3 testified as follows:

4 JUDGE PRIDGIN: Anything from Staff
5 before he stands cross?

6 MR. PRINGLE: No, Judge. At this time
7 Staff tenders Mr. Tevie for cross-examination.

8 JUDGE PRIDGIN: All right. Thank you.
9 Any cross from Public Counsel?

10 MS. VANGERPEN: No, thank you.

11 JUDGE PRIDGIN: Any cross from Renew
12 Missouri?

13 MR. LINHARES: No, thank you.

14 JUDGE PRIDGIN: Cross from NRDC?

15 MS. RUBENSTEIN: No, thank you.

16 JUDGE PRIDGIN: Ameren Missouri?

17 MS. HERNANDEZ: No, thank you, Judge.

18 JUDGE PRIDGIN: Any bench questions? All
19 right. Thank you very much. You may step down.

20 MR. TEVIE: Thank you.

21 JUDGE PRIDGIN: Next wit --

22 MR. PRINGLE: Judge --

23 JUDGE PRIDGIN: I'm sorry, go ahead.

24 MR. PRINGLE: For Staff's next two
25 witnesses, this will be the first time both have come

1 to the stand, so I will have to go through direct.

2 JUDGE PRIDGIN: Very good. Thank you. I
3 believe Mr. Del Pozo.

4 MR. PRINGLE: That is correct.

5 (Witness sworn.)

6 FRANCISCO DEL POZO

7 the witness, having been first duly sworn,
8 testified as follows:

9 JUDGE PRIDGIN: Thank you very much. You
10 may have a seat. Mr. Pringle, when you're ready,
11 sir.

12 MR. PRINGLE: Thank you, Judge.

13 DIRECT EXAMINATION

14 BY MR. PRINGLE:

15 Q. Good afternoon, Mr. Del Pozo.

16 A. **Good afternoon.**

17 Q. Please state and spell your name for the
18 record.

19 A. **F-r-a-n-c-i-s-c-o, space, D-e-l, space,**
20 **P-o-z-o.**

21 Q. Thank you, Mr. Del Pozo. And by whom are
22 you employed and in what capacity?

23 A. **Public Service Commission. I am economist**
24 **in the tariff rate design department.**

25 Q. Thank you, Mr. Del Pozo. And are you the

1 same Francisco Del Pozo who caused to sponsor
2 rebuttal testimony in this matter that has been
3 premarked as Staff Exhibit 215?

4 **A. Yes.**

5 Q. At this time do you have any corrections
6 to make to Exhibit 215?

7 **A. Yes. I have a small correction to do in**
8 **the page number 2, line 11. It should be replacement**
9 **on failure instead of return on equity. Replacement**
10 **on failure, f-a-i-l-u-r-e.**

11 Q. Do you have any additional corrections at
12 this time, Mr. Del Pozo?

13 **A. No, that's --**

14 Q. Thank you, sir. And is the information
15 contained in Exhibit 215 true and correct to the best
16 of your belief and knowledge?

17 **A. Yes, it is.**

18 Q. If I were to ask you the same questions
19 within Exhibit 215, would your answers be the same or
20 substantially similar?

21 **A. Would be the same.**

22 MR. PRINGLE: Thank you, Mr. Del Pozo.
23 And, Judge, this will be Mr. Del Pozo's only time on
24 the stand for these proceedings, so at this time I
25 move to enter Exhibit 215 on the record.

1 JUDGE PRIDGIN: And I'm -- that's his
2 rebuttal?

3 MR. PRINGLE: Yes. All Mr. Del Pozo has
4 in this is his rebuttal testimony, correct.

5 JUDGE PRIDGIN: Exhibit 215 has been
6 offered. Any objections? Hearing no objections,
7 Exhibit 215 is admitted into evidence.

8 (Staff Exhibit 215 was admitted and made
9 a part of this record.)

10 JUDGE PRIDGIN: And he's ready for cross.
11 Is that correct?

12 MR. PRINGLE: That is correct, Judge. At
13 this time Staff tender Mr. Del Pozo for
14 cross-examination.

15 JUDGE PRIDGIN: Al right. Thank you.
16 Any cross examination, Public Counsel?

17 MS. VANGERPEN: No, thank you.

18 JUDGE PRIDGIN: Any cross from Renew
19 Missouri?

20 MR. LINHARES: No, thank you.

21 JUDGE PRIDGIN: Thank you. Any cross
22 from NRDC?

23 MS. RUBENSTEIN: No, thank you.

24 JUDGE PRIDGIN: Ameren Missouri?

25 MS. HERNANDEZ: No, thank you, Judge.

1 JUDGE PRIDGIN: Any bench questions for
2 this witness? All right. Hearing none, thank you
3 very much.

4 **THE WITNESS: Thank you.**

5 JUDGE PRIDGIN: And is it Dr. Poudel the
6 next witness. Is that correct?

7 MR. PRINGLE: That is correct, Judge,
8 Dr. Hari Poudel.

9 (Witness sworn.)

10 DR. HARI POUDEL
11 the witness, having been first duly sworn,
12 testified as follows:

13 JUDGE PRIDGIN: Thank you. You may have
14 a seat. And, Mr. Pringle, when you're ready, sir.

15 MR. PRINGLE: Thank you, Judge.

16 DIRECT EXAMINATION

17 BY MR. PRINGLE:

18 Q. Good afternoon, Dr. Poudel.

19 **A. Good afternoon.**

20 Q. Please state and spell your name for the
21 record.

22 **A. Hari, H-a-r-i, middle initial K., last
23 name Poudel, P-o-u-d-e-l.**

24 Q. Thank you, Dr. Poudel. And are you the
25 same -- oh, wait, sorry. By whom are you employed

1 and in what capacity?

2 **A. I am employed by the Missouri Public**
3 **Service Commission in the tariff rate design**
4 **department in the industry analysis division as an**
5 **economist.**

6 Q. Thank you for that, Dr. Poudel. And are
7 you the same Dr. Poudel who caused to sponsor in
8 these proceedings direct, rebuttal, and surrebuttal
9 testimony which have been premarked as Staff
10 Exhibits 216, 217, and 218?

11 **A. Yes.**

12 Q. At this time do you have any corrections
13 to make to Exhibits 216, 217, or 218?

14 **A. Yes. I have two correction. In my**
15 **surrebuttal testimony on page 4 and 5, if you go to**
16 **the footnote, the footnote 6 should be, instead of**
17 **Dr. Geoff Marke, it should be J. Neil Graser, Ameren**
18 **Missouri. And on page 5, footnote 7, it should be**
19 **Dr. Geoff Marke instead of J. Neil Graser, just it's**
20 **a flip flop.**

21 Q. And do you have any further -- further
22 corrections to make this at this time, sir?

23 **A. No, I am not aware of any.**

24 Q. Thank you, Dr. Poudel. And is the
25 information contained in Exhibits 216, 217, and 218

1 true and correct to the best of your belief and
2 knowledge?

3 **A. Yes, I do.**

4 Q. If I were to ask you the same questions
5 within Exhibits 216, 217, and 218, would your answers
6 be the same or substantially similar?

7 **A. Would be substantially similar.**

8 MR. PRINGLE: Thank you, Dr. Poudel. And
9 Dr. Poudel will be taking the stand again so we will
10 not be entering his testimony on the record at this
11 time. But Staff does tender Dr. Poudel for
12 cross-examination.

13 JUDGE PRIDGIN: Mr. Pringle, thank you.
14 Any cross-examination from Public Counsel?

15 MS. VANGERPEN: No, thank you.

16 JUDGE PRIDGIN: Any cross from Renew
17 Missouri?

18 MR. LINHARES: None, thank you.

19 JUDGE PRIDGIN: Thank you. Any cross
20 from NRDC?

21 MS. RUBENSTEIN: No, thank you, Judge.

22 JUDGE PRIDGIN: Any from Ameren Missouri?

23 MS. HERNANDEZ: No questions, thank you.

24 JUDGE PRIDGIN: All right. Thank you.
25 Any bench questions for this witness? All right.

1 Hearing none, Dr. Poudel, thank you very much. The
2 next scheduled witness I believe is Brad Fortson from
3 Staff.

4 MR. PRINGLE: That is correct, Judge.
5 And this will be Mr. Fortson's last time taking the
6 stand, so prior to cross-examination, I would like to
7 move to enter his testimony on the record.

8 JUDGE PRIDGIN: If you have those
9 exhibits numbers, whenever you're ready.

10 MR. PRINGLE: Yes. Those will be
11 Exhibits 206, the direct testimony of Brad
12 Fortson; 207, the rebuttal testimony of Brad Fortson;
13 and 208, the surrebuttal testimony of Brad Fortson.

14 JUDGE PRIDGIN: Any objections? Hearing
15 none, Exhibits 206, 207, and 208 are admitted into
16 evidence.

17 (Staff Exhibits 206, 207, and 208 were
18 admitted and made a part of this record.)

19 JUDGE PRIDGIN: Anything further before
20 he stands cross?

21 MR. PRINGLE: No. At this time Staff
22 tenders Mr. Fortson for cross-examination.

23 (Witness previously sworn.)

24 BRAD FORTSON

25 the witness, having been first duly sworn,

1 testified as follows:

2 JUDGE PRIDGIN: Mr. Pringle, thank you.
3 Any cross from Public Counsel?

4 MS. VANGERPEN: No, thank you.

5 JUDGE PRIDGIN: Any cross from Renew
6 Missouri?

7 MR. LINHARES: No, thank you, your Honor.

8 JUDGE PRIDGIN: Cross from NRDC?

9 MS. RUBENSTEIN: No, thank you.

10 JUDGE PRIDGIN: Ameren Missouri?

11 MS. HERNANDEZ: No, thank you, Judge.

12 JUDGE PRIDGIN: Any bench questions? All
13 right. Thank you very much. You may step down. Is
14 it Mr. Luebbert who's the next witness?

15 MR. PRINGLE: Yes. Mr. J Luebbert. And,
16 Judge, Mr. Luebbert will be taking the stand a few
17 more times in these proceedings, so at this time we
18 tender Mr. Luebbert for cross-examination.

19 JUDGE PRIDGIN: Mr. Pringle, thank you.

20 (Witness previously sworn.)

21 J LUEBBERT

22 the witness, having been first duly sworn,
23 testified as follows:

24 JUDGE PRIDGIN: Any cross from Public
25 Counsel?

1 MS. VANGERPEN: No, thank you.

2 JUDGE PRIDGIN: Renew Missouri, any
3 cross?

4 MR. LINHARES: No, thank you.

5 JUDGE PRIDGIN: NRDC?

6 MS. RUBENSTEIN: No, thank you.

7 JUDGE PRIDGIN: Ameren Missouri?

8 MR. HOLTHAUS: None, thank you.

9 JUDGE PRIDGIN: All right. Any bench
10 questions? I do I think -- Commission Mitchell, go
11 ahead, sir.

12 QUESTIONS

13 BY COMMISSIONER MITCHELL:

14 Q. So we've heard a bit about the
15 completeness and reliability of the data in the TRM.
16 And could you -- could you elaborate a little bit on
17 that or give us your opinion on what you think the
18 reliability of that data is?

19 A. I can. I guess -- so I think one thing to
20 keep in mind is that the TRM documents, I think there
21 are three documents that Ameren's asking approval of,
22 those also feed into deemed savings tables where
23 they're utilizing some of the formulas that are
24 included within the TRM to then calculate an
25 estimated annual energy savings amount from each

1 measure. And then they're utilizing a factor to
2 multiply by that energy savings amount to come up
3 with a -- with Ameren's estimated demand impact. And
4 like I mentioned before, that's -- that's limited to
5 one time period.

6 So we did -- we did some analysis of
7 the -- the TRM early on when Ameren first filed its
8 application in this case. It was -- it was in 2023.
9 And we identified that there were a lot of links
10 either broken or that there were a lot of assumptions
11 that were included there that just didn't have any
12 citations. When you're thinking about estimating the
13 energy savings value from installing one measure, and
14 that's how granular this -- this document is getting,
15 you can imagine that there are a lot of assumptions
16 that go into that, some of them being the existing
17 equipment type, some of them being the expected
18 useful life. There may be hours of use in a given
19 year that are -- that is going in as an assumption.
20 A lot of different variables that can vary not only
21 by the piece of equipment, but also by the location,
22 your climate. You know, certain -- certain measures
23 are going to operate more frequently here in the
24 Midwest then they might in the Northeast and vice
25 versa. Certain measures are going to operate less

1 here than they would in another location, maybe in,
2 you know, Southern California and vice versa.

3 Again, it's, I know we sound like broken
4 records here over this last week, but the details
5 really matter. And it matters for a number of
6 reasons. For the TRM and the DM savings table what I
7 would say is that in the review that we've done, I --
8 we struggled to walk through a single measure or let
9 alone, you know, a series of measures and not come to
10 a point that a number was hard coded that we couldn't
11 follow back with a citation. Or if there was a
12 citation, maybe it was a reference to, I think as
13 Mr. Pringle mentioned, maybe it's a reference to a
14 document that's a thousand pages long or one that we
15 didn't have whenever the Company provided that --
16 that document.

17 So for those citations, let's just kind of
18 break it into those categories, right. The ones that
19 don't have citations, you have a hard-coded number
20 that's maybe out ten decimal places and we don't have
21 any support for it. I don't think that there's any
22 questions that that's problematic, especially when
23 we're considering kind of the outcome of what the TRM
24 and the deemed savings table is providing.

25 Citations to -- with links to a source

1 that no longer exists or we can't identify where it
2 is. Obviously that's -- that's problematic. Kind of
3 falls into that same bucket as the prior one.

4 And then the third is we have some
5 citations to some very large documents, but
6 without -- what we've asked for is page-specific
7 citations or to the extent that it comes from a
8 table, a file, an Excel file, tell us what cell
9 you're using for that assumption. And the reason
10 that's important is that some of these documents that
11 they may be referencing might be talking about
12 various different types of equipment or various
13 different assumptions that -- that go into the
14 calculation of a very -- a detailed formula.

15 If you kind of look through the TRM, it
16 doesn't take long to see that there are some formulas
17 that might have, you know, upwards of seven to ten
18 variables. So you're thinking about that many
19 variables and having compounding issues of not having
20 citations there, it gets out of hand really quick.

21 I think your original question is what --
22 what issues we had with kind of the documentation and
23 the reliability. We started to look through some of
24 those that did have citations, and we found problems
25 with the assumptions that were included there. Some

1 of the baselines there were being utilized, and one
2 specifically that one of the Staff witnesses pointed
3 out in their direct testimony -- may have been
4 rebuttal testimony, I'm sorry -- is the issue of what
5 baseline do you utilize for HVAC equipment. And to
6 give -- I don't want to get too far in the weeds
7 here, but the -- the baseline is essentially what is
8 the least efficient equipment that's available for
9 replacement, as a kind of high level way to think
10 about it.

11 Instead of utilizing a baseline of
12 equipment that's available today what the Company
13 would utilize in their deemed savings table is a
14 seasonal energy efficiency rating much, much lower
15 than that. So just as an example, I think instead of
16 utilizing a using SEER 14, which I believe is the
17 standard today, they were using somewhere between a
18 SEER 8 and a SEER 9. What that does is it drives the
19 energy savings estimate much higher than what's
20 realistically expected to occur. So you have
21 overstated savings.

22 Now, I can't stress enough that the TRM
23 and the deemed savings table are kind of the, I want
24 to say to an extent, the backbone that Ameren's
25 basing all of their estimates on in this application.

1 They're basing those program summary sheets that we
2 talked about earlier today in Appendix A on the -- to
3 determine what the gross and net megawatt and
4 megawatt hour savings are. They're basing those on
5 the deemed savings tables. They're basing their
6 program target and their earnings opportunity targets
7 just like we talked about with that.

8 But then they're -- they're also planning
9 to utilize that, those deemed savings tables and
10 the -- the TRM in the calculation of the throughput
11 disincentive which as some others have referred to as
12 the lost revenues, right. So the estimate that they
13 have for the amount of energy that you've saved,
14 they're going to multiply that by the net marginal
15 rate. And Dr. Poudel talks a little bit about this
16 and we can -- I implore you to ask him about that;
17 I'm sure he'd be happy to talk about that process.
18 But you're utilizing that assumption, that flawed
19 assumption kind of over and over and over through
20 this process, not only on the front end as they're
21 asking for approval of their application, but also
22 then on the back end when it comes time to charge --
23 charge ratepayers for the net throughput
24 disincentive. And then they're also utilizing that
25 to some extent for the earnings opportunity as well.

1 So evaluating that -- that energy and demand savings.

2 So you start kind of cascading or
3 snowballing this -- this issue of unreliable
4 information or overstated information and it -- it
5 picks up steam and it -- you start adding more and
6 more assumptions on top of it and it becomes more
7 problematic. That's where we are with that.

8 Q. And can -- can you help me understand the
9 origins of that document? Where did those documents
10 come from?

11 A. So I can -- I can give you some
12 perspective from Cycle 3 on is probably the best that
13 I can do today. And that's because I haven't been
14 with -- I came to the commission during Cycle 2. The
15 TRM was proposed; Ameren requested approval of the
16 TRM and a deemed savings table, I want to say it was
17 in 2018 for Cycle 3. I know we looked at some of the
18 revision logs that -- that were talked about earlier
19 today. I know that the TRM is kind of -- the way
20 that it's framed at least I think within the
21 application is that this is an Ameren document.

22 Now, I'm -- I've heard that there's, you
23 know, there's some source documentation that they're
24 relying on, and we have seen -- I've seen some of
25 those revision logs that talk about changing certain

1 aspects, some limited assumptions as they go along
2 and providing kind of who has done that -- that
3 revision. But I can't state with certainly who, you
4 know, if somebody handed Ameren this TRM or handed
5 them the deemed savings table and said, This is --
6 you know, this is the numbers you should use.

7 Q. So they're not an industry standard;
8 they're a custom or design or a custom-prepared data
9 set?

10 A. As far as I know. And one -- I guess one
11 thing that I'd say to that -- to that effect is even
12 if this was a third-party product that was handed to
13 Ameren, it's imperative that they understand the
14 assumptions that are going into it for many reasons.
15 One, to know what kind of impacts to expect. But the
16 more important reason is that you're using that as a
17 basis to charge customers, and we have to have
18 support for that.

19 So I -- I do think that there's -- I think
20 that the TRM in this case has been a more visible
21 topic than what it's been in a prior case, but it's
22 not because it was any less important in that case;
23 we just have a better understanding of kind of what's
24 driving that end result or what's driving the
25 estimated end result.

1 Q. And is there a relationship between the
2 data in those two documents, whether prospective or
3 retrospective, looking at the EM&V, is there a
4 connection there?

5 A. Yes. So for the -- the calculation of net
6 throughput disincentive as Ameren's proposed, my
7 understanding is that it is going to rely on those
8 estimations from the TRM as the primary source. So
9 you're going to take the -- the -- I don't want to
10 get too far in the details because the mechanism
11 itself is kind of complicated. But at a high level
12 you're taking the -- the number of measures that are
13 installed in a given month. You're multiplying that.
14 You're doing some averaging so that you're assuming
15 it happens mid-month. Multiplying that by the
16 estimated energy savings that occurs. And then
17 you're multiplying that by a factor to come up with
18 the -- the net throughput disincentive which gets
19 included as the TD component of the EEIC, the energy
20 efficiency investment charge.

21 So if you're doing that on a prospective
22 basis, you could go an entire year looking at
23 installations of measures and never go back and
24 account for the fact that maybe it wasn't reasonable
25 to attribute, I think as Dr. Marke has talked about,

1 maybe it wasn't reasonable to attribute all of the
2 savings to a given program. Maybe it was more
3 reasonable to attribute only 50 percent or 10
4 percent, something along those lines. And if you do
5 that on a prospective basis, you've essentially
6 charged customers for that throughput disincentive
7 for that entire year, even though that wasn't a
8 reasonable thing to have done. And you're
9 shielding -- you're placing that risk on the
10 ratepayer and shielding the -- the Company, but also
11 the implementers to an extent from risk of them
12 driving installations of energy efficiency measures
13 that they probably shouldn't have been focused on.

14 COMMISSIONER MITCHELL: Thanks very much.
15 That helps me understand.

16 JUDGE PRIDGIN: Commissioner Mitchell,
17 thank you. Any other bench questions? I think I may
18 have a few.

19 QUESTIONS

20 BY JUDGE PRIDGIN:

21 Q. Mr. Luebbert, if the Commission were to
22 approve either a portion of this application or the
23 entire application, what would Staff's proposed
24 modifications be to the EM&V approach to address some
25 of Staff's concerns?

1 A. That's a difficult question. I will say,
2 you know, we've gone pretty quick through this topic,
3 so it might take a while, and I don't know that I'm
4 going to be able to give a comprehensive answer. But
5 I can certainly give some things that -- that could
6 be done or what Staff thinks should have been done on
7 the front end in order to improve this EM&V process.

8 First thing that I'm going to point out is
9 if you look at the EM&V plan, quote, unquote, plan
10 for each of these programs, they're pretty generic.
11 You're going to see a lot of similarity between
12 each and -- between each of the EM&V plans for each
13 program, even though they're pretty different
14 programs, the design them, who they're impacting,
15 that type of thing. The answer for -- from -- from
16 Staff's perspective is as you're planning for
17 programs, you need to have a -- a well-thought out
18 plan for how you're going to evaluate these things
19 and that needs to play into how you actually design
20 the program.

21 So there are going to be some measures
22 that are extremely difficult to evaluate. There are
23 going to be other measures that are much easier to
24 evaluate. And there's -- there should be a cost
25 differential between those two things if you're

1 trying to get the same level of accuracy. That's
2 something that can be well-thought of or thought of
3 well ahead of time prior to implementation of that
4 plan.

5 If there are measures or programs that are
6 right for free ridership, then you can implement --
7 you can implement steps leading up to that point to
8 minimize some of that free ridership so that you
9 don't have to deal with as much of it on the back
10 end. And when we're talking about that, those
11 changes, implementing kind of the results of the
12 EM&V, to the extent that you can minimize those large
13 swings from what you expected to have occurred to
14 what actually occurred, what you evaluated or you've
15 measured, ideally you've verified, to have occurred,
16 that's -- that's probably an ideal situation.

17 On the front end what we're -- what we're
18 looking at within this application are Ameren's
19 estimates of megawatt hours savings and megawatt
20 savings. That's -- that's the document that we were
21 all looking through together. To the extent that you
22 can accurately quantify or at least account for the
23 difference that's going to occur between kind of the
24 gross or the unadjusted amount compared to a net,
25 it's a much better look at it from the front end if

1 you know that there are large issues that are going
2 to drive differences. So accounting for those types
3 of things ahead of time is a good idea.

4 I know that we have a list of topics that
5 we've -- we've included within the issues list. By
6 and large I'd say our -- our position is that those
7 things should be accounted for ahead of time, have a
8 plan in place, have it documented. Ideally have --
9 have it documented at the time that you've done your
10 application so that we can have -- we can have Staff
11 experts and other party experts provide the
12 Commission with their insights on whether or not they
13 think it's a reasonable plan to account for some of
14 those things.

15 And then I -- I think another area that's
16 important to keep in mind is one of the things that I
17 don't think -- well, it hasn't been talked about with
18 this issue because we've gone quick, right. When
19 we're evaluating things, when we're looking at the
20 results of evaluation, those results are relying on
21 the avoided cost, at least to date, okay, to date the
22 evaluation results have relied upon the avoided costs
23 that were approved by the Commission. We know those
24 are incorrect because they're at best a forecast and
25 at worst an overestimation, which is what we're

1 talking about in this case.

2 But we have real data every year about
3 what the actual cost of energy is in a given hour.
4 It's publicly available information through MISO,
5 right. We have real data through the results of the
6 PRA on what the market price of capacity is in each
7 season. And so to the extent that you're evaluating
8 megawatt hour savings and megawatt reductions,
9 identifying the time periods is really important.
10 We've talked about this. But then applying that to
11 real data to have an understanding of what those
12 actual avoided costs are. What was the result
13 compared to what the forecast was or what the
14 estimate was from the Company would give a very clear
15 indication of whether or not that was an overblown
16 estimate. It would also give a clear indication of
17 whether or not they're hitting the time periods that
18 matter.

19 Noth -- I've looked at EM&V reports. I
20 haven't seen anything that accounts for what the
21 actual cost of energy is over that time period, what
22 the actual reductions are in a given hour. You know,
23 it's going to be -- even if you -- if you did that as
24 best as you could, it's going to be an estimate, but
25 it would be a more granular estimate.

1 And then I guess the last thing that
2 really kind of would be especially important is
3 understanding what that impact is not only over that
4 year, but over time. Because if what we're talking
5 about here is trying to kind of compare demand-side
6 resources to a supply-side resource and what the
7 ultimate goal is is to drive benefits to all
8 ratepayers through a deferral of supply-side resource
9 in the future, then the demand savings that occur out
10 in that future -- future time period are more
11 important than possibly what happens today.

12 If I'm looking at a deferral of a resource
13 that doesn't happen for 12 years, but I'm only
14 evaluating the megawatt reductions that happened in
15 Year One, I'm drawing a blind eye to the thing that
16 actually matters which is what is the megawatt
17 reduction that occurs later. That's more important.
18 And does it occur later and in the time period that I
19 real needed it most, or at least what I was basing
20 my -- my justification on. I don't think any of
21 that's been looked at thoroughly through EM&V. Those
22 are improvements. I'm sure that I'm missing a few,
23 but I also know that the Commission has limited time
24 and we've got other issues too.

25 So if there are more specific questions,

1 I'd be happy to answer them. I -- we've tried to lay
2 out kind of the issues we've identified within our
3 testimony. I -- I will caution that there are
4 probably others that we just haven't identified yet.

5 JUDGE PRIDGIN: All right. Mr. Luebbert,
6 thank you. I -- I do have a few more questions. And
7 I don't really like to break in the middle of a
8 witness like this, but we've been going for about a
9 couple of hours and I do want to give people a chance
10 for a break. So I'm showing it's not quite 3:30.
11 Let's take a break until about 3:45 or so. Is there
12 anything further from counsel or for the bench before
13 we take a break? All right. We will stand in recess
14 then until 3:45. Thank you. We're off the record.

15 (Off the record.)

16 JUDGE PRIDGIN: Good afternoon. We are
17 back on the record. Mr. Luebbert is still on the
18 stand for EM&V, and I believe Commissioner Mitchell
19 has some additional questions.

20 COMMISSIONER MITCHELL: Thanks, J.

21 QUESTIONS

22 BY COMMISSIONER MITCHELL:

23 Q. You mentioned a laundry list of worries
24 about the data sources and the -- and the TRM and the
25 deemed savings tables. And did -- did you ever take

1 that concern to Ameren and ask about it, and if so,
2 what was the response?

3 A. Yeah, that's a good question. Yeah. I
4 raised that issue really early on in the initial
5 application. The first data request that we sent, I
6 wrote, and it identified that there were large swaths
7 of hard-coded numbers within their work papers
8 without citations. We asked for those citations, and
9 we didn't get a responsive answer in the first place.
10 And so we had conversations with the Company and we
11 had several conversations with the Company and it
12 became clear fairly quickly that they weren't going
13 to be able to provide citations for DM savings table
14 and the TRM.

15 I talk about this a little bit within my
16 rebuttal testimony kind of a condensed timeline of
17 events, if you will, between the initial application
18 and then part of the impetus from Staff's perspective
19 of kind of thinking about an extension for this --
20 this calendar year was with the intention of having a
21 new application that would include support, right.
22 We would know that support is needed in order to look
23 at something like this on a long-term basis or on
24 a -- with the magnitude of the dollar value. And we
25 had workshops and discussions and we described some

1 of issues that we were running into. You know, we
2 would walk through, and we -- we hit this point and
3 it's a wall; it's a hard-coded wall of data to some
4 extent.

5 We asked for -- I mentioned we asked for
6 the citations. But once we had the amended
7 application in hand after months and months of, you
8 know, multiple conversations with the Company, their
9 witnesses, we got an amended application. I want to
10 say it was early in 2024. I want to say it was
11 January; I may get the timing wrong there. And there
12 were again large swaths of data that were hard coded.
13 And so we sent a follow-up data request that was
14 largely similar to DR1 in this case, I think I've
15 attached it to my testimony, essentially asking for
16 the same information. Provide us the support for the
17 assumptions that are included, citations for all
18 hard-coded data, tell us where, if you've calculated
19 a number somewhere else, tell us where it pulled from
20 so that we can follow the bread crumbs back, right,
21 to understand what the support is for these
22 assumptions.

23 And we had follow-up conversations from
24 there, had -- I think there was some discussion about
25 there -- there was a possibility that we'd be getting

1 some of the information updated. And so we kind of
2 held off on raising the issue to having a discovery
3 conference in this case. And we held off so long
4 that we got to a point that it was time to write
5 testimony. Or it was time to file testimony. And so
6 that's why I included it in my rebuttal testimony,
7 that this is an issue, it's been an ongoing issue,
8 and we tried. I want to document it for the
9 Commission because I think it's important for you all
10 to understand that we're not -- we're not just
11 opposing it. We took steps trying to explain what
12 the issue is and trying to address the issue with the
13 Company for a long period of time, and we're still in
14 this spot. I wish the outcome was different, but
15 that isn't the case.

16 COMMISSIONER MITCHELL: Thank you.

17 JUDGE PRIDGIN: All right. Thank you. I
18 think I have a few more questions.

19 QUESTIONS

20 BY JUDGE PRIDGIN:

21 Q. Given that Ameren has deployed AMI to
22 nearly all of its customers, would Staff recommend or
23 would you recommend using a more accurate way to
24 account for savings through measurement of actual
25 rather than deemed savings?

1 A. I would. That's a great point, and that's
2 a great question. I think to the extent possible, to
3 the extent that customers are paying for that
4 investment through their rates, we need to be
5 leveraging that information. Getting data and having
6 a better understanding of kind of what those impacts
7 are I think is important and it will be more
8 important as we move forward.

9 I know that as part of this case -- I'm
10 struggling to remember which witness, I want to say
11 it was Staff Witness Tevie asked for some sampling
12 data of some samples of customers that looked at pre
13 and post usage with AMI data looking at that, kind of
14 that information over a number of years. I think to
15 the extent that it's possible to leverage that
16 information, either if it's for cost savings for EM&V
17 or for accuracy for EM&V, if it's, you know, anywhere
18 comparable costs, I think that's where this has to
19 move if MEEIA'S going to move forward. We've got to
20 utilize that infrastructure that customers are
21 already paying for because they're paying for it
22 regardless. If you can avoid making assumptions on
23 top of assumptions on top of assumptions and utilize
24 real data, I'd say that's preferable.

25 Q. Does Ameren and do the other parties have

1 the data needed to do EM&V in more of a measured
2 manner?

3 A. I -- I will tell you that I don't think
4 the other parties have the data to the extent that
5 Ameren does, specifically kind of segmenting
6 customers by rate class and whether or not they've
7 have participated and what level of participation.
8 I'm not sure that they have kind of the -- I don't
9 want to say they don't have the capability, but they
10 may not have the infrastructure in place to do so
11 yet. But I don't want to -- I can't state that
12 definitively, but I think -- I'm very comfortable
13 saying Staff doesn't have the information available,
14 and my guess is that other parties wouldn't either.
15 We have kind of a fairly, a more transparent view
16 than some of the other parties that are typically
17 subject to these cases.

18 Q. Would a single EM&V consultant be able to
19 verify savings through a -- through a measured
20 approach?

21 A. I don't want to give -- my answer's going
22 to be caveated, and the reason is the details of how
23 that evaluation done -- is done really matters. I
24 think we -- we can all understand that an evaluation
25 can be as accurate as possible and that can come at

1 cost, and it can also be very cheap but probably not
2 very accurate. And I do think there's some balancing
3 there. So really knowing the details of how that's
4 going to be done, what's going to be looked at, and
5 kind of how -- how you plan to implement that ahead
6 of time is probably important. Well, I know it is
7 important. But it -- I think also knowing the data
8 that's going to be available for that one -- if you
9 went that route, kind of the data granularity that
10 they'd have is probably going to drive some of that
11 accuracy and some of the cost.

12 JUDGE PRIDGIN: Mr. Luebbert, thank you.
13 I don't think I have any further questions. Any
14 further bench questions? Any recross based on bench
15 questions? Public Counsel.

16 MS. VANGERPEN: Yes, just very briefly,
17 Judge.

18 RECROSS-EXAMINATION

19 BY MS. VANGERPEN:

20 Q. Good afternoon, Mr. Luebbert. You
21 mentioned some ways that Staff would fix the EM --
22 suggest fixing the EM&V process. Do you agree that a
23 single, independent, Commission-approved evaluator
24 would be another fix?

25 A. I think this -- my answer's probably going

1 to be very similar to Judge Pridgin's question, and
2 it would depend on the details. I do think that
3 there are some -- I guess one thing that I hadn't
4 thought of prior, but I do think there are some kind
5 of potential conflicts or potential conflicts that
6 could be avoided by not having kind of oversight by
7 the utility and having kind of a centralized look.
8 But the details again are so important in knowing
9 kind of the level of data granularity, the level of
10 review that they're planning, and the accuracy that
11 should be expected from that is -- are all things
12 that have to be considered. And then obviously cost
13 I think is another thing that would have to be
14 considered.

15 Q. Would you agree with me though that it
16 would likely be cheaper to do a single, independent
17 evaluator as opposed to the current methodology which
18 uses multiple?

19 A. There's a chance that there would be some
20 cost savings just from, I think if nothing else, the
21 ability to standardize some of the review and -- and
22 I guess to take that a step further, it would
23 probably make review a bit simpler from -- just from
24 the Staff perspective, not having separate
25 contractors doing something for each utility and

1 then, oh, by the way they switched contractors nearly
2 every cycle. Sometimes they have multiple
3 contractors do evaluations in the same cycle. And so
4 you have this, you know, difference in data
5 formatting, report formatting, what they're actually
6 providing.

7 I mean, I think from an administration
8 stand point just from Staff's perspective, the review
9 would be simpler. But again, the details are so
10 important. And I -- I know I sound like a bit of a
11 broken record on that, but I can't stress it enough.

12 Q. Thank you. Again -- so again talking
13 about those corrections that you mentioned, you would
14 agree me that the review necessary to determine that
15 the programs worked as they were supposed to with
16 your proposed corrections to EM&V, that review
17 process would be time and labor intensive. Is that
18 correct?

19 A. I think reasonable evaluation,
20 measurement, or verification is, by its nature, going
21 to be time and labor intensive. There are certain
22 aspects that are -- that are going to be more so.
23 My -- my assumption is that well-planned programs,
24 well-designed evaluations from the beginning can
25 alleviate some of those costs that might pop up if

1 you're not accounting for things like massive amounts
2 of free ridership or other aspects from the front end
3 and you're allowing for large amounts of customers to
4 participate and take incentives that would have,
5 let's say just would have otherwise purchased --
6 purchased that equipment anyway. I think you're
7 subjecting more cost to EM&V to appropriately or to
8 accurately account for that than if you can take
9 steps to kind of mitigate those ahead of time.

10 So the short answer is yes, changes to
11 EM&V are going to come with a cost. We currently
12 have a cost of EM&V, and I -- I think it's -- it's
13 been established as labor and time intensive already.
14 So improvement can -- I think it could probably cut
15 both ways.

16 Q. And just to make sure I understand your
17 answer correctly, my question was the review on
18 behalf of other parties like Staff or OPC who would
19 be reviewing those EM&V reports. Would your
20 corrections to the EM&V process increase the review
21 time for those parties?

22 A. Oh, I'm sorry. I didn't understand that
23 question. Thank you for asking again. I think the
24 answer is that many of the improvements that I laid
25 out would shorten the review time. Having things

1 well-documented from the beginning, having them kind
2 of fleshed out through the -- the case timeline
3 process so we've had a chance to review, you know, a
4 fully and well-documented, well-supported plan ahead
5 of time, we've written testimony, the Company's
6 written testimony back to kind of explain what their
7 thought process is.

8 I think having those types of thing
9 well-documented before the Commission ever goes to
10 approve a plan can alleviate some of that time. And
11 ideally if you've kind of planned accordingly to
12 avoid some of these issues that we're going to --
13 that have been brought up within the issues list,
14 those are -- I don't know how to -- a good way to say
15 this -- headaches you can avoid ahead of time. And
16 maybe not avoid, but minimize, right. Some of --
17 some of these are going to happen regardless, but
18 there are steps that can be taken to kind of mitigate
19 those from the front end.

20 MS. VANGERPEN: Okay. Thank you. Nothing
21 further.

22 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
23 Any cross from Renew Missouri? Any cross from NRDC?

24 MS. RUBENSTEIN: No, thank you, Judge.

25 JUDGE PRIDGIN: Thank you. Any from

1 Ameren Missouri?

2 MR. HOLTHAUS: Yes, Judge.

3 RECROSS-EXAMINATION

4 BY MR. HOLTHAUS:

5 Q. Good afternoon, Mr. Luebbert.

6 A. **Good afternoon.**

7 Q. Mr. Luebbert, in your discussion with
8 Commissioner Mitchell you mentioned several
9 deficiencies in the source citations included in
10 Ameren's TRM. Do you recall that testimony?

11 A. **I do. I talked to Commissioner Mitchell
12 both about the TRM and then the deemed savings table
13 as well. I think when I've -- when I've talked about
14 that, I have -- I've tended to talk about those I
15 guess set of four documents kind of in combination
16 because they're somewhat interlinked.**

17 Q. Thank you. Now, Staff hired an
18 independent auditor, Evergreen Economics, to perform
19 an independent audit of Ameren Missouri's EM&V
20 process. Is that right?

21 A. **I know that Staff employs Evergreen
22 Economics, and they -- does that answer your
23 question?**

24 Q. Specifically did Evergreen Economics
25 prepare for Staff's review a document entitled Final

1 Report dated June 11th, 2024, Independent EM&V Audit
2 of the Ameren Missouri Plan Year 2023 Program
3 Evaluation?

4 A. I -- that's possible, but I can't really
5 speak to it. I haven't -- haven't been involved in
6 that part of the process. Mr. Fortson could probably
7 speak to that better.

8 Q. Understand. You also had some discussion
9 with Commissioner Mitchell about your efforts to get
10 more information from Ameren in regard to the TRM and
11 a few other things. Is that -- do you recall that
12 testimony?

13 A. I do.

14 Q. And I think you attached to your rebuttal
15 testimony one -- Ameren's response to one of your
16 follow-up DRs. You mentioned -- let me back up. You
17 mentioned an initial DR, I think you said DR1 and
18 then you mentioned there was -- you submitted a
19 follow up DR. Did I summarize that correctly?

20 A. I did -- well, I issued several follow-up
21 DRs, but I think if -- if I'm recalling the
22 discussion that you're referencing, the follow up to
23 data request one was after the amended application
24 filing, and we did send something that was
25 substantially similar, a little bit pared back, but a

1 very similar data request.

2 Q. And the follow-up DR, would that be DR
3 No. 0124 attached to your rebuttal testimony?

4 A. Yeah. I was going to say I do think that
5 I had attached that. I can -- I can confirm if you
6 give me a minute or --

7 Q. Please.

8 A. -- a few.

9 All right. Okay. Yeah. Schedule JLR4 I
10 think is the response to data request 124.

11 Q. And the date of that response by Ameren is
12 March 8th, 2024. Is that correct?

13 A. That's correct.

14 Q. And is it true that Ameren provided,
15 beyond just this cover sheet that's attached to your
16 rebuttal testimony, a large number of reports and
17 Excel files?

18 A. Ameren did provide a file, and I'm
19 trying to think if it was in response to this data
20 request. It may have been some of the -- I want to
21 say it was a folder with something like 200 PDF
22 documents of various sizes, but it didn't include any
23 citations, which is what we were asking for in the
24 initial data request for the assumptions that were
25 included in Ameren's work papers. So we did get kind

1 of a quote, unquote, data dump from the Company on
2 that date or on a date; I'm not -- I'm not certain if
3 we got it that same day with -- with a large amount
4 of information.

5 And that's -- that's some of the
6 information I was kind of talking through with
7 Commissioner Mitchell about not having those
8 citations really isn't reasonable because in many
9 instances there may be information for the same types
10 of measure across multiple different documents. And
11 if I don't know what it is you're utilizing to go and
12 verify the reasonableness of that assumption, then
13 it's created a barrier -- barrier that's unnecessary,
14 especially when we're talking about something that's
15 over a year after we initially requested it.

16 MR. HOLTHAUS: No further questions.
17 Thank you for your time, Mr. Luebbert.

18 **THE WITNESS: Thanks.**

19 JUDGE PRIDGIN: Thank you, Counsel. Any
20 redirect?

21 MR. PRINGLE: Yes, Judge, very brief.

22 REDIRECT EXAMINATION

23 BY MR. PRINGLE:

24 Q. Mr. Luebbert, could you go back to that
25 JLR4 that you were discussing with Ameren's counsel?

1 **A. I'm there.**

2 Q. Page 3. And I'm going to read this first
3 sentence from the first -- well, the only full
4 paragraph on this page. And this is, again, this is
5 Ameren's response to DR124. Correct?

6 **A. Yes, it is.**

7 Q. And this sentence, the first sentence on
8 the last paragraph of the response reads, Therefore,
9 prior to this data request, Ameren Missouri had no
10 reason to believe that TRM documentation was a
11 concern of our stakeholders, end quote.

12 Did I read that correctly?

13 **A. You have.**

14 Q. Is DR1 -- what is the difference between
15 DR1 and DR124?

16 **A. There are some subtle differences. If you
17 give me a minute, I can probably give you a pretty
18 good indication. They're minimal, I will say that.
19 I think we -- we may have deleted a few sentences
20 because there were a couple pieces of information
21 that -- that were provided over that, kind of that
22 time -- one-year time frame. Give me just a minute.**

23 Okay. So the first difference between DR1
24 that I included as JLR1 that was -- that was
25 responded to in April of 2023 and this JLR4 which

1 is DR124 which was responded to on March 8th of 2024,
2 the first difference in the question was we -- we
3 removed a request to provide all work papers utilized
4 by Ameren to support claims, data, figures, tables,
5 and graphics included in the report and appendices.

6 Part of that reasoning was that after
7 multiple discussions with the Company, we were able
8 to get more of the work papers that were kind of
9 underlying that initial -- well, that -- I think they
10 understood that we needed to see kind of the -- the
11 work papers themselves. And so we -- we did remove
12 that request.

13 What didn't get removed is that very next
14 request which was to provide for -- Provide
15 justification for any of the assumptions made within
16 those work papers and citations for any of the
17 hard-coded numbers.

18 That's something that we talked about from
19 that very, you know, first conversation with them.
20 And so part of -- part of that second request was to
21 provide the entire document as well as specific
22 citations to the page and line number for all of the
23 reference -- references to work products of Ameren,
24 other affiliates, or outside entities relied upon for
25 the report, any of the appendices, or any underlying

1 work papers.

2 What we'd asked for in the prior, that
3 first DR was for them to provide specific citations
4 to the underlying file, tab, and cell for the
5 specific data referenced in each page of the report
6 and the appendices.

7 Oh, I guess we may have -- we may have
8 removed that -- sorry. I think number four matches
9 up with -- four of the initial request matches up
10 maybe with number two.

11 What also remained there is a reference to
12 Appendix I, which is one of the TRM documents. And
13 what we said is, you know, as an example we've got
14 these issues with the hard-coded information, we've
15 been asking you for it, we've talked about it. But
16 we threw it in as an example that Appendix I refers
17 to numerous sources of information, doesn't provide
18 those source documents, nor the page numbers where
19 the information relied upon can be found.

20 And that's an issue that was, you know,
21 apparent throughout many of the work papers, but we
22 wanted to provide, Here is an example. When you
23 look at my testimony, I mean, the -- the status
24 report is JLR2. We had a status report in this case
25 prior to -- I think it was prior to the extension

1 filing for the program year 2024. It describes some
2 of the information that we were -- we were talking
3 with the Company and we'd asked for them to provide
4 and kind of lays out, Hey, we're going to have these
5 workshops, this is the information we need you to
6 address.

7 Q. I guess, Mr. Luebbert, is it fair to say
8 that DR124 was Staff's attempt to simplify the ask
9 in DR1?

10 A. Yeah. It -- it pared it back, but it was
11 largely the same request. It shouldn't have been
12 anything new to the Company.

13 Q. And Staff still did not receive all the
14 documentation that was requested?

15 A. Yeah. We didn't get the citations for
16 those assumptions. And that -- that is -- you know,
17 admittedly there are a lot of assumptions. We
18 understand that. We understand that citing that many
19 assumptions could take some time. That was part of
20 the reason we -- we went forward with that extension.
21 But we also understand that the Company is the one
22 that's requesting approval of that entire document
23 and they're requesting approval for -- for spending
24 ratepayer dollars in massive amounts over the next
25 few years. And so the burden has to be on them to be

1 able to justify not only those upfront assumptions,
2 but then those assumptions are being utilized to then
3 charge ratepayers through the throughput disincentive
4 mechanism. So, you know, it's -- that's an issue
5 that they need to address, and it's not really one
6 that Staff can.

7 MR. PRINGLE: Thank you, Mr. Luebbert. No
8 further questions, Judge.

9 JUDGE PRIDGIN: Mr. Pringle, thank you.
10 Mr. Luebbert, you may step down.

11 MR. LUEBBERT: Thank you.

12 JUDGE PRIDGIN: And I believe we have
13 Dr. Marke as the final witness on this topic and the
14 final witness for the hearing today. Dr. Marke, you
15 are still under oath.

16 (Witness previously sworn.)

17 DR. GEOFF MARKE:
18 the witness, having been first duly sworn,
19 testified as follows:

20 JUDGE PRIDGIN: Ms. VanGerpen, anything
21 before he stands cross?

22 MS. VANGERPEN: No, your Honor. We would
23 consider him tendered for cross.

24 JUDGE PRIDGIN: All right. Thank you.
25 Any cross-examination from Staff?

1 MR. PRINGLE: Yes, Judge.

2 CROSS-EXAMINATION

3 BY MR. PRINGLE:

4 Q. Good afternoon, Dr. Marke.

5 A. **Good afternoon.**

6 Q. So I guess I want to kind of talk about
7 the EM&V and the extensions. Is it -- when it came
8 to the extensions, is the emphasis put on EM&V for
9 the extension years 2022, 2023, and 2024 less than
10 what was agreed to in the initial Cycle 3
11 stipulation?

12 A. **That's correct.**

13 Q. And is one of those reasons because of
14 certain stakeholder concerns with the EM&V process?

15 A. **They were my concerns. That -- flat out
16 say that. That was -- that was the Office of Public
17 Counsel's issue. We -- so just to pull this full
18 circle to what Mr. Pringle's talking about, we've had
19 three years of one-year extensions with Ameren. The
20 EM&V in those have been --**

21 MS. MOORE: Your Honor --

22 **THE WITNESS: -- bridge programs.**

23 MS. MOORE: I'm going to object again on
24 the basis that this is, I call it friendly direct
25 testimony, and I'm not sure it's exactly on point.

1 And to the extent that OPC agreed to something in
2 negotiations, I think that's privileged. The reason
3 behind that, we do have the settlement, and so I'm
4 little concerned that we're breaching that
5 responsibility to not discuss some of the rationale
6 behind settlements. And those are my objections.

7 JUDGE PRIDGIN: All right. Thank you.
8 Mr. Pringle.

9 MR. PRINGLE: I'm fairly confident that
10 Dr. Marke can answer the question without getting
11 into the black box of settlement.

12 JUDGE PRIDGIN: Yeah, I --

13 MR. PRINGLE: And since this is the EM&V
14 issue, I do believe it's relevant.

15 JUDGE PRIDGIN: Yeah. I -- I will
16 overrule. And obviously I don't want you to get
17 into -- Dr. Marke, I don't want you to get into
18 settlement discussions. So thank you.

19 THE WITNESS: Understand. EM&V is a very
20 complicated, convoluted issue. One of my first,
21 like, real cases working in front of the Commission
22 was over EM&V in MEEIA Cycle 1. We had very, very
23 contentious EM&V discussions, and it centered around
24 CFL lighting. Hundreds of pages of testimony in very
25 short time frames were filed over -- oh, boy. I

1 mean, it was -- it was several years, you know, that
2 took into account, just the first-year savings
3 associated with that.

4 Just a little context here. At the time,
5 Ameren Missouri, about 90, 95 percent of their
6 programs were just all CFL light bulbs. And the
7 Company claimed, a term of art that you haven't heard
8 yet, but it's called market effects. And the term of
9 art is supposed to denote that the Company's
10 influence on lighting was so massive that it
11 changed -- absent that, it -- it would not have
12 changed the market. Now, keep in mind, like, within
13 a year or two, CFLs were obsolete, technologically
14 obsolete because LEDs took over. But that was the
15 argument. And when we're talking about, well,
16 the NTG should be -- if everything is going right,
17 it's a 1.0. If you have free riders at all, it's
18 less than that.

19 In this case they were saying that our
20 one -- it shouldn't be 1.0; it should be like 1.3
21 because we changed the market and we had the
22 spillover effect that was associated with it. Well,
23 proving a counterfactual is difficult. Proving a
24 counterfactual against third-party implementers, you
25 know, and this is -- this is part of the issue that

1 we take in one of your recommendations is that there
2 should be just be one independent EM&V ideally, you
3 know, under -- under the PSC's jurisdiction.

4 Because when you give people money and
5 ask if a program -- if the program that gave you
6 money worked, what do you think they're going to say.
7 Even if we sit there and say that they're ethically,
8 you know, reasonable, it still has a cloud of bias
9 that's associated with that. And that came full
10 circle, you know, with our first experience with
11 EM&V.

12 So the argument there was such where each
13 one of these reports, and we do an EM&V report each
14 year -- you've heard a little bit about the TRM, and
15 I'm going to throw out a lot of terms that might be a
16 little confusing, but there's what we call the Latin
17 term ex-ante and ex-post. The ex-ante is what we
18 believe, you know, a widget represents today under
19 ideal situations, engineering estimates, all right.
20 The light bulbs should save this under ideal
21 conditions. That's part of the ex-ante, and that's
22 what Mr. Luebbert's talking about where a lot of
23 these assumptions aren't probably factually correct.
24 Historically we've not spent a lot of time working on
25 that. We've spent more time working on the ex-post

1 part of it. That ex-post is how much can be
2 attributed to Ameren's result of that.

3 The one-year extensions deviated from
4 previous EM&V cycles because we cut the fat. Because
5 we cut out a lot of the problematic issues where we
6 would have discrepancies in the past. And we -- we
7 made it on a -- on a spend basis. And that has pros
8 and cons. I mean, again, there's -- there's
9 trade-offs here. But it was really to avoid the
10 contentious issues that can arise from EM&V and that
11 have historically.

12 I -- honestly I still have, you know --
13 not to -- you know, I still have issues based off of,
14 you know, stuff happened a decade ago and how much
15 time and energy that went into that. So that was the
16 rationale or that's, at least from my perspective,
17 that was the difference with the EM&V that was agreed
18 to and the one-year extensions.

19 BY MR. PRINGLE:

20 Q. Thank you, Dr. Marke. And that -- the fat
21 that was cut out that you just described, was that
22 fat still cut out when the amended application was
23 filed?

24 A. No. I mean, so this amended application
25 is a step back. We're going back to where we were

1 before we got to that stage. And that's again, you
2 know, why we're coming down as we hard as we are on
3 these programs. We really feel like this is -- for
4 something that needs to constantly evolve to make
5 sense, we're not evolving; we're regressing.

6 MR. PRINGLE: Thank you, Dr. Marke. No
7 further questions at this time, Judge.

8 JUDGE PRIDGIN: Mr. Pringle, thank you.
9 Any cross from Renew Missouri? Any cross from NRDC?

10 MS. RUBENSTEIN: No, Judge, thank you.

11 JUDGE PRIDGIN: Thank you. Ameren
12 Missouri, any cross?

13 MS. MOORE: Yes, thank you, your Honor.

14 CROSS-EXAMINATION

15 BY MS. MOORE:

16 Q. Good afternoon, Dr. Marke. How are you.

17 A. **Good afternoon. I'm good.**

18 Q. Good. Did you review the Evergreen
19 Economics independent eval -- EM&V audit of Ameren
20 Missouri for P -- program year 2023? It was filed in
21 MEEIA 3 on June 11th, 2024.

22 A. **I did not.**

23 Q. All right. So you're not aware of any of
24 the conclusions or findings?

25 A. **Only at a very high level.**

1 Q. All right. And for program year 2023,
2 would the independent auditor have used the same
3 TR -- or perhaps an earlier version of the TRM that's
4 on file today?

5 **A. Yes.**

6 Q. And that TRM that's involved today, I
7 think yesterday you had indicated that the genesis of
8 that docket -- or that document was from the 2017
9 statewide TRM collaboration held by the -- was it the
10 Department of Economic -- Energy and then VIEC? Or
11 no, VEIC? I always -- the Vermont corporation that
12 has developed a lot of these TRMs around the country?

13 **A. I don't know if I would say the genesis.**
14 **I mean, I think, you know, there's version that**
15 **predated that that helped inform that version. So**
16 **it's just versions on top of versions. But you're**
17 **right, the -- the version we have today owes some of**
18 **its findings from the 2017 exercise.**

19 Q. All right. Is it your understanding that
20 the Office of Public Counsel or perhaps even another
21 stakeholder such as, you know, Renew or NRDC can
22 comment and take exception to any of the findings in
23 the EM&V reports that are filed?

24 **A. If you're a party to the case, that is my**
25 **understanding.**

1 Q. All right. And for the MEEIA 3 case, OPC
2 was obviously party to the case.

3 A. So, and I just want to be clear.
4 MEEIA 3 -- well, we were a party to, well, all of
5 these cases. But are we going to talk about MEEIA 3
6 or the extensions, the three year one-year
7 extensions?

8 Q. Well, aren't they the same docket?

9 A. They are, but they're different portfolios
10 is what I would say. It's --

11 Q. Okay. So --

12 A. -- it's a just different -- different EM&V
13 process.

14 Q. -- procedurally -- yes.
15 What's different about it?

16 A. Oh, I mean, massive. So the -- the
17 Cycle 3 EM&V is similar to -- it's a retrospective
18 process, but it's similar to what you are arguing for
19 today. The one-year extensions effectively minimized
20 impact evaluation entirely. So your earnings
21 opportunity wasn't based off of recorded savings;
22 your earnings opportunity was based off of how much
23 money you spent in terms of incentives.

24 Q. But you're talking -- okay. So you're
25 talking about the earnings opportunity. But the

1 evaluation used, I think the auditor mentions that
2 too, it used a straight line net to gross -- well, it
3 used a valuation used in net-to-gross ratio of .825
4 for most programs. Is that --

5 **A. So this is exactly why when you asked me**
6 **before did I read the EM&V and the answer was no, and**
7 **I'll explain why it was no. Because it didn't**
8 **matter. Because of what we agreed to, the net to**
9 **gross was really irrelevant at the end of the day.**
10 **It was based just purely off of your spend. And**
11 **this -- at -- when we get to the point where we get**
12 **an EM&V, the issue isn't --**

13 Q. But -- okay. Let me -- let me -- I'm
14 trying to rationalize this. So --

15 **A. Sure.**

16 Q. -- for the MEEIA 3 program -- program,
17 just from 2018 to 2021.

18 **A. Okay. The first three years.**

19 Q. The first three years.

20 **A. Yes.**

21 Q. There wasn't a standard net to gross
22 applied. Correct?

23 **A. Correct.**

24 Q. In the evaluation process?

25 **A. Correct.**

1 Q. And so is your issue that you like the
2 process where the surveys would be given to the
3 individuals and then you would apply the net to
4 gross; you'd come up with a net-to-gross ratio and
5 apply it then, or is it your testimony that you
6 prefer just using the same net-to-gross ratio across
7 the board?

8 A. It depends. If I may, I'll explain.

9 Q. I guess I'm hearing I don't know. I'm --

10 A. It's not an I don't know. It depends.

11 Q. It depends on?

12 A. So it depends on whether or not the
13 Commission approves the -- the -- if the Commission
14 approves the application at hand, then we are a
15 hundred percent in support of a retrospect EM&V that
16 goes full force into all of the issues that I
17 addressed and Mr. Luebbert talks about. If there is
18 some other version, such as my alternative version, I
19 recommend that we scrap that idea and we focus on
20 what we did in the one-year extensions, because it's
21 a bridge program.

22 Q. If they -- I want to make sure we're on
23 the same page. So if the Commission approves a
24 three-year plan --

25 A. If the Commission approves your

1 application, if the Commission comes back and says,
2 We agree that Ameren Missouri should move forward,
3 but they should modify their EM&V to take into
4 account X, that's fine. I mean, it's not fine. I
5 mean, we reject the application, but if you're going
6 to move forward with that -- my entire testimony
7 really is laid out that way.

8 In each one of these topics I say, Here's
9 effectively a menu of options for the Commission to
10 consider. If the Commission going to move forward
11 with this in the manner that the Company's move -- is
12 proposing, then we recommend a retrospective EM&V
13 that considers the rebound effect, principal-agent
14 operational inefficiencies, interactive effect, all
15 of that taking into account in that EM&V process.
16 But if you don't, then we say we're -- you're
17 effectively adopting my light version. Then I don't
18 have as much concern. I don't have as much risk.

19 And if you understand, I mean, the issue
20 really comes down to, from my vantage point, are
21 ratepayers on the hook for \$70 million of potential
22 earnings opportunity or for something significantly
23 less that's associated with the actual value of what
24 would you -- you would be able to earn absent these
25 programs.

1 To me it's a huge difference, and I -- I
2 have to make those decisions at the end of the day.
3 I mean, there's -- there's one of me in or office, so
4 am I going to put my time into going deep into this.
5 Well, I'm going to have to if it's at \$70 million.
6 And that's going to take me away from something else
7 and other activities. But that's -- it's such a big
8 dollar amount that absent the EM&V process, I have
9 very little confidence -- you need that protection.
10 I mean, that -- absent that, you don't have a
11 consumer protection.

12 Q. I want to turn to your recommendation for
13 just a single independent auditor. I think your
14 counsel said that there would be no utility
15 oversight, and I want to clarify. By that do you
16 mean that there would be no opportunity to comment
17 during the process --

18 A. Thank you --

19 Q. -- for the utility?

20 A. Thank you for clarifying that. That's not
21 what I would intend. Absolutely the utility would
22 have opportunity to comment and to provide input, be
23 on an equal foot just like every other party.

24 Q. Well, but during the evaluation process,
25 doesn't the auditor kind of communicate back and

1 forth with the Company asking questions? So your
2 proposal wouldn't bar any of that?

3 **A. Wouldn't bar that.**

4 Q. But what about sometimes the independent
5 auditor finds improvements. Would the Company have
6 to wait until the audit comes out a year, maybe a
7 year and a half later to learn about that so they
8 couldn't correct real time?

9 A. I mean, that's how it does -- that's how
10 it operates today. There's -- there's two elements
11 to an EM&V, being one is process and impact. Process
12 is where the, you know, the implementer's nice, you
13 know, is there a problem in the marketing of these
14 programs. And the impact is did the savings actually
15 materialize.

16 So what I'm hearing is would the Company
17 still have opportunity to adapt their programs based
18 off of process impact -- or process information. My
19 experience in working with EM&Vs and many EM&Vs at
20 this point is often the first time everybody's
21 hearing about these results is when they present it,
22 the process part of it.

23 So we've talked a little bit about
24 the 11-step process and how that takes place. I
25 mean, there -- it -- there's something in place for

1 the utilities to modify their programs, but there's
2 still a process. So adapting -- I guess the concern
3 that you raise I don't believe is a concern.

4 Q. So then what do you mean it's not a
5 concern? I want to understand that I -- your
6 response. And is it because the -- under your
7 structure, the utility would be able to learn about
8 those as the auditor is discovering them so they can
9 make corrections, or was it your intent --

10 A. So if -- if it -- if this is a concern for
11 the Company, I have zero problem with drafting up a
12 contract that stipulates that the process element of
13 their evaluation is one that's predicated on
14 continuous feedback to the stakeholders as opposed to
15 waiting until the end of it. That seems eminently
16 reasonable.

17 Q. So then is your concern with the Company
18 oversight that some of that instantaneous feedback
19 isn't provided to stakeholder?

20 A. My concern is twofold. We're talking
21 about a lot of money here. It's based off of one
22 professional experience that I had with Cycle 1 and
23 the Company and a specific EM&V consultant and just
24 the overall biasness that can occur when you give
25 people money and ask if the program that you gave --

1 that gave you money worked and how they might respond
2 to that.

3 Q. Right. But during the subsequent MEEIA
4 cycles we've identified that issue and corrected it.
5 Would you agree --

6 A. I would --

7 Q. -- with me that --

8 A. -- agree it's gotten better.

9 What has changed that gives me heartburn
10 is we've gotten better at our job too. I'll -- I
11 mean, the easiest thing to, like, point out here is
12 this sort of a-ha moment about the earnings
13 opportunity that I articulated two hours ago. It
14 sounds like a nice, you know, a-ha moment on my end,
15 but I sit here and think, Damn, I've let that go for
16 more than ten years. That's ten years where
17 ratepayers have overpaid, and we've done it
18 incorrectly. So we are constantly refining and
19 getting better at our job. And the issues that I
20 raise here are issues that I have not raised in
21 previous MEEIA applications.

22 Q. Well, do you feel that the EM&V structure
23 that the Company is proposing today prohibits you
24 from bringing up those concerns?

25 A. No.

1 Q. All right. And then you have heard
2 Mr. Luebbert testify about some of the changes that
3 he wants and he -- that he recommends. And in his
4 recommend -- recommendation he recognizes that it
5 would be a cost. Do you have an idea of how many --
6 how much -- do you have a cost estimate for how much
7 it would cost to change the EM&V process and perhaps
8 develop a new TRM to the level of detail?

9 A. I actually don't have -- my concern is not
10 necessarily centered on the TRM per se. Like, my
11 issue is much more on the operational inefficiencies,
12 the potential rebound effect, all of these other
13 things that I laid out. So it's a two-part question
14 as I understand, and you can correct me. How much it
15 would cost --

16 Q. If you had a cost estimate, yes.

17 A. It would be much more expensive than it
18 otherwise would be done correctly. You know, I think
19 you can help minimize that with -- by having one EM&V
20 consultant that undergoes it. My concern is not that
21 we don't have a forum to raise these issues. It's
22 that when we raise it, it's going to fall on deaf
23 ears and that we will have to then fight for it in a
24 subsequent case in front of the Commission and why
25 the Ameren agrees we shouldn't study rebound effect.

1 **If the Company wants to come forward and**
2 **say, We are comfortable doing everything THAT I**
3 **recommended, that -- that helps alleviate my**
4 **concerns. But what I hear is you have a forum to at**
5 **least voice your concerns. There's a big difference**
6 **to me.**

7 Q. No, I understand that. But you have a
8 forum here today where you're recommending to the
9 Commission that the rebound effect be studied.
10 Correct?

11 **A. I'm trying to take advantage of that, yes.**

12 Q. Yes. I understand, and I think you're
13 doing quite well. But you've also recommended it in
14 previous MEEIA cycles too. And so I think it's up to
15 the Commission --

16 **A. It is.**

17 Q. -- then to decide, you know, whether to
18 modify the plan there.

19 **A. I would agree.**

20 MS. MOORE: All right. Thank you. I have
21 no further questions.

22 JUDGE PRIDGIN: All right. Ms. Moore,
23 thank you. Bench questions? Chair Hahn, when you're
24 ready.

25 QUESTIONS

1 BY CHAIR HAHN:

2 Q. Good afternoon. I'll try to make it
3 brief.

4 A. I'll try to be brief.

5 Q. You referenced the 2023 EM&V reports or
6 that was referenced in the questions. And you said
7 something like the 20 -- there's something wrong with
8 the EM& -- the Evergreen Economics EM&V report. From
9 your perspective, you said it was based on their
10 spend, can you explain that for me?

11 A. So actually I don't take any issue with
12 the Evergreen Economics report. The Evergreen
13 Economics I think does a very good job. That's --
14 that's the Commission's auditor.

15 I didn't -- I did not have any concern
16 with the EM&V report because of the stipulation we
17 entered into. And the stipulation agreed to an
18 earnings opportunity that's different than what the
19 Company's proposing here or what we had agreed to in
20 past cycles. So when I say it was based off of
21 spend, I mean, it really was. We -- we set it up
22 where -- I don't know.

23 I'm -- I'm going to throw out numbers here
24 that aren't accurate, but it's going to be
25 illustrative. Thirty million dollars was allocated

1 for residential programs. We had a floor that you
2 had to spend at least this amount. And we did that
3 for different programs and that's -- that's important
4 too because I know the Commission looks at that
5 report and sees these different -- we can talk more
6 about this in the Programs sections. But you see
7 those different programs and you see, wow, this one's
8 not doing anything and this one's doing -- part of
9 the rationale with this is that we've got programs
10 for all customer classes.

11 So small business is like a really good
12 example. Small business is a really tough niche
13 group to go ahead and focus on. So we had a floor
14 that said you had to spend at least this amount of
15 money or incentives or you were penalized. So it
16 would motivate the Company to actually do that. When
17 the Company puts out, We've got 36 programs, they can
18 get the energy and demand savings from maybe a
19 handful of those programs. And that's historically
20 what happens, right, is that a handful of programs do
21 all the heavy lifting and we do kind of give lip
22 service to everything else.

23 The result is that some groups end up
24 participating more than others. So our one-year
25 extensions really there was a lot of thought that

1 went into it. And I -- I understand the hesitation
2 with -- from an outsider looking in that we would
3 want to verify the savings associated with that. Our
4 sanity check on that was the measures that were being
5 put in place were measures that have historically
6 produced more demand savings, like HVACs. We put a
7 cap on lighting for example. You couldn't do more
8 than that. You can't rely on that. Those were the
9 sort of things that made us feel better about it and
10 quite frankly brought the overall cost of the program
11 down too. So there were a lot of -- there's a lot of
12 mental gymnastics effectively that go into, all
13 right, if we're going to move forward with something,
14 how do we make this work that makes sense. And
15 really that's been the case with MEEIAs throughout.
16 I mean, they're constantly evolving.

17 Q. Thank you. Maybe tomorrow we can talk
18 more about the particular programs.

19 A. Sure.

20 Q. Or Friday. You do have a Ph.D., so I'm
21 going to ask you, did you ever have program
22 evaluation?

23 A. Yes.

24 Q. How many of those program evaluations were
25 prospective?

1 A. Right. Not many.

2 Q. Yeah.

3 A. Yeah.

4 Q. How typically would you go about
5 performing a program evaluation?

6 A. So typic -- you -- I -- my research was in
7 mixed method, so it was a combination of quant and
8 qualitative, but my Ph.D. was on the urban area
9 security initiative and federal funding that was --
10 ultimately came down to the states. So I focused in
11 on Missouri and how first responders effectively met
12 that element. So it really was a combination of the
13 empirical data and interviews. I mean, I just went
14 out and spoke.

15 The -- I mean, based off your question, I
16 think you recognize the problem with prospective
17 EM&V. And Mr. Luebbert articulated that effectively
18 you're getting one year of likely overstated savings
19 that are getting into that. And that means in year
20 two -- so if you move forward with the programs
21 in 2025, 2025 would be locked into that prospective.
22 In 2026 we would look at the 2025 evaluation and then
23 we would try to -- there would be a sausage-making
24 process involved, and we would have to agree to a
25 number or we'd have to take it in front of you. And

1 then again we're back in the same boat where we sit
2 there and it's just reasonable minds can disagree
3 over stuff. And that -- that's really what it is,
4 so.

5 CHAIR HAHN: I think that answers my --

6 **THE WITNESS: Okay.**

7 CHAIR HAHN: -- question. Thank you.

8 JUDGE PRIDGIN: Chair Hahn, thank you.
9 Any further bench questions? Any recross based on
10 bench questions from Staff?

11 MR. PRINGLE: One moment, Judge. No
12 questions, Judge. Thank you.

13 JUDGE PRIDGIN: Mr. Pringle, thank you.
14 Any recross from Renew Missouri? From --

15 MR. LINHARES: No, Judge, thank you.

16 JUDGE PRIDGIN: All right. Thank you.
17 From NRDC?

18 MS. RUBENSTEIN: No, Judge, thank you.

19 JUDGE PRIDGIN: Thank you. From Ameren
20 Missouri?

21 MS. MOORE: No, thank you, your Honor.

22 JUDGE PRIDGIN: Any redirect?

23 MS. VANGERPEN: No, thank you.

24 JUDGE PRIDGIN: Ms. VanGerpen, thank you.
25 Dr. Marke, thank you very much. You may step down.

1 And that will wrap up today's portion of the hearing.
2 We will plan to resume tomorrow morning at 9:00.
3 Going on to Net Throughput Disincentive and then we
4 will see if we stay on schedule. Thank you for
5 getting us back on schedule this afternoon. I
6 appreciate the pace this afternoon. Anything further
7 from counsel or the bench before we go off the
8 record?

9 MS. MOORE: No, your Honor.

10 JUDGE PRIDGIN: All right. Hearing
11 nothing, we will be in recess until tomorrow morning
12 at 9:00. Thank you. We are off the record.

13 (Off the record at 4:47 p.m.)
14
15
16
17
18
19
20
21
22
23
24
25

1	INDEX	
2	ISSUE FOUR CONTINUED	
3	EXAMINATIONS	PAGE
4	COMPANY WITNESSES:	
	MATT MICHELS	
5	Questions by Judge Pridgin	5
	Questions by Chair Hahn	9
6	Questions by Judge Pridgin	10
	Cross-Examination by Ms. Johnson	11
7	ANTONIO LOZANO	
	Questions by Chair Hahn	15
8	Questions by Commissioner Mitchell	21
	Questions by Chair Hahn	24
9	Recross-Examination by Ms. Johnson	25
	Recross-Examination by Ms. VanGerpen	26
10	Redirect Examination by Ms. Moore	27
	Questions by Judge Pridgin	30
11	Staff WITNESSES:	
12	BRAD FORTSON	
	Questions by Judge Pridgin	32
13	Questions by Chair Hahn	36
	Questions by Judge Pridgin	38
14	Recross-Examination by Ms. Hernandez	39
	Questions by Judge Pridgin	52
15	Redirect Examination by Ms. Johnson	53
	Questions by Chair Hahn	58
16	Questions by Commissioner Mitchell	59
	Questions by Judge Pridgin	60
17	J LUEBBERT	
	Cross-Examination by Ms. VanGerpen	64
18	Questions by Chair Hahn	70
	Redirect Examination by Ms. Johnson	72
19	SARAH LANGE	
	Cross-Examination by Ms. VanGerpen	87
20	OPC WITNESSES:	
21	DR. GEOFF MARKE	
	Cross-Examination by Ms. Johnson	90
22	Cross-Examination by Mr. Linhares	101
	Cross-Examination by Ms. Moore	105
23	Questions by Commissioner Coleman	114
	Questions by Judge Pridgin	117
24	Recross-Examination by Ms. Johnson	123
	Recross-Examination by Ms. Moore	126
25	Redirect Examination by Ms. VanGerpen	127

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

INDEX

ISSUE FIVE

MINI OPENING STATEMENTS	PAGE
Ms. Moore	129
Mr. Pringle	135
Ms. VanGerpen	141
EXAMINATIONS	PAGE
COMPANY WITNESSES:	
NEIL GRASER	
Cross-Examination by Mr. Pringle	145
STAFF WITNESSES:	
MARK KIESLING	
Questions by Judge Pridgin	148
JUSTIN TEVIE	
FRANCISCO DEL POZO	
Direct Examination by Mr. Pringle	151
DR. HARI POUDEL	
Direct Examination by Mr. Pringle	154
BRAD FORTSON	
J LUEBBERT	
Questions by Commissioner Mitchell	159
Questions by Judge Pridgin	168
Questions by Commissioner Mitchell	174
Questions by Judge Pridgin	177
Recross-Examination by Ms. VanGerpen	180
Recross-Examination by Mr. Holthaus	185
Redirect Examination by Mr. Pringle	188
OPC WITNESSES:	
DR. GEOFF MARKE	
Cross-Examination by Mr. Pringle	194
Cross-Examination by Ms. Moore	199
Questions by Chair Hahn	211

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

EXHIBIT INDEX

COMPANY EXHIBITS

PAGE

Exhibit 100	
Rebuttal Testimony of Matt Michels	13
Exhibit 101	
Surrebuttal Testimony of Matt Michels	13
Exhibit 114	
Application and Revised Appendix A through O	79

STAFF EXHIBITS

Exhibit 206	
Direct Testimony of Brad Fortson	157
Exhibit 207	
Rebuttal Testimony of Brad Forston	157
Exhibit 208	
Surrebuttal Testimony of Brad Fortson	157
Exhibit 215	
Rebuttal Testimony Francisco Del Pozo	153

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 CALLAWAY)

I, Shelley L. Bartels, a Certified Court Reporter, CCR No. 679, do hereby certify that I was authorized to and did stenographically report the transcript of proceedings; and that the foregoing transcript, pages 1 through 216, is a true record of my stenographic notes.

I FURTHER CERTIFY that I am not a relative, employee, or attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 30th day of July, 2024.



Shelley L. Bartels, CCR 679

<hr/> \$ <hr/>	110 9:25 146:24	2017 200:8,18	216 155:10,13,25 156:5
\$1 39:12,18	112 97:22 99:24	2018 133:8 165:17 202:17	217 155:10,13,25 156:5
\$112 93:23,24 94:2	114 78:6,13,16,25 79:2	2020 87:23 134:2	218 155:10,13,25 156:5
\$166.5 92:23	115 78:4	2021 202:17	222 10:1
\$203 93:1	11:00 45:11	2022 194:9	23 44:19 47:11 48:8
\$370 95:14,18 96:9	11:20 45:12	2023 6:16 7:3 12:10,14 35:4 44:2 47:15,16 48:1,4 131:9 134:2 160:8 186:2 189:25 194:9 199:20 200:1 211:5	230 10:6
\$4 22:9	11th 186:1 199:21	2024 58:16 134:3, 4 176:10 186:1 187:12 190:1 192:1 194:9 199:21	246 80:22,23
\$521 38:2	12 74:13 173:13	2025 9:25 18:8,12 20:14 80:7,23 214:21,22	25 7:11
\$70 93:2 94:2 204:21 205:5	124 187:10	2025-2026 18:7	252 81:1
\$900 96:25	12:30 63:19,23 85:25	2026 10:1 20:14 80:10 214:22	258.66 81:2
<hr/> 0 <hr/>	13th 16:5	2027 10:1 20:15 80:10,12 81:1	269,942 80:5,8
0124 187:3	14 44:2 48:4 163:16	2028 32:20 54:3 57:14 59:25	275,357 80:11
<hr/> 1 <hr/>	14th 47:15	203 93:7 97:21	277,042 80:12
1 195:22 207:22	15 45:7 93:21 97:10,14,17	203.5 96:14,15	27th 58:16
1,000 145:19	15-minute 45:16	2033 75:8	28th 30:12
1.0 196:17,20	166 9:25	2034 37:15	<hr/> 3 <hr/>
1.3 196:20	166.5 95:14	2037 37:16	3 129:8,15,19 131:2 165:12,17 189:2 194:10 199:21 201:1,4,5, 17 202:16
10 45:6 79:15,18 80:22 82:17 97:7 98:9,14 99:2 137:22 168:3	19 95:8 96:6 132:1	206 157:11,15,17	30 52:13
10.28 120:1	1:30 86:2,6	207 157:12,15,17	300 10:9 34:10 75:7
100 12:7,18,20,24 13:1,2	1st 29:23 30:10,12	208 157:13,15,17	31st 16:17 29:24 30:10
101 12:8,18,21,24 13:1,2	<hr/> 2 <hr/>	215 152:3,6,15,19, 25 153:5,7,8	35 93:3,6 95:13 96:7,15
10:00 4:1	2 29:22 152:8 165:14		36 45:5 212:17
11 152:8	20 47:14 91:21 96:6 211:7		370 95:5,10 99:22
11-step 206:24	20-plus 82:6 83:24		38 119:25
	200 29:22 121:3 132:8 187:21		
	2000s 88:25		
	2011 88:1		

3:30 174:10		95 196:5	accurate 52:11
3:45 174:11,14	<hr/> 7 <hr/>	9:00 216:2,12	109:11 115:17
<hr/> 4 <hr/>	7 37:22 155:18	<hr/> A <hr/>	139:15 177:23
4 37:19,21,24	70 93:6 95:7 96:14		179:25 180:2
47:14 53:14 55:1,	98:1		211:24
12 83:24 155:15	750 7:13,15	a-ha 208:12,14	accurately 56:11
45 92:21	7:00 86:17,22	a.m. 4:1	109:9,11 170:22
4:47 216:13	<hr/> 8 <hr/>	ability 82:2,23	183:8
<hr/> 5 <hr/>	8 58:15 79:14 80:6	118:23 181:21	ACEEE 97:9
5 37:22,24 97:12	98:9,14 163:18	absent 41:17 60:1,	achievable 61:16
155:15,18	8,000 96:23	9 101:13,16,21	achieve 74:6 76:3,
50 52:10 91:18	80 20:14	109:12 196:11	6 85:10
92:18 168:3	800 7:10,14 8:1,3,	204:24 205:8,10	achieving 69:13
51 91:18 93:14	32:19,22,23 33:5,	absolute 39:19,23	76:12
52 98:20,23	15 34:4,9,11 35:4,	absolutely 15:23	acknowledge
55 81:1	16,18,23 36:1	17:15 29:14 37:20	62:10 104:2
5:00 14:7	37:6 38:6,19	51:19 54:8 60:19	Act 137:14
5G 128:5	40:25 41:9,15	69:7 88:14 111:6	action 103:18
<hr/> 6 <hr/>	42:6,13,17,24,25	117:5 205:21	122:3 137:11
6 37:22,24 58:25	43:4 50:22,23	abstract 133:24	actions 18:11
155:16	52:7,14 53:20	accelerated 6:11	83:13 137:6,9
6,000 46:11,14,22	57:14 58:13 59:24	accept 91:4	activities 205:7
47:3 49:3,5,8,11,	61:2	accomplish 91:23	actual 58:22
15,17,19 50:5,12,	800-megawatt	accordance 68:1	172:3,12,21,22
15	6:15	account 82:9	177:24 204:23
60 58:25	825 202:3	115:10 118:12	adapt 122:13
60-day 58:24	83 20:14	137:2 142:17	206:17
600 7:8,11 33:16,	86 20:14	167:24 170:22	adapting 207:2
17,21 34:7,8 43:1	88 20:15	171:13 177:24	add 34:4 130:11
62 94:3,10 98:3	8th 187:12 190:1	183:8 196:2	added 7:10,23,25
99:24	<hr/> 9 <hr/>	204:4,15	73:24,25
	9 163:18	accounted 61:17	adding 7:14 165:5
	90 115:13 121:3	76:19 171:7	addition 19:3 69:3
	196:5	accounting 71:4	additional 7:15
		171:2 183:1	8:15 17:8 35:14
		accounts 172:20	61:10 138:5
		accuracy 170:1	152:11 174:19
		178:17 180:11	additionally 12:9
		181:10	

<p>additions 6:10,23 56:23,24 71:2</p> <p>address 70:21 99:6,7 102:18 121:19 136:3,13 148:21 168:24 177:12 192:6 193:5</p> <p>addressed 8:9 14:2,3 203:17</p> <p>adds 111:19</p> <p>adequately 138:2</p> <p>adjust 5:25</p> <p>adjusted 98:1</p> <p>administration 182:7</p> <p>administrative 91:16 92:20,22 96:10</p> <p>administratively 78:4</p> <p>admit 12:5 78:3 146:24</p> <p>admitted 13:1,3 78:10 79:1,2 153:7,8 157:15,18</p> <p>admittedly 192:17</p> <p>adopt 119:9 129:6, 11</p> <p>adopted 119:7,24</p> <p>adopting 142:21 204:17</p> <p>adoption 120:5 124:3,15</p> <p>advantage 100:17 101:23 118:21 126:15 210:11</p> <p>advocate 102:21</p> <p>advocates 102:3</p>	<p>affect 60:17 106:19 142:23</p> <p>affects 140:8</p> <p>affiliates 190:24</p> <p>afford 102:12</p> <p>afforded 118:20</p> <p>affords 114:13</p> <p>afraid 44:16</p> <p>afternoon 64:15 70:5,6 86:10 87:15,16 90:16,17 105:4 129:2 135:15 141:16 145:13,14 151:15, 16 154:18,19 174:16 180:20 185:5,6 194:4,5 199:16,17 211:2 216:5,6</p> <p>agencies 122:3</p> <p>agency 103:18</p> <p>agent 137:7</p> <p>agree 39:10 40:17 41:8 46:7 48:21 50:15 51:15,20 52:19 55:9 66:12 67:24 69:5 88:12 98:2 105:12 107:19,21,23 108:12,14 109:18, 22 111:14 112:5 113:17,21 180:22 181:15 182:14 204:2 208:5,8 210:19 214:24</p> <p>agreed 48:20 109:8 124:20 194:10 195:1 198:17 202:8 211:17,19</p> <p>agreeing 134:9</p>	<p>agreement 126:17 14,20 87:24 88:12,16 89:13 90:24 91:21 93:13,23 94:1 96:23 99:9,13 100:1 101:16,21 103:8,9,16 104:25 106:15 108:12 109:6,16 114:10 119:19 121:7,13 124:9,22,25 125:2,25 128:10 129:1,4,6 135:20, 21 136:13,25 137:8,10,11 141:22 142:23 143:14,23 144:16 146:4,24 148:6 149:13 150:16 153:24 155:17 156:22 158:10 159:7 160:7 165:15,21 166:4, 13 175:1 177:21 178:25 179:5 185:1,19 186:2,10 187:11,14,18 189:9 190:4,23 194:19 196:5 199:11,19 204:2 209:25 215:19</p> <p>Ameren's 13:5 39:20 48:15 54:25 55:11 75:17 76:13 77:1,13,19 78:21 81:11,12 98:2 106:12 118:22 120:17 126:6,22 135:21 136:1 137:9,17 142:6 145:22 159:21 160:3 163:24 167:6 170:18 185:10 186:15 187:25 188:25 189:5 198:2</p>
---	---	--

AMI 120:16 177:21 178:13	appearance 4:21 139:15	202:22	argues 140:10
amount 37:14 51:23 59:10 73:12 129:17 141:21 159:25 160:2 164:13 170:24 188:3 205:8 212:2,14	appearing 129:4	apply 98:18 126:9 203:3,5	arguing 92:21 201:18
amounts 10:9 95:23 183:1,3 192:24	appendices 78:3, 14 190:5,25 191:6	applying 172:10	argument 25:5 100:4 103:21 107:4 196:15 197:12
analysis 32:13 34:18 37:12,23 59:22,23 98:18 155:4 160:6	Appendix 77:5,20, 21 78:14,22 79:10,14,20 80:6, 9,12,13 81:17 82:8 130:3 133:11 164:2 191:12,16	approach 43:11 44:7 93:15 100:11 148:16,21 168:24 179:20	arguments 25:8
analyze 23:17	apples 33:7 56:8	appropriately 183:7	arise 198:10
analyzed 60:7	apples- 35:24	approval 33:13 82:4,23 159:21 164:21 165:15 192:22,23	arises 136:16 137:5
Andrew 62:5	appliance 136:17	approve 19:7 41:24 104:7 105:14 118:8 135:1 139:12 143:3 148:18 168:22 184:10	ARRA-LIKE 102:25
annual 159:25	appliances 100:19 114:17	approved 38:22 39:22 40:12 50:24 51:17 54:20 55:10 57:23 76:4 111:1 115:15 121:21 133:7,16 134:23 140:11 171:23	arrives 144:20
answer's 179:21 180:25	application 8:12 9:9,21 10:8 15:20 16:11 18:21 33:11 39:21 40:1,5,8 53:14 55:17,21 56:14 57:3,16 58:10,22 61:12 65:18 66:11 67:5 73:5 76:14 77:1,6, 14,20 78:21 80:14 81:13,14 84:2 85:13 98:19 111:10 122:24 135:19 136:24 138:2 142:7 148:19 160:8 163:25 164:21 165:21 168:22,23 170:18 171:10 175:5,17,21 176:7,9 186:23 198:22,24 203:14 204:1,5	approves 18:20 66:10 203:13,14, 23,25	art 196:7,9
answers 53:11 123:11 152:19 156:5 215:5	applications 16:15,16 107:14 208:21	approximately 46:11 93:23 126:21	articulate 5:24
anticipated 40:11 54:11,13 59:25 61:12	applied 136:2	April 28:16 59:1 189:25	articulated 103:6 208:13 214:17
ANTONIO 14:13		Aquila 88:2	articulating 111:4
anymore 34:21,22 133:20		ARCS 111:11 122:25	aspect 72:2
anytime 116:13 117:8		area 171:15 214:8	aspects 19:1 166:1 182:22 183:2
apologies 62:11, 13 128:18		areas 25:16 67:17 126:25	assessment 105:13
apologize 31:19 44:6 47:16,21 48:24 99:5 147:1, 4			asset 28:16 136:17
apparent 191:21			assets 17:6,25 18:5 20:21 27:4,5
			assistance 127:17,24,25
			assume 46:10,21 48:4 49:2,17 50:13 58:25
			assumed 81:16 140:2
			assuming 49:11 50:4 112:16 128:24 140:17

167:14	199:19 206:6	backbone 163:24	8 166:17 167:22
assumption 71:21	auditor 137:16	backtracking 21:9	168:5 175:23
99:7,13 160:19	185:18 200:2	backwards 75:19	194:24 198:7
162:9 164:18,19	202:1 205:13,25	bad 121:24	basket 23:5
182:23 188:12	206:5 207:8	balance 7:14	bear 9:18 15:9
assumptions	211:14	11:11 32:21 33:4	53:24 104:12
51:20 52:18 55:1,	authoritative 97:9	35:10 54:3	bears 21:12,14
12,19,22 56:5,14,	authorized 92:8	balancing 180:2	began 4:1 133:7
15 57:2,7 59:22	averaging 167:14	bandwidth 123:19	begin 18:2
60:20 61:8 71:5	avoid 73:22 93:5	bar 206:2,3	beginning 59:8
73:17 82:3 99:19	178:22 184:12,15,	barrier 188:13	71:23 109:22
108:14 109:5	16 198:9	bars 51:3	182:24 184:1
139:3,17,18	avoidance 6:2	base 38:22 111:16	begins 63:17
140:5,13 160:10,	40:4	123:15	behalf 129:4
15 162:13,25	avoided 34:20	based 9:13,22	141:5,9,12 183:18
165:6 166:1,14	37:8 75:11	10:24 24:4 26:23	belief 152:16
176:17,22 178:22,	171:21,22 172:12	30:25 32:14 33:21	156:1
23 187:24 190:15	181:6	34:17 35:20 37:12	believes 144:3
192:16,17,19	avoiding 37:7	39:2 47:5 48:18	bench 5:14,19
193:1,2 197:23	75:14	49:1 52:24 55:22	10:23,24 15:8
AT&T 128:8	aware 14:6 55:20	56:3,6 57:22	21:3 23:21 24:4,5
attached 176:15	66:5,8 87:17 88:3,	59:23 61:7,23	25:11 30:25 31:25
186:14 187:3,5,15	16 129:8 146:4	68:22 72:11 81:25	32:5 38:14 39:2
attempt 35:24	155:23 199:23	82:23 84:19 95:25	52:2,23 58:5
192:8		97:5,15 98:15	59:13 60:12
attempted 35:7	B	149:2,6 180:14	61:23,24 70:1
attempts 67:25		198:13 201:21,22	72:9,11 86:4,24
attendance 48:6	back 4:3 13:25	202:10 206:17	89:15 114:2
attribute 167:25	42:25 44:10	207:21 211:9,20	117:18 123:4
168:1,3	45:10,12,16	214:15 215:9	124:16 135:6
attributed 93:13,	46:15,17 48:24	baseline 163:5,7,	141:2 144:12
22 94:1 124:22	63:4,15 86:1,10	11	146:17 148:9
141:22 143:22	108:6 111:12,25	baselines 163:1	149:1 150:18
198:2	123:15,25 124:1	basic 37:2	154:1 156:25
attribution 125:10	129:15 137:14	basically 9:13	158:12 159:9
142:23	161:11 164:22	37:5 95:14 128:11	168:17 174:12
auction 16:18 28:4	167:23 170:9	basing 163:25	180:14 210:23
29:4,23 36:22	174:17 176:20	164:1,4,5 173:19	215:9,10 216:7
38:20 70:10,12,19	184:6 186:16,25	basis 68:1 92:17	benchmark 82:2
auctions 28:17	188:24 192:10	96:3 97:23 136:3,	benefit 17:9 38:24
audit 185:19 186:1	198:25 204:1		67:2,5 69:1,14
	205:25 215:1		73:9 75:14 76:1,
	216:5		

16 81:9 85:18 120:23 131:13,21	box 195:11	buildings 109:15	calling 82:20 93:8
benefit's 75:24	boy 98:8 195:25	builds 123:16	calls 25:9
benefiting 74:8 75:1 83:9	Brad 31:5 139:9 157:2,11,12,13,24	built 40:9	camera 43:11
benefits 22:2,3 39:24 40:6 67:15 73:4,6 76:17 83:14,18 131:1,11 139:1 173:7	breaching 195:4	bulbs 115:1 196:6 197:20	canceling 6:2
bias 197:8	bread 176:20	bulk 125:11	cancelled 89:2
biasness 207:24	break 26:24 44:22 45:4,16 46:16 63:8,18,20,22,23 85:25 86:4 91:19 161:18 174:7,10, 11,13	burden 192:25	cap 16:25 70:10 213:7
bid 38:19	breaks 125:5	business 16:2,13 17:11 26:16 80:1, 19 116:10 212:11, 12	capability 17:13 28:15,24 179:9
big 59:18 106:25 108:24 122:16 205:7 210:5	bridge 194:22 203:21	buy 100:16 124:24	capable 17:18 34:1
bill 43:16 104:13 127:25 131:4	briefly 11:4 26:8 64:10 87:11 90:12 101:1 123:6 180:16	buying 125:11	capacity 6:1,21 7:16,17,19 9:18 11:11,12,14 16:18 17:1 18:6,7,13 28:4,9,19 30:22 32:21 33:3,4 35:9, 13,14 36:22 37:7, 8 38:20 40:16,18, 23 48:10,12 50:25 54:3,14 55:16,19 56:2,13,21 70:10, 19,21 71:1,2,15, 20 108:1,10 109:23 151:22 155:1 172:6
billion 22:9 38:9 39:12,17,18,22 53:20	bring 40:6	buys 117:8 124:20	<hr/> C <hr/>
bills 121:10 131:14,20	bringing 208:24	calculate 159:24	capital 91:10,15 92:6,14 93:7,8 94:1,7,9 98:12
bit 6:20 14:4 16:10 18:16 21:9 29:13 41:5 73:11 76:24 88:11 95:3 98:8 99:12 101:19 107:4 119:19 143:17 159:14,16 164:15 175:15 181:23 182:10 186:25 197:14 206:23	brings 7:13 61:11	calculated 93:23 176:18	captured 114:24
black 195:11	broad 25:10 82:9	calculating 24:22	car 117:8
blind 173:15	broader 20:20,22	calculation 162:14 164:10 167:5	care 122:11
board 126:17 203:7	broken 26:14 83:2 160:10 161:3 182:11	calculations 52:18 72:25 73:4 81:4 84:6,13,19 132:23	cars 114:15
boat 215:1	brought 9:6 184:13 213:10	calculator 79:12, 21 81:7 133:3,4	cascading 165:2
boiled 82:6	brought 9:6 184:13 213:10	calculus 21:18	case 4:25 12:10 36:4,10 56:11 58:17 60:7 65:17 66:22 68:4,6,17 69:10 70:25 71:7 75:18 87:23,24 92:3,7,19 93:18
	bucket 162:3	calendar 16:16 29:8 108:7,8 175:20	
	buckets 15:23 81:6 83:3,22,25 84:7,13	California 161:2	
	budget 95:15 99:22	call 30:4 71:9 77:4 86:24 112:17 194:24 197:16	
	build 18:13 34:15 117:13	called 34:1,2 55:25 196:8	
	building 10:19 18:11 91:8		

97:1 101:6 102:9, 11 117:2 121:20 137:5,7 139:25 160:8 166:20,21, 22 172:1 176:14 177:3,15 178:9 184:2 191:24 196:19 200:24 201:1,2 209:24 213:15	210:23 211:1 215:5,7,8 challenge 90:22 104:1 124:23 chance 83:12 131:8 174:9 181:19 184:3 change 16:4 34:16 82:20,22,25 91:1 142:18 209:7 changed 196:11, 12,21 208:9 changing 165:25 charge 6:1 123:12 164:22,23 166:17 167:20 193:3 charged 168:6 chart 48:16 135:3 cheap 180:1 cheaper 39:16 125:9 181:16 check 27:7 39:13 70:6 100:10 121:5 146:7,9 213:4 checked 108:7 132:8 cheering 147:2 chillers 107:11 chunk 104:9 circle 111:12 194:18 197:10 cita 146:5 citation 140:5 145:22 161:11,12 citations 139:19, 20,21 140:13 146:3,5,6,8 160:12 161:17,19, 25 162:5,7,20,24	175:8,13 176:6,17 185:9 187:23 188:8 190:16,22 191:3 192:15 citing 192:18 City 88:2 claimed 196:7 claims 137:18 190:4 clarification 57:13,19,21 58:3 83:21 100:22 125:17 clarify 6:19 25:14 41:4 53:13 55:1,6 57:15 123:10 124:4 205:15 clarifying 57:24 205:20 clarity 73:1 76:25 class 67:6 74:9 179:6 classes 212:10 claw 123:15 124:1 clear 35:6,8 53:24 110:22 127:12 140:4 172:14,16 175:12 201:3 climate 160:22 clock 70:6 close 23:16 93:3 closed 65:7 closest 91:13 clothes 133:19 cloud 197:8 coal 91:3 coded 139:19 161:10 176:12	coincide 82:16 coincident 82:16 colder 106:24 Coleman 5:18 114:3,4,6 117:11, 15 collaborated 129:14 collaboration 129:16 200:9 colorful 51:3 column 80:4 combination 185:15 214:7,12 combined 20:20 comfortable 179:12 210:2 commend 121:12 comment 130:9 131:8 200:22 205:16,22 commented 131:7 comments 78:25 commercial 107:8 109:14 commission 12:12 13:5 18:18, 19 33:12,13 39:21 40:13 41:24 50:24 57:25 58:1 66:10 73:3 84:10 97:2 98:2 104:7 106:5 110:25 111:1 118:8 120:7 122:24 123:24 129:3,5,7,18 133:7 134:24 135:1,16 138:22 139:11 141:18 143:13,22 148:18 151:23 155:3
--	--	--	--

159:10 165:14 168:21 171:12,23 173:23 177:9 184:9 195:21 203:13,23,25 204:1,9,10 209:24 210:9,15 212:4	companies 91:7 116:4,18 117:1 122:21	completed 59:7 138:23 143:8,13	175:16
Commission's 129:9 211:14	company 6:15,17 10:19 13:2 21:12, 14,23 22:15,18 26:22 34:19 35:3, 5 69:4 77:7 79:16, 18 84:24 85:15 91:22 92:12 105:23 108:4 109:24 113:13 114:24 115:20 116:10 122:20 123:16 129:10,13, 18 132:19 161:15 163:12 168:10 172:14 175:10,11 176:8 177:13 188:1 190:7 192:3,12,21 196:7 206:1,5,16 207:11,17,23 208:23 210:1 212:16,17	completely 57:6 89:1 100:11	conditioner 88:24 113:20
Commission- approved 143:9 180:23	company's 8:11 21:14 22:22 32:8, 13 36:6 60:16 66:11 69:6 79:2 83:14 92:20 115:17 128:25 131:23 184:5 196:9 204:11 211:19	completeness 159:15	conditioners 112:25
Commissioner 5:16,18 20:9 21:4, 8 23:18,20 24:25 25:15 44:14,17,20 59:14,17 60:10,11 89:17 114:3,4,6 117:10,15,17 131:10 159:13 168:14,16 174:18, 20,22 177:16 185:8,11 186:9 188:7	comparable 90:21 92:5 178:18	complex 91:25	conditions 35:21, 22 49:20,24 197:21
Commissioner- approved 138:24	compare 173:5	complexity 93:5	conference 177:3
Commissioners 135:15 141:17 142:6 143:7 144:7	compared 170:24 172:13	complicated 98:9 167:11 195:20	confidence 205:9
commit 40:15	comparing 32:14 33:7 80:16	component 111:22 133:10 167:19	confident 109:10 195:9
commitment 29:17,19,20,25 30:2	comparison 35:25	compounding 162:19	confidential 43:10
committed 41:12	comparisons 72:5	comprehensive 132:14 133:6 169:4	confidently 50:1 52:12
committing 28:12 29:15 40:21		computers 107:13	confirm 27:8,16 68:3 120:25 187:5
communicate 205:25		con 143:24	conflict 16:20
community 103:18 122:3		concern 55:7,11, 15 132:3 175:1 189:11 204:18 207:2,3,5,10,17, 20 209:9,20 211:15	conflicts 181:5
comp 91:13 126:16		concerned 117:14 195:4	confused 41:15
		concerns 32:15, 18 33:2 54:25 55:1 56:23 57:2,3, 4 60:9 61:9,15 136:12 148:22 168:25 194:14,15 208:24 210:4,5	confusing 197:16
		concludes 135:3	confusion 6:20 33:2 48:25
		conclusions 199:24	conjunction 17:25
		concrete 95:21	connect 49:1,9 56:13
		condensed	connection 167:4
			cons 198:8
			conscious 102:3
			conservative 93:15 97:7 98:19
			considerably 107:7
			consideration 5:25 35:16 130:7 143:23 144:5
			considerations 35:1 67:18

142:14,16 143:1 144:1	122:9 137:5 207:12	110:13,14 111:22, 23 126:7,11 144:17 147:10 148:16 151:4 152:15 153:4,11, 12 154:6,7 156:1 157:4 182:18 187:12,13 189:5 194:12 197:23 202:22,23,25 206:8 209:14 210:10	Council 5:6 counsel 4:17 5:10 11:2,19,20 12:16, 23 14:16 15:4,16 26:6 31:19,20 39:3 44:21,22 45:17,22,23 52:24 61:24 64:9 72:12 86:3,24 87:10 114:1 117:23 121:16 126:5 128:20 135:6 141:12 144:12 147:24 149:2,7 150:9 153:16 156:14 158:3,25 174:12 180:15 188:19,25 200:20 205:14 216:7
considered 33:17 41:16 123:14,17 129:18 130:25 181:12,14	contractor 103:16 contractors 181:25 182:1,3	corrected 7:25 37:5 208:4	Counsel's 194:17
considers 204:13	contradict 54:5	correction 152:7 155:14	count 95:10 97:1
consistent 129:9	contribute 112:2 130:10	corrections 152:5, 11 155:12,22 182:13,16 183:20 207:9	counterfactual 100:8 142:2 196:23,24
consists 130:2	contributes 113:21	correctly 89:25 98:24 106:6 113:5 144:16 149:20 183:17 186:19 189:12 209:18	counting 96:4
constantly 199:4 208:18 213:16	contributing 113:2	cost 6:2 34:12 38:1,3 39:11 53:17 65:25 66:2 81:23 91:1,2,16, 19 95:19 103:15 104:3 118:1 125:9 127:20 169:24 171:21 172:3,21 178:16 180:1,11 181:12,20 183:7, 11,12 209:5,6,7, 15,16 213:10	country 200:12
construct 71:15 112:6 122:2	controlling 6:24	cost-plus 91:8	couple 15:10 21:22 60:13 62:18 101:25 105:17 106:13 114:13 122:8 126:1 132:7 174:9 189:20
consultant 138:24 143:9,15,16 179:18 207:23 209:20	controls 109:14	costs 22:16 37:7,9 68:17 91:1,16 95:5,20,21 102:23 118:12 171:22 172:12 178:18 182:25	coupled 37:21
consumer 102:2, 21 205:11	conversation 190:19		court 43:15 86:19
Consumers 5:5	conversations 175:10,11 176:8, 23		cover 7:11 34:9 35:13,14 41:16,20 42:24 61:4 187:15
contained 152:15 155:25	convert 126:14		covering 61:10
contemplating 18:24	convinced 110:4		COVID-19 116:4
contemporaneous 68:15	convoluted 195:20		COVID-19's 116:3
contentious 143:4 195:23 198:10	copies 43:18,19 44:6		CP 71:10
contents 132:17	copy 44:4 47:7 79:5 133:2		
context 136:11 196:4	corporation 200:11		
continue 17:8 18:13	correct 4:7 8:20 10:20,21 23:12 26:16 28:5,7 30:1 40:10,11 41:12,21 42:2 46:8,14,19 47:4 48:11,17 54:17 64:20 65:16,21 78:17 88:13 95:9 96:13, 16 99:3,11 101:21,24 105:6		
continues 60:21			
continuity 29:16			
continuous 207:14			
contract 27:10 29:1,2 95:23			

craft 121:17	cumulative 80:18	cycle 32:20 37:19, 21,22 40:9,16,22 41:1,5,9 42:3,7 46:13 47:2,3 49:4 50:11,23 53:14 54:3 55:1,12 58:13 59:24 77:8 91:5 109:25 131:2 139:2 140:10 165:12,14,17 182:2,3 194:10 195:22 201:17 207:22	120:2,10 124:21 125:7 188:3 202:9 205:2
created 75:9 84:14 188:13	curbing 120:24	current 18:20,22 19:17 30:10 35:15 46:12,25 50:7 54:13 101:5 138:1 181:17	days 6:24 33:21, 23,24 34:7,10 43:2 58:25 86:14
creates 7:24	curtail 113:13,15	curtailment 29:3 112:13,18,20	deaf 209:22
cripple 118:15	curtailable 88:20, 21 110:3	custom 166:8	deal 81:18 111:3 116:25 170:9
crisis 110:17	custom-prepared 166:8	customer 7:4 22:14,17 25:6 29:3 38:24 101:7 102:12 110:12,15 113:9,19 124:18 126:13,14 131:4 212:10	debacle 128:13
criteria 79:24 80:17 82:13 121:1	customer's 22:6 124:24	customers 6:5 22:3,10,25 38:23, 25 40:6 101:22 104:8,9,11 112:21,23 114:11 117:23 118:9,13, 18,20 121:9 123:12 124:17 125:9 126:9,13,21 131:12,13,17,19, 20 166:17 168:6 177:22 178:3,12, 20 179:6 183:3	debate 98:12
critical 92:3	cut 16:17 183:14 198:4,5,21,22	customer's 22:6 124:24	debating 134:13
critically 106:4	cybersecurity 128:12	cycles 137:1 198:4 208:4 210:14 211:20	decade 103:2 198:14
criticism 103:8		cycling 88:25	December 16:17, 19 17:12 29:16,24 30:12
criticisms 51:21		D	decide 82:21 118:4 210:17
cross 4:22 11:3 14:20 31:13,15,20 62:7,22 64:7 65:1, 8 69:18,19,20,23 78:6 87:6 89:7,10, 12 90:7,9 100:24 104:22 144:19 145:6,9 146:14,18 147:20,24 148:1, 4,6 149:7 150:5,9, 11,14 153:10,16, 18,21 156:16,19 157:20 158:3,5,8, 24 159:3 184:23 193:21,23 199:9, 12		D-E-L 151:19	decided 161:20
cross-examination 4:24 11:6 14:22 64:5,9,13 84:9 87:10,13 90:11,14 101:2 105:2 145:3,11 147:22 150:7 153:14 156:12,14 157:6, 22 158:18 193:25 194:2 199:14		Damn 208:15	decisions 205:2
crucial 71:4 139:1		data 107:13 114:18 117:7 138:15 159:15,18 166:8 167:2 172:2,5,11 174:24 175:5 176:3,12, 13,18 178:5,12, 13,24 179:1,4 180:7,9 181:9 182:4 186:23 187:1,10,19,24 188:1 189:9 190:4 191:5 214:13	deck 43:20 45:2 63:7
crude 118:5		date 16:6 66:1 68:13 139:2 171:21 187:11 188:2	decreased 114:19
crumbs 176:20		dated 48:3 186:1	deemed 133:12, 14,18 134:7 135:3 139:8,13,18,20,22 140:1,8,12 159:22 161:24 163:13,23 164:5,9 165:16 166:5 174:25 177:25 185:12
		dating 129:15	deep 205:4
		day 20:10 22:16 48:5 82:3 104:8 113:19,22 114:7	defer 36:24 37:17, 22 40:5 53:14,16 70:11 73:22 74:7, 17 75:8 89:1
			deferral 37:25 52:16 73:15 74:15 76:18 173:8,12

deferrals 40:3	108:10,18 109:19	designing 74:5	diminishing
deferred 34:19,20	110:6 173:5	76:10,12	122:16
52:15 85:6 105:9	demands 7:7	desired 74:6,7	Dippell 65:2
deferring 37:15,20	demographic	detail 92:3 134:15	direct 4:21 58:15
40:2 75:15 100:6	101:9	209:8	64:25 66:17
deficiencies 185:9	demonstration	detailed 9:22	73:11,14 119:18
define 127:16	35:17	162:14	151:1,13 154:16
defined 112:7	demonstrative	details 16:12	155:8 157:11
definition 90:25	77:13,19 78:23	28:10 53:25 57:12	163:3 194:24
definitions 127:11	denominated	82:7 130:16,17	direction 6:10
definitively 179:12	88:22	131:16 135:17,18	directly 48:25
Del 138:4 151:3,6,	denote 196:9	143:11 161:4	136:3 137:6
15,21,25 152:1,	denying 102:5	167:10 179:22	disagree 40:3
12,22,23 153:3,13	department 97:12	180:3 181:2,8	100:13 115:3
delay 37:13	151:24 155:4	182:9	121:14 215:2
deleted 189:19	200:10	determine 43:9	disagreeing 115:3
deliver 21:25 22:1	depend 23:13	56:19 138:15,23	discipline 116:9
demand 8:24 9:11	181:2	141:21 143:22	disclaim 65:1
10:2,4 15:17,19,	dependent 17:21	164:3 182:14	disconnect 36:8
21,24 16:2,3 17:2	depending 59:21	determined 34:18	56:17,18
18:20,22 19:2,6,	60:2 96:7	develop 209:8	disconnected
11,14,20,21 20:1,	depends 110:19	developed 130:15	131:19
3,7,11,21 24:17	203:8,10,11,12	135:22 200:12	discovering 207:8
26:13,15,16,19	deploy 10:3	deviated 198:3	discovery 177:2
67:25 71:19	deployed 177:21	devil 135:17	discrepancies
80:17,23 81:21	describes 67:12	difference 83:23	198:6
82:14,17 88:11,	192:1	92:8 103:14 134:7	discuss 47:17
12,17,18,22 93:8	describing 136:20	170:23 182:4	48:2 136:5 195:5
96:3 105:20,22	138:10,17	189:14,23 190:2	discussed 32:19
106:3,8,12,15	description	198:17 205:1	37:3 53:19 55:7
107:1,5 108:15,16	132:18	210:5	61:11 105:8 124:2
109:2,8,9 110:6,	design 26:23 67:1,	differences 74:19	137:25
11 111:1,8 112:19	10,12 68:24 71:22	171:2 189:16	discusses 142:11
119:2 122:25	73:8 74:25 75:22	differential 169:25	discussing 20:23
135:23 139:16	151:24 155:3	differently 24:19	30:21 52:8 61:3
160:3 165:1 173:9	166:8 169:14,19	54:12	188:25
212:18 213:6	designed 25:4	difficult 42:20	discussion 47:5
demand-side 9:9	71:25 75:19	119:7 138:15	56:9 57:13 99:20
28:1,3,19 41:24	129:16	169:1,22 196:23	124:18 176:24
46:18 49:18 50:7		diminishes 34:12	185:7 186:8,22
55:8 61:3 74:1			

discussions 175:25 190:7 195:18,23	185:15 187:22 188:10 191:12,18	due 142:23	201:20,22,25 204:22 208:12 211:18
disincentive 87:20 138:13,20 164:11, 24 167:6,18 168:6 193:3 216:3	dollar 69:12 70:14 95:23 175:24 205:8	duly 4:13 14:14 31:6 64:2 87:3 90:4 144:25 147:16 150:2 151:7 154:11 157:25 158:22 193:18	ears 209:23
disincentives 136:24	dollars 25:1,25 38:9 39:22 40:5 53:20 94:8 102:24 192:24 211:25	dump 188:1	easier 26:25 169:23
dispatchable 106:22	dominant 137:20	dynamics 34:5,16	easiest 111:2 117:13 208:11
dispatched 8:21 36:11	DR1 176:14 186:17 189:14,15, 23 192:9	<hr/> E <hr/>	easily 84:22
disputes 129:17	DR124 189:5,15 190:1 192:8	earlier 4:16 14:3 48:25 53:19 57:21 70:8 81:8 112:13 115:8 128:18 137:15 164:2 165:18 200:3	ebb 117:1
distinction 24:21 130:18	drafting 207:11	early 18:8 28:16, 23 59:1 160:7 175:4 176:10	ebbs 116:2
distinguish 106:5	dramatically 34:5	earn 68:20 93:6 98:11 99:9 204:24	economic 115:25 116:16 200:10
division 155:4	drawing 173:15	earned 84:2 92:8	Economics 115:7, 12 137:16 185:18, 22,24 199:19 211:8,12,13
DM 161:6 175:13	drive 171:2 173:7 180:10	earning 97:24 98:3 100:1	economist 120:8 151:23 155:5
docket 13:11,12, 15,17,19,20 52:10 57:15,24 129:7 200:8 201:8	drives 163:18	earnings 4:5 5:25 22:3 24:17 34:23, 24,25 37:9 64:18 65:14,20,24 66:7, 11,13,18,20,24 67:1,13 68:22,23, 25 73:16,19 74:3, 14,16,25 75:18,22 76:1,4,11,22 77:4 79:12,13,21 81:6, 10 82:5 83:11,14 84:13 86:11,21 87:19 90:19,21 92:10 94:20 95:7 102:22 104:5 105:9 116:20,23 123:14 164:6,25	education 120:4
dockets 143:5	driving 75:13 81:9 85:8 166:24 168:12	effect 51:21 93:20 136:15,16,20 138:10 142:20 166:11 196:22 204:13,14 209:12, 25 210:9	EE 79:23 82:16
document 79:11 132:4,6 133:8 134:22 146:5 160:14 161:14,16 165:9,21 170:20 177:8 185:25 190:21 192:22 200:8	drop 110:12,16,17	effectively 28:22 91:20 100:4 106:14 126:17 128:7,9 201:19 204:9,17 213:12 214:11,17	EEIC 68:17 167:19
documentation 162:22 165:23 189:10 192:14	DRS 186:16,21	effects 136:22 140:7 196:8	efficiencies 93:20 97:11
documented 132:6 171:8,9	DSIM 68:16	efficiency 9:24 10:1 19:7,10,14,	
documents 130:1 139:24 140:17 159:20,21 162:5, 10 165:9 167:2	DSM 34:6,12,13 37:13 39:14,16 40:1 42:16 46:7, 12,24 48:20 49:4, 21,23 50:1,10 51:16,18,20,21 54:19,22 55:2,10, 13 56:1,19,20 60:9 91:12 92:11 109:19,23 111:7 114:9 118:17		
	DSM's 50:20 106:7		

21 20:5,7,8,12 21:13 46:18 70:22 74:19 79:23 87:18 97:4,10 101:17,23 102:19 103:20 106:8,17,18 107:1,6 108:24 109:3,11 112:1 113:1,17 114:19, 21 115:22 136:16 142:12,22 163:14 167:20 168:12	EM 143:14 180:21 211:8	encourage 120:7 136:9 144:7	enroll 113:11
efficient 78:5 100:17,18 102:15 107:15 112:25 113:10,20 124:4, 20 125:1,3 136:17 163:8	EM&V 61:18 86:21 96:22 128:20 129:6,8,15,23 130:15 133:11 134:20 135:2,19, 21,22 136:1,2,6,8, 11,14 138:16,23 139:1,2,5 140:9 141:20 142:8,11, 13 143:4,8,11,13, 14,19,21 144:1 148:15,21 167:3 168:24 169:7,9,12 170:12 172:19 173:21 174:18 178:16,17 179:1, 18 180:22 182:16 183:7,11,12,19,20 185:19 186:1 194:7,8,14,20 195:13,19,22,23 197:2,11,13 198:4,10,17 199:19 200:23 201:12,17 202:6, 12 203:15 204:3, 12,15 205:8 206:11 207:23 208:22 209:7,19 211:5,8,16 214:17	encourages 143:7	enrolled 80:18 112:19 124:19
effort 105:24	EM&VS 206:19	end 22:15 28:22 59:8 76:12,14,21, 25 78:2 83:8,9 84:25 85:11 94:17 104:8 116:14,18 117:14 120:2,10 125:6 164:20,22 166:24,25 169:7 170:10,17,25 183:2 184:19 189:11 202:9 205:2 207:15 208:14 212:23	ensure 17:12 83:15,17 116:14 139:7 143:12
efforts 137:7 186:9	eminently 207:15	ended 25:10	ensures 75:24
elaborate 159:16	emphasis 70:25 194:8	ener 115:21	enter 45:1 152:25 157:7
elected 113:10	Empire 87:21,24	energy 6:1 9:23 10:1 19:7,10,14, 20 20:5,6,7,12 21:12,15 46:18 70:22 74:19,22 79:23 87:18 97:4, 12 101:17,23 102:18 103:20 106:8,17,18 107:1,6 108:24 109:2,11 111:7 112:1 113:1,17 114:21 115:22 127:24 136:16 139:16 141:21 142:12,21,22 159:25 160:2,13 163:14,19 164:13 165:1 167:16,19 168:12 172:3,21 198:15 200:10 212:18	entered 77:18 211:17
electric 88:5 114:15 117:8 126:18	empirical 214:13	energy- 100:16	entering 156:10
electrical 124:4	employed 151:22 154:25 155:2	engineering 197:19	entertain 140:25
electricians 122:9	employee 95:22		entire 13:12,14,19 45:1 99:20 139:23 148:19 167:22 168:7,23 190:21 192:22 204:6
electricity 114:11 119:10,17	employs 185:21		entirety 13:20 78:21
electronic 133:2	EMV 129:12,17		entities 106:10 190:24
element 207:12 214:12			entitled 185:25
elements 97:22 206:10			envy 118:2
eligibility 121:1,8			EO 24:22 67:10 69:4,5 72:24 73:3, 5,8,12 76:25 84:2, 7,20 93:3
eligible 121:10			EO-2023-0136 4:4
eliminate 142:7			EO-2024-0020 12:12 13:6
eliminated 128:2			equal 102:19 111:17 124:11 205:23
Elliott 7:6			equation 92:24
			equipment 100:17 102:15 107:15 160:17,21 162:12 163:5,8,12 183:6

equity 92:4 111:14 152:9	131:7 134:2,21 141:19 171:20,22 179:23,24 182:19 186:3 201:20 202:1,24 205:24 207:13 213:22 214:5,22	evidentiary 4:3	45:17,24 47:9 77:18 78:9,13,16, 25 79:2 146:24 152:3,6,15,19,25 153:5,7,8
equivalent 68:1 90:19 91:15,16,21 92:17 96:3,10 97:23 98:17 122:25	evaluations 182:3, 24 213:24	evolve 199:4	exhibits 12:18 13:1,2 31:11 155:10,13,25 156:5 157:9,11, 15,17
essential 135:18 136:11	evaluator 130:14 131:6 180:23 181:17	evolving 199:5 213:16	exist 100:9,15 102:8 139:20 141:22
essentially 163:7 168:5 176:15	evaluators 131:23 132:19	ex-ante 197:17,21	existed 103:1
established 49:21 183:13	evening 14:5,7 86:15	ex-post 197:17,25 198:1	existing 160:16
estimate 98:16 142:2 163:19 164:12 172:14,16, 24,25 209:6,16	event 17:11,14 27:12 33:1 36:5 41:7,10,14,17,19 42:5,16,19 48:23 49:7 50:17 60:1,5 61:1,21 109:24	exact 28:21 38:7 103:11 106:11	exists 34:25 162:1
estimated 39:12 142:25 159:25 160:3 166:25 167:16	events 6:6 7:5,8 24:18 30:4 33:18 105:21 117:24 123:13 175:17	examination 27:23 53:9 64:25 72:22 127:9 151:13 153:16 154:16 188:22	expanded 15:21 121:8
estimates 98:19 139:15 163:25 170:19 197:19	Evergreen 115:7, 12 137:16 185:18, 21,24 199:18 211:8,12	examples 122:19	expanding 17:1 19:11 105:25
estimating 71:6 160:12	Evergreen's 137:21	Excel 162:8 187:17	expand 18:22 19:19,21 20:1
estimations 167:8	Every 88:1 115:7 128:10	exception 200:22	expanded 15:21 121:8
ethically 197:7	Every's 122:6	exclude 7:17 11:11 33:4,10 34:2	expect 43:18 88:14 100:16 166:15
eval 199:19	everybody's 206:20	excluded 32:23,24 39:15 41:25 137:17	expectation 68:9
evaluate 23:15 132:13 169:18,22, 24	evidence 12:6,25 13:1 78:10 79:1 119:15 153:7 157:16	excludes 80:2	expected 35:12,13 52:7 67:14 74:21 160:17 163:20 170:13 181:11
evaluated 79:24 80:18 139:7 170:14		excluding 33:15 39:16 54:10	expenditures 91:10,11,15,17 92:15,19 96:12
evaluating 76:11 165:1 171:19 172:7 173:14		exclusion 32:21 54:2	expense 92:2 94:1 125:14
evaluation 82:12 93:11,19 129:21 130:3,6,9,13,22		excuse 11:20 127:6 130:23 149:5,22	expenses 95:25 111:17
		execute 17:19,20 23:2	expensive 102:3 103:17 120:20 209:17
		executing 18:2	
		exercise 109:4,6 200:18	
		exhibit 12:7,8,20, 21,24 43:6 44:23	

experience 197:10 206:19 207:22	extremely 94:25 98:19 169:22	February-march 29:14	find 13:25 34:14 63:22 76:13 97:10
expert 22:23	eye 173:15	federal 96:24 102:17 103:12 121:3 122:2,10,12 214:9	findings 199:24 200:18,22
experts 171:11	<hr/> F <hr/>	federally-funded 127:18	finds 206:5
explain 6:17 29:12 32:15 35:5,7 77:3 81:3 99:12 105:15 128:4 177:11 184:6 202:7 203:8 211:10	f-a-i-l-u-r-e 152:10	fee 92:1	fine 43:15 77:22 204:4
explained 32:23 35:7	F-R-A-N-C-I-S-C-O 151:19	feed 159:22	finish 86:21
explaining 35:20	FAC 116:22	feedback 129:18, 20 207:14,18	finite 104:16
explains 133:23	face 91:4	feel 68:5 73:5 148:14 199:3 208:22 213:9	first-year 196:2
explanation 83:20,25	fact 56:5 65:19 66:9 97:8 120:16 167:24	Fifty 94:11	fit 83:17 110:8
exponentially 114:20	factor 71:10 93:16 108:16 160:1 167:17	fight 209:23	fix 118:7 180:21, 24
express 132:3	factored 97:7	figure 123:25	fixing 180:22
extension 175:19 191:25 192:20 194:9	factors 92:9	figures 126:24 190:4	flat 194:15
extensions 194:7, 8,19 198:3,18 201:6,7,19 203:20 212:25	factually 197:23	file 12:12 13:6 134:1 162:8 177:5 187:18 191:4 200:4	flaw 34:13 94:21
extent 22:2,21 25:8 106:1 162:7 163:24 164:25 168:11 170:12,21 172:7 176:4 178:2,3,15 179:4 195:1	failed 136:13	filed 16:4 56:12 58:16 139:6 160:7 195:25 198:23 199:20 200:23	flawed 164:18
extreme 7:5,18 8:2,14,15,18 32:25 34:12 36:5 40:16,22 41:6,8, 10,14,17,19 42:5, 8,15,19 43:3 48:11,13,17,23 49:7 50:17 60:1,5 61:1,21 109:24	failure 152:9,10	files 187:17	flaws 32:13 35:1 140:7
	fair 192:7	filing 47:18 48:2 56:4 58:17 133:24 134:3,5 186:24 192:1	fleet 33:6,14,25 39:20 50:25 54:7, 12,15 57:23
	fairly 84:22 175:12 179:15 195:9	fill 90:24,25	fleshed 184:2
	fall 17:23 28:24 55:25 70:19,22 71:22 108:4 112:7 209:22	filters 142:19	flexibility 16:7 18:22 83:6
	falling 86:18	final 89:24 122:23 139:5 185:25 193:13,14	flexible 122:20
	falls 162:3	financial 75:25 83:13	flip 155:20
	familiar 13:20 36:21 70:9,12,13, 15		floor 212:1,13
	farther 116:15		flop 155:20
	fat 198:4,20,22		flow 117:1
	February 16:19 28:11,22 30:12 58:16		flowing 22:16
			flows 116:2
			flushing 16:12
			focus 55:23,24 60:22 82:25 83:1 203:19 212:13

focused 16:1 56:6 60:21 168:13 214:10	Fortson 6:14 31:2, 5,8,11,25 32:4,7 35:2 38:18 39:1, 10 45:19 52:6 53:11,24 60:16 61:22 63:3 70:8 105:6 139:9 157:2,12,13,22,24 186:6	frequently 160:23	10:18 30:20 33:5 35:4 38:3,19 52:7, 14 91:2 119:10 124:3,5,10,12 126:10,14,18,22 127:25
folder 187:21	Fortson's 157:5	Friday 213:20	gave 145:15 197:5 207:25 208:1
follow 24:24 27:25 54:19 68:19 77:14 91:12 124:14 161:11 176:20 186:19,22	forum 209:21 210:4,8	friendly 65:1 194:24	general 28:6,13 61:15 70:17,18 102:2
follow-up 126:2 176:13,23 186:16, 20 187:2	forward 4:10 14:10 57:17 71:14 73:25 85:17 91:5 103:5 105:24 110:5 118:16 125:4 138:16 142:5,9,12 143:6 144:4 178:8,19 192:20 204:2,6,10 210:1 213:13 214:20	front 20:13 33:12 38:4 39:21 47:9 57:24 79:6 164:20 169:7 170:17,25 183:2 184:19 195:21 209:24 214:25	generation 6:11 33:6,14 117:6
foot 205:23	found 7:6 162:24 191:19	frustration 94:16	generic 73:17 169:10
footnote 58:15 133:1 155:16,18	frame 28:14 29:15, 20 30:4,9,11 88:25 92:14 189:22	fuel 126:19	generous 94:12 98:6 125:5
footnotes 133:1	framed 108:13 165:20	fuel-switching 126:7	genesis 200:7,13
force 203:16	frames 195:25	full 84:2,7,20 93:3 189:3 194:17 197:9 203:16	Geoff 90:3 155:17, 19 193:17
forced 102:14	framework 34:16 73:18 110:8	fully 184:4	Gerri 33:22
fore 68:23	Francisco 138:4 151:6 152:1	function 106:11	give 16:6 18:21 42:21 44:10,23 58:11 110:10 111:24 130:17 132:2,8 139:14 159:17 163:6 165:11 169:4,5 172:14,16 174:9 179:21 187:6 189:17,22 197:4 207:24 212:21
forecast 171:24 172:13	frankly 71:22 213:10	funding 68:14,15, 16,17 214:9	giving 33:3 58:19 116:13
forego 46:11,24 49:4 104:19	free 93:18,21 97:15 130:5,7,23 137:25 138:3 148:14 170:6,8 183:2 196:17	funds 68:10 102:18 122:2,11, 12	go-to 106:25
foregone 21:24 25:21 34:24 66:20 67:15 68:23 73:16,19 74:3 76:11		furnace 124:5,10, 12	goal 74:8 75:9,13 76:13,14,21,25 83:8,9 84:25 85:11 125:8 173:7
forget 120:8		furnaces 142:19	goals 81:5
forgetting 142:18		future 6:6 34:20 35:15 39:20 40:3 41:25 72:6 75:6 117:24 123:13 137:1 143:5 173:9,10	God 119:15,16
Forgive 21:9		G	
format 79:11 134:16		gain 84:7	
formatting 182:5		gap 42:19	
formula 111:15 162:14		gas 6:16 7:10 8:18	
formulas 159:23 162:16			

125:10 147:6	grossly 97:13 115:6	handing 79:8	165:22 196:7 197:14 209:1
good 4:2 11:8,9 17:24 26:11 27:14,15 37:1 45:15 57:19 63:14 64:15,18 70:5,6 86:9 87:15,16 90:16,17 104:9,15 105:4 119:21 122:7 128:14 129:2 135:14 141:16 144:21 145:13,14 151:2, 15,16 154:18,19 171:3 174:16 175:3 180:20 184:14 185:5,6 189:18 194:4,5 199:16,17,18 211:2,13 212:11	group 97:10 212:13	handled 8:4	hearing 4:3,9,16, 20 12:25 13:22 39:6 52:23 62:1 72:9 78:2,7,8,25 86:5 89:19 115:8 137:15 138:1 143:11,19 153:6 154:2 157:1,14 193:14 203:9 206:16,21 216:1, 10
gosh 127:23	groups 212:23	happen 33:19,20 60:5 73:10 74:13, 22 94:13 97:17 109:12,16 115:5, 14 173:13 184:17	heart 94:24
government 96:24 125:12	grown 132:6	happened 96:8 173:14 198:14	heartburn 208:9
granular 160:14 172:25	growth 18:5 19:1	happening 117:3, 4 118:11	heat 107:12,18 109:14 111:25 119:6,9 124:3,4,7, 10 126:5,10,22 133:3
granularity 180:9 181:9	guess 19:9 22:13 27:17 33:8 35:6 43:5 55:14 66:9 67:8 99:7 146:18 159:19 166:10 173:1 179:14 181:3,22 185:15 191:7 192:7 194:6 203:9 207:2	happy 101:15 136:20 138:11,17 139:9 140:25 144:9 164:17 174:1	heaters 106:21,23 119:11
graph 51:3	guidance 142:14 143:2	hard 56:19 116:10 139:19 142:1 161:10 176:12 199:2	Heating 127:24
graphics 190:5	guys 118:3 142:3	hard-coded 161:19 175:7 176:3,18 190:17 191:14	heavy 93:25 212:21
Graser 130:16 132:24 133:5 134:8 144:15,22, 24 145:13 146:3, 21,23 147:1 155:17,19	gymnastics 213:12	Hari 136:19 138:9, 16 154:8,10,22	heavy-handed 125:12
great 81:18 106:16 114:12 128:15 178:1,2	<hr/> H <hr/>	hate 78:1	held 177:2,3 200:9
greater 97:18	H-A-R-I 154:22	hazardous 122:4	helped 200:15
gross 115:10 130:20,23 164:3 170:24 202:2,9,21 203:4	Hahn 5:14 9:2,3,5 10:12 15:9,10,13 20:24 21:1 23:21, 23 24:2 36:17,18, 20 38:12,13 58:6, 8 59:11,12 70:2,4 72:7,8 114:2 135:15 141:17 210:23 211:1 215:5,7,8	he'll 31:12	helpful 19:13 20:2, 4 77:16 107:19 133:25
	Hahn's 28:1	head 27:2 106:18 127:1 128:6 145:25 146:10	helps 30:15 44:3 168:15 210:3
	half 206:7	headaches 184:15	Hernandez 31:23 39:7,9 43:6,9,13, 16,23 44:2,5,9,12, 17,19 45:18,20 46:3,5,6 51:8,11, 14,24,25 53:4,5 55:7 57:20 62:3 148:8 149:14
	hand 34:23 162:20 176:7 203:14	hear 27:8 62:16 97:20 145:18 210:4	
	handed 166:4,12	heard 21:10,13 22:8 73:1 101:6 112:12 115:8 129:23 132:3 135:16 159:14	
	handful 212:19,20		

150:17 153:25 156:23 158:11	72:19 84:8 159:8 185:2,4 188:16	163:5	imagine 160:15
hesitate 61:9	homes 103:13 121:22,23,24 122:1,4,14 126:10	HVACS 93:8 107:2 112:25 125:3 213:6	immediately 123:2
hesitation 213:1	honest 119:15,16	hyperbolic 95:1	impact 6:6 8:11 17:23 19:14 20:8, 19 29:1 55:3,13 56:2,20 60:23 61:20 72:1 82:18 93:18 102:6 106:2,25 117:25 119:12 123:13 131:3 136:5 140:20 160:3 173:3 201:20 206:11,14,18
Hey 116:5 119:4 192:4	honestly 85:14 198:12	hypothetical 50:4, 19	impacting 169:14
high 163:9 167:11 199:25	Honor 5:2 12:19 14:18 27:22 31:17 43:7 64:11 65:5 69:16 78:1 89:4,5, 14 105:1 128:23 144:18 146:19,22 148:3 158:7 193:22 194:21 199:13 215:21 216:9	hypotheticals 18:19	impacts 9:16 20:4 53:17 55:2,8,23 56:6,7,19 72:4 130:6,20 132:18 138:16 166:15 178:6
higher 7:9 8:24 51:17 54:22 69:12 70:20 98:21 137:22 163:19	hook 204:21	idea 17:24 19:11 122:22 132:15 171:3 203:19 209:5	imperative 166:13
highlight 132:23	hope 106:22 110:8 144:15 147:6	ideal 170:16 197:19,20	impetus 175:18
hired 185:17	hoping 9:11	ideally 73:22 170:15 171:8 184:11 197:2	implement 81:24 170:6,7 180:5
hiring 95:22	hot 113:19,22	identification 75:11	implementation 9:22 37:13 138:8 170:3
historic 65:25	hour 79:16,25 83:4 164:4 172:3, 8,22	identified 25:23 32:12 85:4,5 140:2 160:9 174:2,4 175:6 208:4	implemented 81:19 144:2
historical 93:21 97:15	hour-plus 62:9	identify 12:17 13:10 73:21,23 85:2 162:1	implementer's 206:12
historically 60:20 95:24 97:16 110:7 111:6,11 197:24 198:11 212:19 213:5	hours 79:24 81:23 82:11 160:18 170:19 174:9 208:13	identifying 66:19 85:9 139:1 172:9	implementers 168:11 196:24
history 33:18 59:6 88:23	hundreds 40:4 139:24 195:24	Illinois 132:9 145:18,22 146:4	implementing 88:18 134:5 135:18 170:11
hit 26:22 83:2,16 84:7,20 94:11 116:4 122:15 176:2	Housing 127:23	illustrated 35:20 48:15	implore 138:20 140:21 164:16
hitting 172:17	huge 205:1	illustration 35:11, 17 36:7 49:10 51:7	importance 66:17 81:9 140:16
hoarders 121:24	hundred 132:7 203:15	illustrative 211:25	
hold 69:13	hundreds 40:4 139:24 195:24		
holds 69:11	HVAC 96:25 107:18 112:17,24 113:10,16 124:20 125:1,3 136:17		
hole 110:2 122:16			
Holsman 20:9 131:10			
HOLTHAUS 4:18 11:24 12:2,4,19 13:14 64:22 69:25			

important 16:23 44:15 66:16 67:9 68:21 71:17 75:21 77:3 84:23 106:5 138:7 162:10 166:16,22 171:16 172:9 173:2,11,17 177:9 178:7,8 180:6,7 181:8 182:10 212:3	80:19 106:7 111:16 136:14 142:24	industrial 29:2 107:14	insights 171:12
importantly 83:1	including 8:14 35:16 36:5 42:25 43:1 59:24 66:11 74:9 106:1	industry 155:4 166:7	installations 167:23 168:12
improve 107:25 169:7	income-eligible 80:1 83:5 101:7 130:21,22,25 131:3,12,18	inefficiencies 142:17 204:14 209:11	installed 167:13
improvement 183:14	incorrect 4:6 171:24	Inflation 137:14	installing 160:13
improvements 134:17 173:22 183:24 206:5	incorrectly 208:18	inflation-wise 102:4	instances 88:15 188:9
incentive 75:25 76:8	increase 55:10 104:13 109:20,23 116:14 124:8 183:20	influence 137:20 196:10	instantaneous 207:18
incentives 83:11, 13 91:14 120:12 183:4 201:23 212:15	increasing 114:20	influx 116:22	insulate 6:5 117:23
incentivize 81:20	incredibly 94:12	inform 136:25 200:15	insulating 118:5 123:12
include 7:3,18 71:8 78:13 133:14 136:1 142:16,20 175:21 187:22	incremental 79:15,17,25 81:17	information 74:2 84:24 85:15 136:25 152:14 155:25 165:4 172:4 176:16 177:1 178:5,14,16 179:13 186:10 188:4,6,9 189:20 191:14,17,19 192:2,5 206:18	int 22:20
included 37:6 54:13 73:13 76:5, 21 80:14 93:18 95:24 108:18 133:21 137:19 139:17 143:25 159:24 160:11 162:25 167:19 171:5 176:17 177:6 185:9 187:25 189:24 190:5	incumbent 104:15 123:23	informed 109:7	integrated 6:21 22:21
includes 54:16 73:17 79:15,25	incur 75:24	infrastructure 178:20 179:10	intend 205:21
	Independence 138:25	initial 154:22 175:4,17 186:17 187:24 190:9 191:9 194:10	intended 42:7,8 57:9
	independent 137:16 138:24 143:9,15 180:23 181:16 185:18,19 186:1 197:2 199:19 200:2 205:13 206:4	initially 32:18 55:14 188:15	intends 136:25
	index 132:3,14	initiative 214:9	intensive 182:17, 21 183:13
	indication 172:15, 16 189:18	innovation 125:15	intent 74:25 207:9
	individual 142:21	input 129:13 205:22	intention 175:20
	individuals 142:18 203:3	inputs 143:12	interaction 136:22
		inside 39:25	interactions 76:20
			interactive 136:22 204:14
			interest 25:7
			interesting 101:14
			interlinked 185:16
			interrupt 77:10 78:2
			interruptible 88:23
			interviews 214:13

introduced 31:11	137:4 138:13,20	79:4 84:11,12,17	7,8,10,11,13,14,
invest 25:16	139:10 143:20	85:20,22 87:5,7	17 144:11,14,21
invested 25:1,25	163:4 165:3	89:21,22 90:12,15	145:2,6,8,9,10
investing 22:19	171:18 175:4	100:21,23 123:6,9	146:2,12,13,16,20
25:16	177:2,7,12 191:20	125:16,18 128:22	147:5,7,10,11,18,
investment 21:24	193:4 194:17	judge 4:2,15,18,23	23 148:1,4,5,6,9,
25:22 66:19 67:16	195:14,20 196:25	5:5,9,13,17,18,22	12,25 149:4,5,9,
68:7,11,20 74:7	202:12 203:1	8:25 10:14,17,22	11,13,14,15,16,
75:12,15,16 85:6,	204:19 208:4	11:2,4,19,22,24,	18,22 150:4,6,8,
8,9 91:9 93:4,7	209:11 211:11	25 12:2,3,9,16,23	11,14,16,17,18,
94:3,4,5 95:11	issued 186:20	13:4,7,9,21,24	21,22,23 151:2,9,
97:25 98:4,21	issues 104:18	14:16,21,25 15:3,	12 152:23 153:1,
99:10,21 100:1	136:12 142:15	6 21:2,4,5 23:20	5,10,12,15,18,21,
120:15,23 167:20	143:2,24,25 144:5	24:3,7,9,10,12	24,25 154:1,5,7,
178:4	162:19,22 171:1,5	25:12,18 26:5,7	13,15 156:13,16,
investment's 93:8	173:24 174:2	27:19,20 30:16,	19,21,22,24
investments 61:4	176:1 184:12,13	19,24 31:8,10,14,	157:4,8,14,19
98:5	191:14 198:5,10,	18,22,24 32:3	158:2,5,8,10,11,
investor-owned	13 203:16 208:19,	36:16 38:13,17	12,16,19,24
87:17 88:4	20 209:21	39:1,5 43:8,12,24	159:2,5,7,9
invite 134:15	items 105:22	44:1,3,5,8,14,16,	168:16,20 174:5,
involved 88:7	142:22	21,25 45:3,7,10,	16 177:17,20
120:5 186:5 200:6	J	15,21 46:2 51:8,	180:12,17 181:1
214:24		13,25 52:5,22	184:22,24,25
Iowa 118:6	January 16:4,5	53:1,3,5,7,8,22	185:2 188:19,21
iphone 134:18	29:23 176:11	58:4 59:12,15	193:8,9,12,20,24
IRA 93:16,17	Jennifer 129:3	60:11,15 61:22	194:1 195:7,12,15
97:19,20 100:18	JLR1 189:24	62:1,4,5,11,15,17,	199:7,8,10,11
115:9 137:17,18,	JLR2 191:24	21,24 63:2,9,11,	210:22 215:8,11,
20 138:1	JLR4 187:9 188:25	14 64:4,6,8,12,22	12,13,15,16,18,
IRP 6:16 7:3 8:11	189:25	65:2,4,9 67:21	19,22,24 216:10
10:19 12:10,14	job 208:10,19	69:17,20,23 70:1	judicial 12:10
13:11 32:8,13	211:13	72:8,14,16,18,20,	13:5,12,19
35:4 47:18 48:2	Johnson 5:7 11:4,	21 77:22 78:7,15,	jumbled 51:4
55:18,19 56:2,3,	7,17 15:2 24:8,12,	18,24 84:8,11,12,	June 28:18 30:10
12,15 57:2,8	4,5 31:9,10 43:21,	15 85:20,22 86:9	186:1 199:21
108:5	24 44:25 45:5,9,	87:5,9,12 89:6,9,	jurisdiction 197:3
irrelevant 202:9	25 53:7,10 58:2,4,	12,15,18,19,21,22	jurisdictions
issue 30:7 34:23	9 62:25 63:1,6,10	90:6,10 99:5	108:24
37:2 65:6 103:23	64:4,6 72:21,23	100:23,25 104:21,	justification
129:5 134:10	77:17,24 78:20	23,24 114:1	173:20 190:15
		117:16,17,21	justifications
		123:3,11 124:2	140:5
		125:18,20,21,23,	
		24 127:4 128:16,	
		17,22,24 135:5,8,	
		10,11,15 141:1,5,	

justified 140:14,18	kinds 7:8	latitude 81:18	likelihood 59:9
justify 104:3,4 193:1	knob 121:24 122:8	laundry 174:23	limited 36:23 126:12 139:25 142:10 160:4 166:1 173:23
Justin 137:2,12 149:21 150:1	knowing 180:3,7 181:8	lay 174:1	lines 51:3 168:4
<hr/>	knowledge 36:23, 25 55:20 57:15 152:16 156:2	lays 192:4	Linhares 62:5,6, 12 69:19 72:15 89:8,9 100:25 101:3 103:19 104:17,21 125:20 141:7 145:5 148:3 149:10 150:13 153:20 156:18 158:7 159:4 215:15
K	<hr/>	lead 105:16	links 140:12 160:9 161:25
Kansas 88:2	L	leading 170:7	lip 212:21
key 6:22 67:18 119:1	labeled 79:23	learn 206:7 207:7	list 70:13 142:15 143:24,25 147:3 171:4,5 174:23 184:13
Kiesling 137:23 138:4 147:9,11, 13,15,22	labor 182:17,21 183:13	learners 133:25	listed 81:5 98:20 99:19 133:18 142:15 143:19 144:5
kind 4:7 14:5 21:16,18 28:10 39:25 42:10 46:15 55:17 65:25 66:17,23 67:8,11, 18 68:5,13,15 69:13 71:13 72:6 73:14,17,18 74:1, 8 76:12 77:3,6 80:3 81:11 82:1 84:25 85:8,10 86:13,17 90:18 92:9 94:19 107:3 111:14 122:17 133:23 161:17,23 162:2,15,22 163:9,23 164:19 165:2,19 166:2, 15,23 167:11 170:11,23 173:2,5 174:2 175:16,19 177:1 178:6,13 179:5,8,15 180:5, 9 181:4,6,7,9 183:9 184:1,6,11, 18 185:15 187:25 188:6 189:21 190:8,10 192:4 194:6 205:25 212:21	Laclede 88:9	leaves 96:14	LIWAP 102:17 103:12 121:1,10, 19 127:15,18
	laid 66:16 83:23 183:24 204:7 209:13	led 21:18	load 7:9 8:2,3,15 9:16 10:7,8,10 28:3 32:25 34:8 35:12,13,15 40:18 41:6 42:8,18 46:10,22 49:3,5, 16,20,24 50:5,11, 21,22 51:17,22 54:22 55:3,10 61:4,10 88:23 90:25 105:14,21, 22 106:19,20,21 107:16,24 110:13,
	landlords 103:24	LEDS 196:14	
	landscape 79:11	left 7:23 58:9	
	Lange 79:8 86:2, 11,24 87:2,15 89:5,23 138:20 140:22	legal 25:4,7,9	
	Lange's 66:4	legislative 118:7	
	large 6:1 162:5 170:12 171:1,6 175:6 176:12 183:3 187:16 188:3	Lena 94:18	
	Large-load 6:10	letter 146:25	
	largely 111:9 126:24 139:23 176:14 192:11	level 23:14 46:20 56:1 61:11,16 117:4 163:9 167:11 170:1 179:7 181:9 199:25 209:8	
	lasted 33:23	levels 102:25	
	lastly 128:3 143:17	leverage 178:15	
	late 14:4 28:11 59:1 86:15 88:25	leveraging 178:5	
	Latin 197:16	Liberty 87:22	
		life 52:7 160:18	
		lifting 93:25 212:21	
		light 88:2 115:1 196:6 197:20 204:17	
		lighting 195:24 196:10 213:7	
		LIHEAP 121:6 127:22,25	

16,18 113:2,22 114:16,17,19 117:7 118:24 124:5,8,13,21 125:1	122:1 134:14 160:9,10,15,20 169:11 192:17 197:15,22,24 198:5 200:12 207:21 212:25 213:11	luxury 118:19	management 41:24 46:18 49:19 50:7
loads 42:15	low 137:19	<hr/> M <hr/>	manner 67:13 106:11 179:2 204:11
loan 37:20	low-income 101:22 102:12 103:9,10,21 104:1,8 121:1 127:17,23 140:20	machines 107:13	Mantle 94:18
location 160:21 161:1	lower 69:8 71:19 121:5,6 163:14	macro 100:14	manual 131:25 133:4 135:3 139:13
locked 214:21	lower-income 121:9	made 13:3 14:6 58:10 79:3 103:22 106:9 107:13 108:15 116:6 122:1 132:5 144:2 148:21 153:8 157:18 190:15 198:7 213:9	March 28:14,23 187:12 190:1
log 133:15	Lozano 14:9,10,13 15:9 24:16 25:14 26:11 31:2 73:2 112:13	magn 60:4	March-ish 28:13
logic 91:12 94:22	Lozano's 14:19	magnitude 56:24 60:3,6 75:5 104:5 175:24	margin 7:12
logistics 18:16	LTE 120:18 128:3, 5,9,11	main 16:13 34:13 35:1,11,15 141:24,25	marginal 164:14
logs 165:18,25	Luebbert 36:24 38:10 63:4,7,15 64:1,15 67:24 69:2,15 70:5 72:25 77:12 79:5 81:3 85:23 100:12 136:4,10 140:6,15 148:23 158:14,15, 16,18,21 168:21 174:5,17 180:12, 20 185:5,7 188:17,24 192:7 193:7,10,11 203:17 209:2 214:17	maintain 129:16	Mark 137:23 138:4 147:15
long 8:13 59:4,19 78:22 83:2,10 139:24 145:19 161:14 162:16 177:3,13	Luebbert's 7:22 63:23 197:22	make 14:6 29:17 34:2 38:18 40:7 53:23 57:19,20 62:20 70:25 72:5 78:4 91:8,9 99:18 124:9 125:8 127:12 128:20 129:7,14 130:18 133:5 152:6 155:13,22 181:23 183:16 199:4 203:22 205:2 207:9 211:2 213:14	Marke 44:11 66:5 67:11 69:7 89:23 90:1,3,16 95:4 101:4 105:4 117:22 120:25 123:3,10 127:5 128:3,16 136:7,10 142:23 143:20 144:8 155:17,19 167:25 193:13,14, 17 194:4 195:10, 17 198:20 199:6, 16 215:25
long-term 175:23	lunch 63:18,23 85:25 86:4	makes 33:9 43:2 213:14	Marke's 38:2 66:13 67:25 69:3 142:9
longer 50:10 51:12 74:24 85:14 139:21 162:1		making 7:3 71:5 99:8,13 105:23 116:18 120:5 178:22	marked 12:6,7 43:7
longevity 72:3			market 101:8 106:10 109:7 116:1,8,9 125:5, 15 172:6 196:8, 12,21
looked 17:1 20:10 82:15 131:1 165:17 172:19 173:21 178:12 180:4			marketing 206:13
losing 115:21 116:5			
loss 51:6			
lost 102:21 114:23 115:15,18 164:12			
lot 6:9 21:22 55:22 57:13 90:18,23 94:15 104:18 106:22 109:5 113:4 114:16,17 115:4 121:14			

massive 183:1 192:24 196:10 201:16	measurements 84:19	meet 7:4,19 8:14 9:8 22:24 40:18, 22,23 41:6,7,10, 14 42:4,5,7,8,17, 18 46:13 47:3,25 48:23 49:5,7,19, 23 50:10,12,15, 17,21 92:12	185:8 186:16,17, 18
master 116:17	measures 74:19, 20 81:16,20 83:1 85:9 106:17,19 107:7 119:6 120:14 132:12 133:18,20 134:6 136:23 139:5 160:22,25 161:9 167:12,23 168:12 169:21,23 170:5 213:4,5	meeting 21:12,15 47:15,22 48:5 108:4	mentions 202:1
match 9:20 80:9	mechanism 87:20 115:15 167:10 193:4	megawatt 8:18 24:18 30:20 33:5 34:8,11 35:4,16 38:19 40:25 41:9 42:6,14,17 46:14 47:3 49:20 50:15, 22,23 52:7,14 57:14 58:13 59:24 61:2 71:8 79:16, 17,23,25 81:22 82:11,12 83:3,4 164:3,4 170:19 172:8 173:14,16	menu 204:9
matches 80:11,12 191:8,9	mechanisms 66:3 76:20 102:16 116:13	megawatts 7:8,10, 11,14 8:2,3,10 9:25 10:5,6,9 20:16,17 29:3,22 32:20,22 33:16, 17,21 34:4,8,9 35:23 36:2 37:7 41:16 42:24 43:4 46:11,22 49:3,5,8, 15 50:5,12 75:7 77:9 80:18 82:11, 14,16	messed 121:25
matching 55:17	MEEIA 6:6 8:12 19:20 25:1,25 37:14,19 40:1,5 53:13 55:17,23 56:11,14 57:3,7 59:20 60:17 66:1 67:4 68:2,14 70:21 83:9 85:16 88:13,18 91:25 92:5 102:11 104:14 114:12,22, 24 115:19 116:22 117:24 118:19,23 120:15 121:20 123:12 129:8,11, 15,19 131:2 136:11 137:1,18 139:2 140:10 142:12 143:3 195:22 199:21 201:1,4,5 202:16 208:3,21 210:14	mentioned 9:7 17:11 29:7 81:10 127:15,21 141:25 160:4 161:13 174:23 176:5 180:21 182:13	met 47:17 214:11
material 22:9 102:5	MEEIA'S 178:19		method 102:20 124:1 214:7
materialize 117:9 206:15	MEEIAS 121:21 213:15		methodology 181:17
matrix 24:17,22			metric 79:19,22 80:10,16 82:15 92:5
Matt 4:12 12:20,22			metrics 74:6 75:1 76:5 77:7 79:20
matter 60:24 84:5 120:10 143:11,12 152:2 161:5 172:18 202:8			MGE 88:9
matters 74:11 81:4 86:13 92:6,7 120:9 161:5 173:16 179:23			Michels 4:5,8,9, 12,15,19,22 5:23 8:25 10:14 11:10 12:1,5,21,22 14:8 16:8 22:8 32:19, 22 33:8 35:7,19, 23
max 80:4,11,22,25			Michels' 32:15
maximum 82:5			mid 37:18
meaningfully 67:2 70:22 85:17 118:23			mid-month 167:15
means 70:15 214:19			middle 63:21 154:22 174:7
measure 71:10 112:2 113:17 132:17 135:23 142:22 160:1,13 161:8 188:10			Midwest 160:24
measured 109:3 170:15 179:1,19			million 38:2,6 53:20 92:23 93:2, 6,7,24 94:2 95:5, 7,14,15,18 96:9, 15 97:21,22 98:1 99:22 204:21 205:5 211:25
measurement 93:12 141:19 177:24 182:20			mind 21:23 22:11 44:5 71:24 83:8 135:25 159:20 171:16 196:12

minds 115:2 215:2	16 153:19,24	moment 42:9	146:23,24 147:3
mini 21:10 128:20	155:2,18 156:17, 22 158:6,10	50:13 58:11 67:21	152:25 157:7
minimal 189:18	159:2,7 184:23	89:4 111:24	178:8,19 204:2,6, 10,11 213:13
minimize 138:3	185:1 186:2 189:9	119:11 125:20	214:20
170:8,12 184:16	196:5 199:9,12,20	146:2 208:12,14	
209:19	204:2 214:11	215:11	moved 95:13
minimized 201:19	215:14,20	Monday 71:18	movement 114:14
minute 94:20	Missouri's 4:25	money 68:8 91:8	moving 99:21
187:6 189:17,22	48:2 49:15 50:14	102:25 103:4	118:16 125:3
minutes 43:22,25	60:25 103:9 121:7	104:16 116:19	142:5 144:4
45:4,6,8 63:7,12	129:6 185:19	121:21 122:6	MRIS 107:15
MIS 70:9	Mitchell 5:16 21:4, 8 23:18,20 24:25	125:13 197:4,6	multi-family
mismatch 7:24	25:15 44:14,20	201:23 207:21,25	103:22 130:21
29:7	59:14,17 60:10,11	208:1 212:15	multi-year 16:22
MISO 16:18,24	89:17 159:10,13	monopolies	17:22
18:7,13 28:2	168:14,16 174:18, 20,22 177:16	115:24 116:25	multiple 136:12
29:17,25 30:2,21	185:8,11 186:9	month 112:7	176:8 181:18
36:21 48:12 70:9	188:7	113:3 167:13	182:2 188:10
71:15 112:6,9	Mitchell's 44:17	months 59:8,9	190:7
172:4	mitigate 183:9	176:7	multiply 160:2
MISO's 16:25	184:18	Moore 14:18 25:2	164:14
missed 19:17 37:9	mix 85:10	27:22,24 30:14,16	multiplying
128:25	mixed 214:7	78:1,12,15,17	167:13,15,17
missing 90:24	mixes 90:23	89:14 105:1,3	
173:22	mixing 55:17	113:24 124:18	N
Missouri 5:1 10:25	mode 123:22	126:1,4 127:2	named 79:13
31:22 39:6 40:15	model 6:15 35:4,9	128:23 129:2,3	natural 63:20,22
47:17 48:1,22	modeled 10:18	135:5,7 144:17	115:24 116:7
50:16,25 51:16, 17,18 53:3 54:14	36:3 57:8 60:19, 23 61:8,19 109:6	145:15 146:19,22	119:10 124:10,12
61:2 62:2,6 69:18, 24 72:14,18 78:8	modeling 109:4,5	147:6 194:21,23	126:10,13 127:25
89:7,13 93:13,23	modifications	199:13,15 210:20, 22 215:21 216:9	naturally 93:14
94:1 100:24	148:20 168:24	morning 4:2 5:3	94:15 97:17
101:17,22 103:8, 17 104:25 108:23	modify 139:12	11:8,9 26:11,12	114:20 115:5,13
109:6 111:10	204:3 207:1	45:15 52:8 63:14	naturally-
119:9 125:19,25	210:18	216:2,11	occurring 97:3
129:1,4 137:8	mold 121:23	motivate 212:16	114:21
141:6 144:16		move 12:5,10	nature 132:11
145:4 148:2,7		71:14 73:25 78:3	182:20
149:9,13 150:12,		80:8,24 81:1	near-term 18:11
		85:17 103:5	
		105:24 142:9,12	
		143:6,14,15	

necess 110:5	nonparticipants 76:18	numbers 20:9 27:17 28:12 51:4 81:15 97:16 104:12 115:5 157:9 166:6 175:7 190:17 191:18 211:23	14,15
necessarily 19:19, 20 63:20 110:7 209:10	normal 7:9,17,20, 24 8:2 35:21,22 40:18,24 41:6,13, 18 42:4,7,14,17, 24 46:10,22 49:3, 5,16,20,24 50:5, 11,21	numerous 61:18 191:17	occurs 85:8 167:16 173:17
needed 8:24 9:8 35:14 37:16 41:20 129:23 173:19 175:22 179:1 190:10	Northeast 160:24	nutshell 141:21	October 133:14 134:4
negates 107:3	notable 102:17		offer 22:20 73:1 78:9,12 133:19
negotiated 137:19	notably 70:20	O	offered 12:24 66:2 82:19 153:6
negotiations 195:2	note 138:7 140:19	oath 4:16 14:11 31:9 63:24 86:25 90:1 144:22 147:19 149:23 193:15	offering 9:14 78:16
Neil 144:24 147:1 155:17,19	notes 15:14 37:5	object 25:2 194:23	offers 121:8
Nest 19:18	Noth 172:19	objected 64:25	office 106:3 117:22 121:15 194:16 200:20 205:3
net 79:15,17 115:9 130:6,19,20,23 138:13,15,19 139:1 164:3,14,23 167:5,18 170:24 202:2,8,21 203:3 216:3	notice 12:10 13:6, 12,19 58:17,19, 20,21,24 62:13	objection 13:18 25:19 64:22 78:20 84:8	offset 123:15
net-to-gross 115:12 137:19 202:3 203:4,6	NRDC 5:1 10:25 14:23 15:22 24:5 31:15 39:5 53:1 62:1 69:21 72:16 89:10 104:22 125:22 141:9 145:7 148:4 149:11 150:14 153:22 156:20 158:8 159:5 184:23 199:9 200:21 215:17	objections 12:25 13:6 64:23 65:2 78:19,24,25 153:6 157:14 195:6	omission 136:14
nets 130:24	NRDC's 9:10	objectivity 143:12	one's 212:7,8
network 120:18 128:11	NTD 140:21	observation 106:9	one-year 16:15 189:22 194:19 198:3,18 201:6,19 203:20 212:24
networks 128:9	NTG 196:16	observe 137:6,8	ongoing 177:7
nice 120:11 206:12 208:14	number 32:17 77:9,23 79:22 80:16 152:8 161:5,10,19 167:12 176:19 178:14 187:16 190:22 191:8,10 214:25	observed 137:10	online 54:11 59:25 114:16 131:19
niche 212:12		obsolete 196:13, 14	onset 72:2
Nobody's 102:4		obvious 118:25 119:3	opaque 139:17
nods 4:7		occur 75:3 81:16 82:10 93:14 94:16 163:20 170:23 173:9,18 207:24	OPC 5:11 13:16 21:11 44:9 61:14 65:6 66:6 94:18 136:7 142:2,4,13 143:7 144:2 146:14 183:18 195:1 201:1
nondemand 82:14		occurred 66:1 139:4,8 170:13,	open 25:10 57:15, 24 98:11 129:22
nonenergy 131:1, 11			opening 135:8 141:5,8,11,24 142:1 145:16
nonnatural 116:25			

openings 21:10

128:20

operate 16:8

160:23,25

operates 206:10**operational** 91:11,

17 92:15,19 93:20

95:25 96:12 97:11

142:17 204:14

209:11

opinion 38:21

45:1 53:13 83:25

91:13 98:16

100:19 101:6

159:17

opportune 85:24**opportunities**

10:3 21:24 25:22

37:10

opportunity 4:5

5:25 22:1,4 24:17

34:24,25 62:9

64:19 65:15,20,24

66:7,12,14,18,21,

25 67:2,13 68:22,

23,25 74:14,16,25

75:18,22 76:2,5,

22 77:5 79:12,13,

21 81:6,10 82:6

83:12,14 84:13

86:12,21 87:19

90:19,21 92:10

94:21 95:7 99:14

102:23 104:5

105:9 123:14

130:8,11 164:6,25

201:21,22,25

204:22 205:16,22

206:17 208:13

211:18

opposed 181:17

207:14

opposing 177:11**opt** 104:10,11

112:21 118:13,19

124:17

optimal 137:11**opting** 118:9**option** 118:9

124:1 128:1 143:7

options 17:7

23:15 102:14

123:23,25 204:9

oranges 56:9**order** 31:19 75:8

76:5 77:3 142:10

169:7 175:22

ordered 58:1**orders** 104:5**organized** 77:1

132:16

original 162:21**originally** 133:7**origins** 165:9**outcome** 71:23

74:6,7 161:23

177:14

outcomes 137:9**outdated** 140:4**outline** 131:6,11

134:21

outlined 66:3**outlines** 131:13**outsider** 213:2**ov** 111:15**overblown** 172:15**overestimation**

171:25

overhead 92:20,

22 96:10 103:15

overlap 57:5**overpaid** 208:17**overrule** 25:18

65:10 84:16

195:16

overruled 65:2**overs** 121:22,23**overseeing**

143:14

oversight 138:25

143:10 181:6

205:15 207:18

overstated 115:6

163:21 165:4

214:18

owes 200:17

P

P-O-U-D-E-L

154:23

P-O-Z-O 151:20**p.m.** 86:22 216:13**P1** 80:4,21**P2** 80:10,25**pa** 132:7**pace** 86:16 216:6**page-specific**

140:13 162:6

pages 44:14

132:2,8,11 139:24

145:19 161:14

195:24

paid 120:16,17**panic** 117:5**papers** 51:4 175:7

187:25 190:3,8,

11,16 191:1,21

paragraph 189:4,8**pared** 186:25

192:10

part 13:3 17:21

22:23 33:6,14,25

39:20 49:21 50:1,

20,21,24 54:11

57:23 79:3 92:6

96:4 108:11

129:11 131:22,23

153:9 157:18

175:18 178:9

186:6 190:6,20

192:19 196:25

197:21 198:1

206:22 212:8

participate 74:10

83:19 85:19

131:17 183:4

participated

112:24 179:7

participating 67:5

212:24

participation 67:7

179:7

parties 52:19

61:13 142:14

178:25 179:4,14,

16 183:18,21

partners 9:23**parts** 13:11**party** 137:5,7

171:11 200:24

201:2,4 205:23

pass 118:8

121:22,23

passed 102:10**past** 14:7 42:10

62:8 71:12 116:21

134:13 198:6

211:20

pay 80:11 94:10 102:21,22,23 120:12 123:12	perform 23:8 84:5 185:18	place 23:6 102:9, 16 103:16,23 109:25 139:7 171:8 175:9 179:10 206:24,25 213:5	37:16,17 38:3,19, 22 39:11,17,19 42:14 52:7,15 53:14,17 54:11 59:5 61:2 123:16
paying 6:5 25:6 38:23 103:14 117:24 121:10 131:20 178:3,21	performance 27:8 77:7 79:19,20	performed 139:25	plants 34:19,21 40:2 54:6,13,16
PDF 133:4 187:21	performing 214:5	places 161:20	play 18:19 49:11 50:19 60:4 92:9 169:19
peak 7:7,9 8:24 9:8,25 35:12 46:10,22 49:3,16, 24 50:4,11 54:17 60:17 71:13 105:22 106:19 107:24 112:3 113:2,22 120:24 124:9	period 29:24 68:18 71:11,14 74:23,24 75:7 112:14 160:5 172:21 173:10,18 177:13	placing 168:9	plural 122:21
peak-time 16:1 113:11	periods 71:17 172:9,17	plan 6:6,7 7:10 16:22 17:22 18:1, 10 19:1,22,25 22:19,21,23 23:2 25:24 32:14 34:5 37:8 38:1 39:15 46:8,12,19,25 48:13,15,21 49:19,22 50:2,8, 20,21 55:18 56:16 63:22 70:21 82:20,24 84:14 108:5,11,15 117:24,25 123:14 129:6,8,9,11,15 130:2,4,6,13 131:12 132:10 134:15 135:21 136:1,14 169:9,18 170:4 171:8,13 180:5 184:4,10 186:2 203:24 210:18 216:2	point 70:24 83:21 85:1 95:20 100:7 104:3 109:13 114:10 115:11 116:24 119:5,14, 20 120:3 122:15, 17 124:8 161:10 169:8 170:7 176:2 177:4 178:1 182:8 194:25 202:11 204:20 206:20 208:11
peaking 119:3	person 148:13	planned 8:18 134:21 184:11	pointed 94:21 137:15 163:2
peaks 112:10	perspective 21:17 22:6 30:5 66:21 90:20 100:14 120:22 165:12 169:16 175:18 181:24 182:8 198:16 211:9	planning 6:21 7:2 85:6 131:23 164:8 169:16 181:10	poorly 122:1
penalized 212:15	Ph.d. 213:20 214:8	plans 6:16 10:19 32:16 34:17,18 35:5 55:10 130:4 169:12	pop 182:25
people 86:18 94:14 97:19 100:16 103:5,13 119:8 131:6 174:9 197:4 207:25	philosophical 25:9	plant 6:16 8:10,18, 21 9:7 10:18,19 30:20 33:5,24 34:11 35:4 36:11	popular 119:16
percent 7:12 91:21 92:22 93:4, 6,21 94:3,10,12 95:8,13 96:6,7,15 97:8,11,12,14,17 98:3,10,14,21 99:2,25 115:13 121:3,4 126:21 137:22 168:3,4 196:5 203:15	phrase 27:3		populations 101:7
percentage 96:15 131:16	pick 58:9		portfolio 9:20,24 60:17 80:7,13 81:4 82:1 101:17
perception 33:9	picked 92:12		portfolios 23:17 201:9
perfect 116:3	picks 86:16 165:5		portion 23:25 124:21 134:9 138:1 148:19 168:22 216:1
	picture 20:20,22 59:18 70:18		position 9:10,18 11:12,15 21:14 33:4 36:6 48:10, 12 54:14 55:16,20
	piece 75:4 160:21		
	pieces 74:2 189:20		
	pilot 106:23 119:12		
	pivot 81:18 82:3		
	pizza 116:9		

56:3,21 57:25 59:19 64:18 65:6, 14,21,23 71:16 102:13 108:1,10 118:3 136:7 148:15 171:6 positions 6:22 7:16 positively 20:19 possibilities 71:24 142:4 possibility 176:25 possibly 173:11 post 178:13 potential 27:10,11 33:18 34:8 37:15 71:2 104:4 109:7 111:3 137:1 181:5 204:21 209:12 potentially 15:17 18:25 37:3,14,16 76:12 114:24 Poudel 136:19 138:9,16 139:9 154:5,8,10,18,23, 24 155:6,7,24 156:8,9,11 157:1 164:15 poverty 121:3 power 88:2 102:6 119:4 Pozo 138:4 151:3, 6,15,21,25 152:1, 12,22 153:3,13 Pozo's 152:23 PRA 172:6 practical 103:11 pre 178:12 precise 138:14	predated 200:15 predicated 207:13 preface 34:3 prefer 203:6 preferable 178:24 preferred 22:20,23 23:2 46:8,19 48:13,15,21 49:19,22 50:1,8, 20 55:18 56:15 102:20 108:11,15 prefiled 32:11 premarked 152:3 155:9 premise 69:10 premised 81:14 prepare 185:25 presence 138:8 present 105:5 145:15 206:21 presentation 48:3 presented 56:3,10 57:1 61:19 presumptively 71:12 pretty 17:24 169:2,10,13 189:17 prevent 138:3 preventing 126:15 previous 61:6 198:4 208:21 210:14 previously 4:11 14:12 31:4 32:19 63:25 87:1 90:2 136:18 144:23 147:14 149:25 157:23 158:20	193:16 price 119:10 120:9 172:6 prices 70:19 pricing 119:17 120:8,9 Pridgin 4:2,15,23 5:5,9,13,18,22 8:25 10:14,17,22 11:2,19,22,25 12:3,16,23 13:4,9, 21,24 14:16,21,25 15:3,6 21:2,5 23:20 24:3,7,10 25:12,18 26:5 27:20 30:16,19,24 31:8,14,18,22,24 32:3 36:16 38:13, 17 39:1,5 43:8,12 44:1,3,8,16,21 45:3,7,10,15,21 46:2 51:8,13,25 52:5,22 53:1,3,5,8 58:4 59:12 60:11, 15 61:22 62:1,4, 11,17,21,24 63:2, 9,11,14 64:4,8,12 65:4,9 69:17,20, 23 70:1 72:8,14, 16,18,20 77:22 78:7,15,18,24 84:11,15 85:22 86:9 87:5,9 89:6, 9,12,15,19,22 90:6,10 100:23 104:21,24 114:1 117:17,21 123:3, 11 125:18,21,24 127:4 128:17,24 135:5,8,11,15 141:1,5,8,11,14, 17 144:11,14,21 145:2,6,9 146:13, 16,20 147:5,7,11, 18,23 148:1,4,6,9, 12,25 149:5,9,11,	13,15,18,22 150:4,8,11,14,16, 18,21,23 151:2,9 153:1,5,10,15,18, 21,24 154:1,5,13 156:13,16,19,22, 24 157:8,14,19 158:2,5,8,10,12, 19,24 159:2,5,7,9 168:16,20 174:5, 16 177:17,20 180:12 184:22,25 188:19 193:9,12, 20,24 195:7,12,15 199:8,11 210:22 215:8,13,16,19, 22,24 216:10 Pridgin's 181:1 primary 128:12 136:23 167:8 principal-agent 97:13 137:4 204:13 Pringle 135:10,11, 13,14 141:1,2,4 145:10,12 146:11, 13 147:10,21 149:3,16,21 150:6,22,24 151:4,10,12,14 152:22 153:3,12 154:7,14,15,17 156:8,13 157:4, 10,21 158:2,15,19 161:13 188:21,23 193:7,9 194:1,3 195:8,9,13 198:19 199:6,8 215:11,13 Pringle's 194:18 print 43:19 prior 37:4 85:3 88:17 114:18 134:22 138:8 140:11 157:6
---	---	---	---

162:3 166:21 170:3 181:4 189:9 191:2,25 private 106:10 120:18 privileged 195:2 pro-energy 97:10 problem 85:3,4 100:7 102:7 104:2 121:19 137:4 147:5 206:13 207:11 214:16 problem-solving 123:21 problematic 161:22 162:2 165:7 198:5 problems 162:24 procedurally 201:14 proceedings 4:1 138:14 152:24 155:8 158:17 process 28:2 32:9 59:5 81:12 107:11 129:12,14,16,23 130:9,15 133:7 134:12 139:2,7 141:20 142:8 143:21 144:1,3 164:17,20 169:7 180:22 182:17 183:20 184:3,7 185:20 186:6 194:14 201:13,18 202:24 203:2 204:15 205:8,17, 24 206:11,18,22, 24 207:2,12 209:7 214:24 produced 213:6 product 94:17	166:12 products 101:23 102:8 137:17,18 190:23 professional 91:13 98:16 100:19 207:22 profile 21:17 profit 76:3,23 program 19:21 26:14,18,23 29:10 39:14 41:25 51:16 59:20 71:23,25 74:1 83:23 84:19 88:17,25 91:15 92:20 95:5,15 99:22 100:15 101:22 102:23 103:7,11,15 104:7,11 109:12, 16 111:1 112:24 113:11 118:8,17 121:2 123:19 124:19,25 125:2, 11 126:6,7 127:15,18,22,24 130:3 134:22 135:2,19,24 139:6 142:10 164:1,6 168:2 169:13,20 186:2 192:1 197:5 199:20 200:1 202:16 203:21 207:25 213:10,21, 24 214:5 program's 126:12 programming 96:9 programs 9:9,14, 16 10:8 15:20 17:7 18:20,23 19:6,7,8,10,14,17 20:12 23:5,24 27:6 28:1,19	29:16 42:16 51:18 80:1,2,20 81:5,15, 19 82:1,7,25 83:24 84:1,5,21 85:1,10,17 87:18 88:21 91:13 93:9 95:19 102:1 103:9,21,22,25 104:1 105:13,20, 25 106:4,15,23 108:10,18 109:19, 23 110:6 111:8,9 112:20 114:9 118:15,22 119:2 121:17 124:15 126:16 130:22 131:1,4,18 136:16 138:9 140:20 142:12 143:3 144:2 169:10,14, 17 170:5 182:15, 23 194:22 196:6 199:3 202:4 204:25 206:14,17 207:1 212:1,3,6,7, 9,17,19,20 213:18 214:20 prohibits 208:23 project 92:21 119:8 projected 68:18 79:16,18 109:24 projections 54:25 55:12 promise 126:2 promoting 103:20 115:1 126:16 pronouncing 144:15 149:20 proper 148:13 property 25:5 proposal 66:6,13 67:19,25 69:3,6	98:3 121:8 206:2 propose 39:16 proposed 39:11 46:13 47:3 60:16 61:3 68:13 69:8 118:23 129:6,15 135:21 136:1,13 148:20 165:15 167:6 168:23 182:16 proposes 71:7 proposing 41:23 69:11 91:23 103:10 129:12 204:12 208:23 211:19 pros 198:7 prospective 136:2,6 143:18,21 167:2,21 168:5 213:25 214:16,21 prospectively 134:9 protection 205:9, 11 prove 100:8 provide 17:8,9 122:25 134:23 138:2 140:4 142:13 171:11 175:13 176:16 187:18 190:3,14, 21 191:3,17,22 192:3 205:22 provided 43:20 55:22 56:10 81:12,13 134:14 161:15 187:14 189:21 207:19 providing 139:15 161:24 166:2 182:6
--	--	---	---

proving 196:23
proxy 90:24 91:7
 115:25 116:8
prudent 88:15
PSC's 197:3
Public 5:9 11:20
 15:3 26:6 31:19,
 20 39:3 52:24
 61:24 64:9 72:12
 87:10 117:22
 121:16 141:12
 147:24 149:2,7
 150:9 151:23
 153:16 155:2
 156:14 158:3,24
 180:15 194:16
 200:20
publicly 172:4
pull 194:17
pulled 176:19
pump 124:4,10
pumps 107:18
 109:14 112:1
 119:9 124:3,7
 126:6
pumps,if 119:6
purchase 102:13
purchased 113:9
 183:5,6
purchasing 102:6
pure 116:16
purely 202:10
purposes 37:19
 57:24 77:19 78:23
 103:11
pursue 137:11
push 96:25
pushing 137:11

put 23:5 27:15
 29:22 30:5,21
 39:18 57:17 66:6
 69:4 91:5 93:19
 94:22 95:1 136:19
 138:10,16 194:8
 205:4 213:5,6

puts 212:17
putting 52:14
 66:10 68:7,8 91:4
 94:7,9 120:18
 128:11

Q

qualitative 214:8
quant 214:7
quantified 74:14
quantify 68:22
 73:15 74:3 170:22
quantifying 73:12
quarter 80:24
question 6:3
 11:10 13:8 25:3,9,
 10 27:9,12 28:1
 30:17 31:1 36:10
 41:5 42:21,23
 44:18 47:25 49:1,
 9 51:6 54:10 55:9
 61:11 64:24 65:7,
 8 67:23 84:18
 98:23 99:17
 101:14,19,20
 103:7 110:9
 111:13 114:12
 122:23 136:4
 162:21 169:1
 175:3 178:2 181:1
 183:17,23 185:23
 190:2 195:10
 209:13 214:15
 215:7
questioned 61:14

questioning 45:18
questions 5:3,14,
 15,19,21 8:5 9:1,4
 10:15,16,23,24
 11:1 12:5 14:24
 15:1,7,8,10,12
 21:3,7 23:21,22
 24:4,5,16 25:11
 27:25 30:15,18,25
 31:25 32:2,5,6
 36:17,19 38:14,16
 39:3,5 51:10,12
 52:1,2,4,23,24
 56:1 58:5,7 59:13,
 16 60:12,14
 61:23,24 62:7
 70:1,3,11 72:9,11
 73:3 84:10 89:16
 104:19,20,25
 105:5,19 113:25
 114:2,3,5 117:18,
 20 123:4 124:16
 126:2 127:3
 132:25 134:11,16
 135:4,6 136:9,21
 137:3,13,24
 138:5,18 139:10
 140:16,22,25
 141:2 144:8,9,12
 146:12,17,18
 148:9,11 149:1,2,
 6 150:18 152:18
 154:1 156:4,23,25
 158:12 159:10,12
 161:22 168:17,19
 173:25 174:6,19,
 21 177:18,19
 180:13,14,15
 188:16 193:8
 199:7 206:1
 210:21,23,25
 211:6 215:9,10,12
quick 24:16 63:6
 162:20 169:2
 171:18

quickly 175:12
quo 87:21
quote 115:8 169:9
 188:1 189:11

R

RA 48:12
rabbit 110:2
raise 207:3 208:20
 209:21,22
raised 175:4
 208:20
raising 177:2
RAP 9:20,24 46:20
rate 25:6 38:22
 92:7 95:25 104:13
 110:3 111:16
 121:20 123:15
 151:24 155:3
 164:15 179:6
ratepayer 67:15
 68:14,15 69:1,14
 73:6,9 75:14,23
 76:1,15 81:9
 83:13,17 94:8
 99:9 100:1 168:10
 192:24
ratepayers 67:3,6
 71:3 73:4 74:9
 75:1 83:10 85:18
 94:9 137:6,8,10
 164:23 173:8
 193:3 204:21
 208:17
ratepayers' 98:5
rates 53:18 75:16
 88:20 119:24
 127:19 138:12
 142:20 178:4
rating 163:14

ratio 115:12 137:19,22 202:3 203:4,6	171:13 182:19 188:8 197:8 207:16 215:2	recognize 214:16	123:4,5 125:19, 22,24 149:2,6 180:14 215:9,14
rationale 195:5 198:16 212:9	reasonableness 188:12	recognizes 209:4	RECROSS- EXAMINATION 24:14 26:9 39:8 123:8 126:3 180:18 185:3
rationalize 202:14	reasoning 190:6	recommend 65:19 110:25 177:22,23 203:19 204:12 209:4	redirect 11:20,22 27:21,23 30:25 52:3 53:6,9 62:4, 6,25 72:20,22,24 89:20 127:6,9 146:18 149:15,16 188:20,22 215:22
read 45:5 189:2,12 202:6	reasons 16:21,22 20:3 61:18 66:16 68:5 110:16 128:12 134:25 161:6 166:14 194:13	recommendation 57:17 69:5 205:12 209:4	redo 122:10
readdress 13:22	rebate 96:23,25 102:5,9	recommendations 97:5,7 197:1	reduce 99:22 105:14,21,23 107:12,16,24,25 113:2 118:24 124:21 125:1
reading 131:10	rebates 19:18 91:14 112:25	recommended 81:18 210:3,13	reduced 129:17
reads 189:8	rebound 93:20 97:8 136:15,16 142:20 204:13 209:12,25 210:9	recommending 110:24,25 210:8	reducing 81:21,22 106:25 112:1,2 113:21 116:15 124:12
ready 4:17 14:17 15:11 21:6 24:10, 13 31:9 45:21 46:3 53:8 64:12 70:2 128:19 129:1 135:12 141:15 144:14 151:10 153:10 154:14 157:9 210:24	rebuttal 12:6,20 47:14 146:25 152:2 153:2,4 155:8 157:12 163:4 175:16 177:6 186:14 187:3,16	recommends 135:20 136:7 137:22 209:3	reduction 10:7,8, 10 74:22 124:9,22 131:14 137:14 173:17
real 119:13 120:2 122:7 172:2,5,11 173:19 178:24 195:21 206:8	recall 38:6 89:25 185:10 186:11	record 4:3 13:3 45:11,12,13,14,16 52:9 63:12,13,15 73:1 79:3 86:1,5, 7,8,10 101:16 127:14 135:13 151:18 152:25 153:9 154:21 156:10 157:7,18 174:14,15,17 182:11 216:8,12, 13	reductions 24:18 71:1,9 82:10,12 83:3,4 142:25 172:8,22 173:14
realistic 138:15	recalling 105:21 186:21	recorded 201:21	refer 78:5
realistically 106:12 163:20	receive 104:6 131:20 192:13	records 12:11 161:4	reference 161:12, 13 190:23 191:11
reality 36:1,7 106:14 122:14	recent 32:8 33:18 59:6 61:24 70:9, 16 112:9	recovering 115:18	referenced 191:5 211:5,6
realized 23:11,14	recently 16:3 87:22	recovery 65:25 66:3 67:1,13 68:9, 18,25 74:15 75:16 114:25 133:3	references 12:13 133:1 139:23 145:21 190:23
reason 12:12 16:14,21 75:21 118:18 128:12 162:9 166:16 179:22 189:10 192:20 195:2	receptive 122:21	recross 10:24 11:20 24:4 30:25 39:2 52:3,24 61:23 72:11	
reasonable 67:20 94:14 115:2 134:20 135:1 140:3,14,17 167:24 168:1,3,8	recess 174:13 216:11		

referencing 47:22 162:11 186:22	43:4 60:9 159:15, 18 162:23	186:1 190:5,25 191:5,24 197:13 211:8,12,16 212:5	residential 15:24 16:3 26:15 80:1, 19 112:17 119:25 126:21 130:3 212:1
referred 15:25 164:11	reliably 22:24	reporter 43:15 86:19	resource 6:9,21, 23 7:23 8:14 22:20,21,23 23:2 40:17,23 41:7,13 42:1,5,18 46:19 48:22 49:6,7 50:17 70:10 72:5 73:15,22,24 74:12,17 75:8 76:19 90:23 91:6 107:25 108:11 113:1 128:10 131:25 132:10,19 135:2 139:12 173:6,8,12
referring 35:10 54:24	reliant 71:9	reports 129:21 139:5 172:19 183:19 187:16 197:13 200:23 211:5	resources 6:12,25 7:4,19 11:12 46:12,24 50:13,14 105:10 112:16,18 173:6
refers 191:16	relied 139:2 171:22 190:24 191:19	represent 56:11	respect 88:19
refining 208:18	rely 59:23 110:12, 20 167:7 213:8	representing 135:14	respond 51:7 208:1
reflect 109:9,12 116:7 137:20	relying 165:24 171:20	represents 197:18	responded 62:18 189:25 190:1
reflected 9:17	remained 191:11	request 110:15 175:5 176:13 186:23 187:1,10, 20,24 189:9 190:3,12,14,20 191:9 192:11	responders 214:11
reflects 108:10	remaining 93:1	requested 165:15 188:15 192:14	responds 27:11
reframe 101:20	remember 105:12 178:10	requesting 192:22,23	response 10:2,4 15:17,19,21,24,25 16:2,3 17:2 18:20, 23 19:2,6,11,21 20:1,4,21 24:18 26:14,15,16 71:19 73:2 80:17,23 82:14,15,18 88:11,12,17,18,22 93:9 105:20,22 106:4,8,12,15
regard 107:19 186:10	remind 144:22	requests 63:8 142:13	
register 28:3 29:4	reminder 144:18	require 143:8,23 144:4	
registration 28:2	removals 56:23	required 61:1	
regressing 199:5	remove 190:11	requirement 22:7 102:10 111:16,20, 22	
regulation 91:8 116:16	removed 42:16 82:17 190:3,13 191:8	requirements 71:3	
regulators 115:25	removing 96:9	requires 143:21 144:1	
reject 139:12 142:6 204:5	renew 4:25 5:1 10:25 62:6 65:3 69:18 72:14 89:7 100:24 125:19 141:6 145:3 148:1 149:9 150:11 153:18 156:16 158:5 159:2 184:23 199:9 200:21 215:14	research 18:2 214:6	
rejected 139:14 148:16	repeal 6:3 65:12	researching 16:7 19:2	
rejecting 135:20	rephrase 6:4 40:20 101:15	reserve 7:12	
rejects 122:24	replacement 152:8,9 163:9		
related 8:15 72:24 124:14	report 131:7 182:5		
relates 64:23			
relationship 167:1			
relevance 25:3			
relevant 25:11 195:14			
reliability 20:5,8, 20,22 27:4 34:10 38:25 39:23 41:16			

108:15,16 109:2,9 110:6,11 111:1,9 119:2 122:25 175:2 186:15 187:10,11,19 189:5,8 207:6	152:9	risks 6:9 21:22	sampling 178:11
responses 57:21	returns 122:16	ROE 92:8 93:5	sanity 100:10 213:4
responsibility 195:5	revenue 22:7 111:15,19,22 115:15	ROES 98:10	Sarah 62:16 87:2 138:20 140:22
responsive 175:9	revenues 102:21 114:23 115:18,21 116:6,14 117:9 164:12	ROI 93:5 95:10 96:15 99:25	satisfied 45:25
RESRAM 116:23	reversed 81:11	roof 121:24 122:16	saturation 100:18 125:5
rest 135:19	review 43:25 44:4 45:17,23 81:14 134:24 140:1 161:7 181:10,21, 23 182:8,14,16 183:17,20,25 184:3 185:25 199:18	roofers 122:8	sausage-making 214:23
restrictions 138:2	reviewed 133:11	roughly 20:14 22:9 45:11 58:10, 25 86:22	save 125:13 140:21 197:20
result 6:1 26:19 67:14 96:23 98:18 104:14 115:22 116:17 129:22 166:24,25 172:12 198:2 212:23	reviewing 57:16 63:7 135:25 183:19	route 125:12 180:9	saved 82:11 164:13
resulting 69:1 76:15	revised 78:14	RTO 71:3	savers 120:1
results 18:5 28:17 70:14 82:24 98:20 109:7 136:1 170:11 171:20,22 172:5 206:21	revision 165:18,25 166:3	Rubenstein 5:2 11:1 14:24 24:6 31:16 53:2 62:15, 16,18,23 69:22 72:17 89:11 104:23 125:23 141:10 145:8 148:5 149:12 150:15 153:23 156:21 158:9 159:6 184:24 199:10 215:18	savings 9:24 16:1 19:15 20:5,6,7,12 21:15 23:11,14 26:19 61:12,16,17 74:16 75:2,6 79:16,17,25 81:17 107:1,5 109:8,10 113:11 131:24 133:12,15,18 134:8 135:3,23 137:18 138:14 139:7,13,16,18, 21,22 140:1,8,12 141:22 143:22 159:22,25 160:2, 13 161:6,24 163:13,19,21,23 164:4,5,9 165:1, 16 166:5 167:16 168:2 170:19,20 172:8 173:9 174:25 175:13 177:24,25 178:16 179:19 181:20 185:12 196:2 201:21 206:14 212:18 213:3,6 214:18
resume 216:2	reward 113:11	rules 97:2 129:9	
retire 117:12	rewarded 92:13	run 29:23 107:2	
retirements 6:11	rich 95:2 96:5	running 86:14 113:20 176:1	
retrospect 203:15	rider 88:21 93:18	runs 112:14	
retrospective 136:2,5,8,10 143:18,25 144:3 167:3 201:17 204:12	riders 196:17	rush 44:22	
return 68:9,10,20 91:10,21 92:4,24 93:2,4 94:2,4,5 97:24 98:3,7,21 99:9,20 100:1 111:14,17 120:21	ridership 93:21 97:15 130:5,24 137:25 138:3 170:6,8 183:2	S	
	riderships 130:7	safeguards 138:3	
	RIM 118:9,10	sake 98:13	
	risk 21:12,15,17, 20 22:10,13,15, 18,25 94:8 116:15 168:9,11 204:18	sample 139:4	
		samples 178:12	

scale 119:7,9,25	send 186:24	164:1	176:14 181:1
scenario 110:11	sense 33:10 34:2	shielding 168:9,10	186:25 187:1
schedule 14:4	38:18 40:7 43:2	short 16:25 17:1,	201:17,18
73:13 86:13 187:9	51:9 199:5 213:14	4,14 40:22 59:19	similarity 169:11
216:4,5	sentence 189:3,7	60:8 74:22	simple 32:20 40:9,
scheduled 147:9	sentences 189:19	118:17,25 119:1	16,21,25 41:5,9
157:2	separate 39:25	183:10 195:25	42:3,7 46:13 47:2,
scheduling 86:12	56:3 181:24	shorten 183:25	3 49:4 50:11,23
scope 84:9 130:14	September 44:2	shortfall 109:23	53:12 54:3 58:13
scrap 203:19	47:15,16 48:1,4	111:3	59:24 91:5 109:25
season 7:1 16:18	108:4 112:6,10,14	shortly 58:25	113:7 142:11
36:15 60:23 70:14	113:3 124:21	shoulder 60:24	simple-cycle 7:10
172:7	series 105:19	show 7:16 35:11,	39:11 42:14 53:14
seasonal 112:6	161:9	24 45:11 57:8	57:14
163:14	serve 71:3 123:15	59:6 118:11	simpler 18:7
seasonality 24:22	service 52:15	showed 7:18 9:23	181:23 182:9
55:25 71:15 136:6	60:25 126:22	115:15	simplest 111:2
seasons 6:22	127:20 151:23	showing 85:25	simplicity's 98:13
15:22 16:24 17:2	155:3 212:22	174:10	simplified 111:15
60:24 70:20 85:8	serviceable	showings 119:14	simplify 92:1
seat 151:10	140:12	shown 36:4 73:6	192:8
154:14	services 123:1	131:13	simply 39:18
secondary 136:23	session 96:21	shows 48:10	135:22 142:5
section 93:11	set 26:23 75:2	shut 119:4	single 71:9,10
103:25	81:25 82:1 97:3	sic 140:7	138:23 143:8,15
sections 212:6	98:10 166:9	side 9:12 16:13	161:8 179:18
sector 107:16	185:15 211:21	17:11 33:5 56:24	180:23 181:16
sectors 26:15	settlement 195:3,	67:25 68:1 90:21	205:13
secure 95:22	11,18	92:10 93:1 96:2,3	single-cycle 6:16
security 214:9	settlements 195:6	98:17,22 105:25	8:10
seeking 105:13	setup 88:5,6	107:1,9,18 109:9,	single-family
SEER 163:16,18	shareholder 25:1,	11 112:19	103:10 130:21
sees 142:4 212:5	5,25 66:21 68:20	signals 120:9	sir 14:11 21:5
segmenting 179:5	76:3,23	significant 10:10	63:24 146:1,11
self-imposed	shareholders 68:8	significantly	151:11 152:14
83:2,16	91:22	204:22	154:14 155:22
selling 114:10	sheet 187:15	similar 23:16 56:5	159:11
	sheets 11:11	61:5 88:1 129:8	sit 51:22 52:20
	32:21 33:4 35:10	152:20 156:6,7	60:18 94:14
			124:23 197:7
			208:15 215:1

sitting 117:11,12	sources 139:16 174:24 191:17	70:19,23 71:21	130:8,10 132:20 134:24 189:11 207:14
situation 170:16	Southern 161:2	staff 5:6,7 6:14 11:3 15:1 24:7	stand 4:6,8,19 14:9 63:5,16,24 86:11,25 114:8 151:1 152:24 156:9 157:6 158:16 174:13,18 182:8
situations 197:19	space 151:19	33:2 37:13 42:23 43:24 45:25 48:1 51:21 55:22 57:1, 16,25 60:7 61:13, 14 65:5,19 66:12 69:5 78:20 85:13 90:11 111:13 121:16 123:5 125:17 126:5 132:3 135:9,14,20 136:3,4,6,12,19 137:2,12,21,23 138:4,9 139:8,25 140:6,10,14 143:10 145:9 147:8,19,21 148:23 149:19 150:4,7 152:3 153:8,13 155:9 156:11 157:3,17, 21 163:2 169:6 171:10 177:22 178:11 179:13 180:21 181:24 183:18 185:17,21 192:13 193:6,25 215:10	standard 7:2 163:17 166:7 202:21
Sixty-two 94:3	speak 9:15 47:14 73:2 130:11 148:24 186:5,7	Staff's 44:25 53:13 54:25 55:11 64:18 65:14,22 100:4 137:15 148:15,20,22 149:3 150:24 168:23,25 169:16 175:18 182:8 185:25 192:8	standardize 181:21
size 118:18 139:4, 5	speaking 62:14 101:5	stage 199:1	stands 87:6 90:7 128:5 147:19 150:5 157:20 193:21
sizes 187:22	specific 36:15 38:11 81:15 82:1, 7 130:16 146:6,8 173:25 190:21 191:3,5 207:23	stakeholder 129:13 194:14 200:21 207:19	start 18:4,10,11 28:12 53:12 56:8 79:22 83:8 85:6,7 86:18 102:1 106:6 109:21 132:12 165:2,5
skip 28:10	specifically 22:1 32:16 34:6 58:12 59:3 73:13 163:2 179:5 185:24	stakeholders 129:19,20,21	started 16:9 46:18 94:20 95:4 110:1, 2 114:14 123:21 162:23
slide 43:20 45:2 48:10 63:7	spell 151:17 154:20		starting 85:1
slides 45:6	spend 83:5 198:7 202:10 211:10,21 212:2,14		starts 16:6
slow 46:15	spending 192:23		state 151:17 154:20 166:3 179:11
small 10:2 139:4 152:7 212:11,12	spent 197:24,25 201:23		stated 6:14 25:14 35:3 143:10
smart 16:1 112:20 114:16 124:19	spillover 138:7,8 196:22		statement 95:1 135:8 145:16
snapshot 133:17	Spire 88:8		states 106:24 111:8 119:13 214:10
snowballing 165:3	Spire's 88:6		
softball 64:24	split 82:14		
software 120:17	split-incentive 103:23		
solution 85:4 86:15	spoke 214:14		
solve 85:3	sponsor 152:1 155:7		
someplace 116:11	spot 177:14		
sooner 134:10	spring 28:24,25 29:18 55:24		
sort 34:3,13 35:25 36:6 56:9,17 57:3, 22 94:5 100:12 106:7 142:8 208:12 213:9			
sound 161:3 182:10			
sounds 37:1 39:13 105:23 208:14			
source 161:25 165:23 167:8 185:9 191:18			

statewide 125:10 132:9 142:10 200:9	strong 119:14	186:25	120:19 161:21
status 87:21 191:23,24	structure 68:24 92:6 98:12 134:17 207:7 208:22	subtle 189:16	166:18 175:21,22 176:16,21 190:4 203:15
statute 25:3 68:2 92:16	structured 60:23	subtract 97:22	supporting 106:3, 15 120:20
statutes 96:2	struggle 61:20 103:19 121:9	subtracting 98:24	supports 136:6
statutory 102:10	struggled 161:8	subtractions 56:25	supposed 116:17 182:15 196:9
stay 104:19 216:4	struggling 41:22 43:5 178:10	successful 135:18	surcharges 116:22
steam 165:5	studied 210:9	sudden 93:22 114:22,23	surface 33:8
step 31:2 46:15 63:3 66:19,25 67:9,12 73:21 74:5 75:12 85:23 93:10 96:5,6,17, 19,20,22 127:5 128:18 149:19 150:19 158:13 181:22 193:10 198:25 215:25	studies 119:13 140:3	suffice 45:4	surprise 76:8
steps 99:21 170:7 177:11 183:9 184:18	study 109:7 209:25	suggest 180:22	surrebuttal 12:7, 21 35:3 91:18 142:24 155:8,15 157:13
stewards 104:15	stuff 93:9 95:24 115:4 120:21 122:10 128:5 198:14 215:3	suggested 15:22	surveys 203:2
stipulates 207:12	subissues 143:20	suggestion 137:21 142:9	swaths 175:6 176:12
stipulation 194:11 211:16,17	subject 39:13 121:4 138:11 146:7,9 179:17	suggests 137:16	swings 170:13
stop 63:20	subjecting 183:7	summarize 186:19	switch 128:19
storm 7:6 33:18, 22 61:4	subjective 56:18	summary 37:4 79:14 164:1	switched 182:1
storms 33:22	submission 140:11	summation 83:24	switching 126:19
straight 97:8 202:2	submissions 18:8	summer 6:23 9:10 24:19 28:24 55:23 56:6 60:21,22 71:12 120:24	sworn 4:11,13 14:12,14,19 31:4, 6 63:25 64:2 87:1, 3 90:2,4 144:18, 23,25 147:12,14, 16 149:25 150:2 151:5,7 154:9,11 157:23,25 158:20, 22 193:16,18
stress 97:6 132:24 163:22 182:11	submitted 77:20 84:3 135:20,22 186:18	summertime 9:14	system 113:10,16
strive 76:2	subsection 132:22	sunk 120:15	
striving 76:6,9 77:8	subsequent 208:3 209:24	supplement 127:19	T
	substantial 21:15 37:14 51:23	supplied 55:21	tab 191:4
	substantially 152:20 156:6,7	supply 33:5 56:24 68:1 90:21 92:10 93:1 96:2 98:17, 22	table 132:16,25 133:9,12,18 134:8
		supply-side 6:2 68:7 72:5 73:21 74:12 90:19 91:9 123:16 173:6,8	
		support 12:14 40:8 71:5 110:24	

139:13,19,23	102:1 111:25	template 130:4	14,20,23 58:12,23
140:1,8,12 142:24	115:9 117:11,12	ten 45:4 115:11	63:17,21 66:4,8,
161:6,24 162:8	130:1,5,19	116:21 161:20	17 67:4 73:12
163:13,23 165:16	133:10,24 134:8	162:17 208:16	75:11 83:7 91:18,
166:5 175:13	162:11 170:10	tenants 103:24	20 94:22 98:20
185:12	172:1 173:4	tend 6:9	119:18,25 129:24
tables 139:21	182:12 188:6,14	tended 185:14	136:4,19 138:10,
159:22 164:5,9	192:2 194:18	tender 4:22 14:19	17 142:24 146:25
174:25 190:4	196:15 197:22	144:19 153:13	152:2 153:4
takes 4:8 67:11	201:24,25 207:20	156:11 158:18	155:9,15 156:10
102:9 103:23	talks 91:20 93:14	tendered 31:13	157:7,11,12,13
206:24	164:15 203:17	64:7 87:8 90:9	163:3,4 174:3
taking 4:5 92:23	tangible 95:20,21	193:23	175:16 176:15
96:8 98:25 103:16	100:7	tenders 147:22	177:5,6 184:5,6
118:12 126:15	tantamount 64:25	150:7 157:22	185:10 186:12,15
156:9 157:5	67:4	term 33:14 37:18	187:3,16 191:23
158:16 167:12	target 80:4,11,21,	83:10 106:7	194:25 195:24
204:15	25 81:5,25 83:2,	118:25 119:1	203:5 204:6
talk 15:19 21:22	16 164:6	196:7,8 197:17	Tevie 137:2,12
22:8 55:23 75:10	targeting 67:8	terms 17:18 25:22	149:20,21,22,23,
91:7,24 92:18	targets 21:13,16	106:16 197:15	24 150:1,7,20
93:11 96:20 98:9	26:22 83:22,23	201:23	178:11
103:24 119:19	92:12,13 94:11	territory 60:25	thermo 9:12
133:5 134:7	164:6	126:22	thermostat 16:2
141:18 164:17	tariff 16:4 110:3	test 17:14 118:9,	19:18 124:19
165:25 175:15	151:24 155:3	11	thermostats 9:13
185:14 194:6	tariffs 89:2	testified 4:14	112:21
201:5 212:5	tat 110:23	14:15 26:13 31:7	thing 20:6 80:15
213:17	tax 125:5	32:8 64:3 87:4	81:1 103:12
talked 25:23 56:25	taxes 111:17	90:5 143:21 145:1	106:21 119:21
67:3 71:18 73:11	taxpayer 102:24	147:17 150:3	120:11 134:19
74:10,18 76:10,21	TD 167:19	151:8 154:12	159:19 166:11
81:8 83:7,21 85:5	team 16:7 17:5	158:1,23 193:19	168:8 169:8,15
88:10 90:18 92:14	technical 131:25	testify 112:13	173:1,15 181:3,13
93:17 124:15	132:9,21 135:2	209:2	184:8 208:11
141:23 164:2,7	139:12	testifying 23:24	things 7:5 19:18
165:18 167:25	technologically	105:6	91:9 101:25
171:17 172:10	196:13	testimony 7:22,25	102:4,19 107:12
185:11,13 190:18	tells 134:18	12:6,7,15,20,21	121:14,18 123:10
191:15 206:23		32:12,15 34:14	124:11 125:15
talking 23:10 28:8		37:4 38:2 47:13,	130:12 135:25
40:2 41:11 42:10			142:16,18 169:5,
53:15 54:2 55:16			18,25 171:3,7,14,
58:12 84:12			16,19 181:11
94:17,20 100:13			183:1,25 186:11

209:13 213:9	37:14 44:24 45:2, 23 52:2 55:5	122:2 124:23	translate 22:14
thinking 14:1 17:3	68:10 71:11,17	129:5,24 130:19	transparent
72:1 101:19 110:2	74:22,24 75:6	140:6 141:18	129:14,22 179:15
114:7 160:12	85:24,25 88:2,25	163:12,17 164:2	transparently
162:18 175:19	104:20 116:20	165:13,19 173:11	99:19
thinks 129:10	117:9 140:24	193:14 197:18	Travis 135:14
169:6	141:7 146:9,12	200:4,6,17 201:19	TRC 119:21,24
third-party 166:12	147:21 150:6,25	206:10 208:23	120:1
196:24	152:5,12,23,24	210:8	treat 24:17
Thirty 211:25	153:13 155:12,22	today's 216:1	treatment 54:6
thought 92:14	156:11 157:5,21	told 15:16	treats 54:12
99:16 170:2 181:4	158:17 160:5	tomorrow 138:19	TRM 133:14 134:1,
184:7 212:25	164:22 170:3	140:22 147:3	23 139:13,20,22
thoughts 38:21	171:3,7,9 172:9,	213:17 216:2,11	140:1,8,11
86:20	17,21 173:4,10,	top 106:17 127:1	145:19,22 146:4
thousand 132:10	18,23 177:4,5,13	128:6 145:25	159:15,20,24
161:14	180:6 182:17,21	146:10 165:6	160:7 161:6,23
thousands 40:4	183:9,13,21,25	178:23 200:16	162:15 163:22
84:6,18 139:17	184:5,10,15	topic 89:24,25	164:10 165:15,16,
thread 101:5	188:17 189:22	91:25 104:19	19 166:4,20 167:8
three-year 19:22,	192:19 195:25	128:21 137:3,13,	174:24 175:14
25 203:24	196:4 197:24,25	24 138:6 143:18	185:10,12 186:10
threw 191:16	198:15 199:7	166:21 169:2	189:10 191:12
throughput 87:19	205:4 206:8,20	193:13	197:14 200:3,6,9
136:24 138:19	time-based	topics 128:19	209:8,10
164:10,23 167:6,	138:12 142:20	171:4 204:8	TRMS 200:12
18 168:6 193:3	timeline 17:16	total 7:13 80:7,13,	true 69:11 100:4
216:3	28:20,21,22 88:1	23	124:7 152:15
throw 27:3 197:15	175:16 184:2	TOU 120:1	156:1 187:14
211:23	times 15:15 54:17	touch 111:8 122:3,	truing 68:19
throwing 85:3	62:19 111:16	4	tube 121:24 122:8
tie 19:11 74:15	158:17	touched 104:18	turn 47:11 107:24
138:12	timing 28:6 30:7	143:17	112:22,23 141:24
tied 69:1 73:4,6,9	56:23 67:9 71:4	tough 212:12	205:12
105:9	73:23,24 74:10,11	TR 200:3	TV 147:2
ties 22:19	75:5 82:9 85:7	track 57:9	Twenty-three
time 4:19,20,22	92:7 98:12 134:6,	tracked 133:15	44:12
10:10 12:2 13:17	10 176:11	trade-off 118:14	two-part 209:13
28:13 29:15,20,24	tit 110:23	trade-offs 118:4	twofold 207:20
30:4,9,11 31:12	to-apples 35:25	120:3 125:14	
	today 13:17 17:9	198:9	
	46:19 48:10 65:18		
	73:3 88:11 102:11		

type 50:19 160:17 169:15	168:15 176:21 177:10 179:24 183:16,22 186:8 192:18,21 195:19 204:19 207:5 209:14 210:7,12 213:1	Uri 7:6	13 67:21,22 69:15,17 72:13 87:11,14 89:3,6 90:6,8,11 127:6,8, 10 128:15,17 141:13,16 144:11, 13 146:15 147:25 149:8 150:10 153:17 156:15 158:4 159:1 180:16,19 184:20, 22 193:20,22 215:23,24
types 162:12 171:2 184:8 188:9		usage 178:13	
typic 214:6		user 132:2	
typical 98:7		utilities 87:18,22 88:4,5 116:5,12 126:18 128:9 207:1	
typically 59:4 98:10 99:1 123:18 179:16 214:4	understanding 8:17 36:10 78:11 108:9 166:23 167:7 172:11 173:3 178:6 200:19,25	utilities' 127:20	
<hr/> U <hr/>		utility 68:7,24 75:25 98:13 104:6 138:25 143:10 181:7,25 205:14, 19,21 207:7	vantage 104:3 109:13 114:10 204:20
Uh-huh 95:6	understated 97:14	utility's 59:19 76:2 83:11,12	variables 160:20 162:18,19
ultimate 120:1 173:7	understood 30:8 54:10 99:16 190:10	utilize 73:18 128:10 163:5,13 164:9 178:20,23	vary 107:6 160:20
ultimately 214:10	unique 111:10	utilized 139:16 163:1 190:3 193:2	VEIC 200:11
umbrella 106:7 108:25	unit 38:19 136:18	utilizing 121:19 159:23 160:1 163:11,16 164:18, 24 188:11	verification 93:12 139:3 141:19 182:20
unadjusted 170:24	unknowns 60:3		verified 141:25 170:15
uncertainty 120:14	unnecessary 188:13	<hr/> V <hr/>	verify 135:23 179:19 188:12 213:3
undergoes 209:20	unpack 113:4	vacuum 124:25	Verizon 128:8
undergone 133:8	unquote 169:9 188:1	vague 139:23	Vermont 200:11
underlying 51:4 61:8 190:9,25 191:4	unreliable 165:3	valid 139:21,22	versa 160:25 161:2
underperform 23:8	unsuccessful 85:16	valuation 69:3,6 202:3	version 127:19 134:17,22 200:3, 14,15,17 203:18 204:17
underperforming 23:10 84:1,21	update 134:2,4,5, 18	values 140:2	versions 200:16
understand 4:4 17:12 19:9,13,16, 23 20:3 21:16 22:13,17 23:3 26:20 28:23 40:19 42:21 68:6 95:4 98:23 100:3 101:11,18 113:5 119:20 134:1,12 165:8 166:13	updated 7:2 138:14 177:1	valuing 96:1,2 100:12	versus 24:19 25:24 27:11 39:16 119:10 136:5 143:18
	updates 133:14 134:17	Vangerpen 5:11 11:21 13:7,10,16, 23 15:5 26:7,10 27:18,20 31:21 39:4 52:25 61:25 64:10,14 65:4,5,	
	updating 134:9		
	upfront 193:1		
	upgrades 124:16		
	upwards 162:17		
	urban 214:8		

viability 6:7
117:25 123:13

viable 118:17
124:1

vice 160:24 161:2

VEIC 200:10

view 21:11 33:3
179:15

virtue 25:6

visible 166:20

Visual 133:25

visualizing 47:6

visually 49:14

voice 210:5

volume 132:1,5,10
145:19

voluminous
139:14

volunteer 44:4

W

wait 154:25 206:6

waiting 207:15

walk 28:2 29:5
48:9 50:3 73:9
79:9 83:20 122:17
129:25 161:8
176:2

walked 124:6

walks 73:14

wall 176:3

Walmart 119:4

wanted 14:5 65:3
191:22

wanting 13:11
30:3

warm 124:21

warranted 64:19
65:15,17,24 69:9

washer 133:19

water 106:21,23
119:11 128:1
133:3

ways 111:5,6
118:5 120:6
180:21 183:15

weather 7:5,17,18,
20,24 8:2,15,16,
19 33:1 35:21
36:5 40:16,22,24
41:6,10,13,14,17,
18,19 42:4,5,15,
17,19,25 43:3
48:11,13,17,23
49:7,20 50:17
60:1,5 61:1
109:24

weatherization
103:10 121:8
127:17

weatherize 122:12

weatherized
122:15

weatherizing
103:13

Webex 62:12

weeds 163:6

week 12:15 86:14
128:13 134:13
135:17 161:4

well-designed
182:24

well-documented
140:14,18 184:1,
4,9

well-planned
182:23

well-supported
184:4

well-thought
169:17 170:2

whichever 86:22

widget 197:18

wildly 84:1,20

Wills 32:7,14 73:2
106:6

wind 91:2

Windows 128:13

winter 6:23,24 7:5,
6,7,9,13,15 8:19,
22 9:8,17,25 10:4,
7,11 11:14 15:21
16:8,18 24:18
28:19,24 29:4,17
30:11,22 33:1,18
36:11 38:19 41:10
43:3 48:12 55:16,
19,24 56:7,12,21
60:17,23 61:21
71:20 72:1
105:14,25 106:19,
21 107:3,16,24,25
108:1 112:3
118:24 120:24

wintertime 9:12

wiring 121:25
122:9

wit 150:21

withdraw 147:3

witnesses 12:13,
15 59:2 138:4
139:9 147:8
150:25 163:2
176:9

wondering 25:17

word 48:19

words 48:18

work 17:5 22:17
28:20 51:4 78:10
81:12 116:10
121:22 123:19
175:7 187:25
190:3,8,11,16,23
191:1,21 213:14

worked 121:15,16
182:15 197:6
208:1

working 9:22 16:9,
11,16 17:15,17
21:25 62:20 134:3
195:21 197:24,25
206:19

works 13:21 32:9
92:5

workshops
175:25 192:5

worries 174:23

worst 171:25

wow 212:7

wrap 216:1

wrestle 102:7

write 91:24 177:4

written 184:5,6

wrong 16:6 176:11
211:7

wrote 175:6

Y

year 16:5,16,17
17:12,13 18:7,14
28:9,11,14,18,25
29:8,10,16,18,23
30:9,10,11,12,13
59:10 71:11 75:8
79:24 82:11,12
83:4 85:14 108:7
139:6 160:19
167:22 168:7

172:2 173:4,15
175:20 186:2
188:15 192:1
196:13 197:14
199:20 200:1
201:6 206:6,7
214:18,19

year-round 36:12,
14 38:23,25

years 18:6 37:17,
24 52:11,13,16
74:13,20,21
106:13 112:9
114:13 116:21
173:13 178:14
192:25 194:9,19
196:1 202:18,19
208:16

yesterday 31:11
38:2 64:24 65:1
73:3 93:17 94:18
144:19 200:7

Z

zone 16:25 36:21
70:18 71:16

zones 70:21