

1 STATE OF MICHIGAN

2 BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

3 In the matter of the application of
4 CONSUMERS ENERGY COMPANY for approval
5 of an Integrated Resource Plan under
6 MCL 460.6t, certain accounting
7 approvals, and for other relief.

Case No. U-21090

Volume 6

PUBLIC RECORD

8 CROSS-EXAMINATION

9 Proceedings held via Microsoft Teams in the
10 above-entitled matter before Sally L. Wallace,
11 Administrative Law Judge with MOAHR, for the Michigan
12 Public Service Commission, Lansing, Michigan, on
13 Monday, December 6, 2021, at 9:05 a.m.

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1 Monday, December 6, 2021

2 At 9:05 a.m.

3 - - -

4 (Hearing resumes following adjournment of Friday,
5 December 3, 2021.)

6 JUDGE WALLACE: We are back on the record
7 in Case No. U-21090, In the matter of the application of
8 Consumers Energy Company for approval of an Integrated
9 Resource Plan under MCL 460.6t, certain accounting
10 approvals, and for other relief.

11 Today we will begin with appearances,
12 taking appearances for the record. While we were off the
13 record, we discussed the witness schedule for today, and
14 I think we're all set on that. So beginning with the
15 Company, please.

16 MR. BEACH: Good morning, your Honor.
17 Robert Beach, Bret Totoraitis, Theresa Staley, Michael
18 Rampe, Anne Uitvlugt, Ian Burgess, Gary Gensch on behalf
19 of Consumers Energy Company.

20 JUDGE WALLACE: Good morning. Attorney
21 General.

22 MS. GILL: Good morning, your Honor.
23 Celeste Gill and T.J. Andrews on behalf of Attorney
24 General Dana Nessel.

25 JUDGE WALLACE: Good morning. Commission
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1 Staff.

2 MR. SINGH: Good morning, your Honor.

3 Amit Singh, Spencer Sattler, and Nicholas Taylor on

4 behalf of Staff.

5 JUDGE WALLACE: Good morning. The Clean

6 Energy Organizations.

7 MS. KEARNEY: Good morning, your Honor.

8 Margrethe Kearney on behalf of the Clean Energy

9 Organizations.

10 JUDGE WALLACE: Good morning. Hemlock

11 Semiconductor.

12 MS. HESTON: Good morning, your Honor.

13 Jennifer Heston of the law firm of Fraser, Trebilcock,

14 Davis & Dunlap appearing on behalf of Hemlock

15 Semiconductor Operations LLC.

16 JUDGE WALLACE: Good morning. The

17 Biomass Plants.

18 MR. WATERS: Good morning, your Honor.

19 Tom Waters on behalf of the three non-CMS general

20 partners in Genesee, Grayling, and T.E.S. Filer City, and

21 on behalf of the other four Biomass Plants, and for ease

22 of reference, I will refer to them today as the Biomass

23 Plants.

24 JUDGE WALLACE: Thank you, Mr. Waters.

25 Michigan Environmental Council, Natural Resources Defense

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1 Council, Sierra Club.

2 MR. BZDOK: Good morning, your Honor.
3 Christopher Bzdok behalf of those parties, along with
4 co-counsel Michael Soules on behalf of Sierra Club.

5 JUDGE WALLACE: Good morning. Great
6 Lakes Renewable Energy Association, Residential Customer
7 Group? (No response.)

8 Association of Businesses Advocating
9 Tariff Equity.

10 MR. CAMPBELL: Good morning, your Honor.
11 Steve Campbell of Clark Hill, PLC, on behalf of the
12 Association of Businesses Advocating Tariff Equity.

13 JUDGE WALLACE: Good morning,
14 Mr. Campbell. Mackinac Center for Public Policy? (No
15 response.)

16 Energy Michigan, EIPC, Institute for
17 Energy Innovation, Clean Grid Alliance? (No response.)

18 O.K. Midland Cogeneration. (No
19 response.)

20 METC.

21 MS. FLOWER: Good morning, your Honor.
22 Olivia Flower on behalf of METC.

23 JUDGE WALLACE: Good morning, Ms. Flower.
24 Wolverine Power Supply Cooperative. (No response.)

25 Michigan Public Power Agency. (No
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1 response.)

2 Citizens Utility Board.

3 MS. HILLYER: Good morning, your Honor.

4 Holly Hillyer on behalf of CUB.

5 JUDGE WALLACE: Good morning. Urban Core
6 Collective.

7 MR. TEMPLETON: Good morning, your Honor.
8 Mark Templeton and Robert Weinstock, with our law student
9 Jacob Pavlecic, on behalf of Urban Core Collective.

10 JUDGE WALLACE: Good morning. All right.
11 I did miss anybody? Catch everybody? O.K.

12 Now, yesterday I sent out -- I tried to
13 like hit at least one person from each party, I sent out
14 another meeting notice for a confidential meeting should
15 we need to go into a confidential session, and of course
16 those, unlike the Sharepoint, those meeting invitations
17 can be forwarded to anyone who needs to be there and who
18 has a signed nondisclosure agreement, which I don't have,
19 but I don't need one, and I really need the confidential
20 materials from the Company, I am not on that service
21 list. So if you could forward -- I know there was the
22 rebuttal testimony, there was a couple of redacted
23 testimony, anyway, if you could forward that to me, that
24 would be great.

25 MR. BEACH: Will do, your Honor.

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1 JUDGE WALLACE: I should have said
2 something before.

3 - - -

4 J E F F R E Y E. B A T T A G L I A
5 resumed the stand, and having been previously sworn,
6 testified further as follows:

7 JUDGE WALLACE: All right. So we are
8 back with Mr. Battaglia. Thank you very much for coming
9 back this morning, Mr. Battaglia. And Mr. Waters, you
10 have cross for Mr. Battaglia?

11 MR. WATERS: I do, your Honor.

12 JUDGE WALLACE: And I need to check again
13 today, Mr. Battaglia, you're still under oath, is anyone
14 in the room with you?

15 THE WITNESS: There is not.

16 JUDGE WALLACE: And what materials and
17 devices do you have with you?

18 THE WITNESS: I have a note pad, a pen,
19 my computer with access to electronic files, and my
20 testimony and exhibits printed.

21 JUDGE WALLACE: All right. Well, I just
22 need to again remind you that there should be no
23 unauthorized communication while you are actively
24 testifying on cross.

25 So with that, Mr. Waters, why don't
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1 you -- why don't you go right ahead.

2 MR. WATERS: Thank you, your Honor.

3 CROSS-EXAMINATION

4 BY MR. WATERS:

5 Q Mr. Battaglia, can you hear me?

6 A I can hear you.

7 Q O.K. Please turn to page 2 of your direct testimony,
8 that's where you lay out your prior experience. Prior to
9 your work on this IRP, what experience did you have with
10 solar generating facilities?

11 A So prior to the work on the IRP, once I took the position
12 as Director in Project Management, we work on our
13 development of the solar, whether it be acquisitions that
14 are coming from the solicitation process or self-
15 development.

16 Q Well, first of all, I know that's not reflected on page
17 2, is it? It doesn't say anything about solar
18 experience?

19 A Yes, but your question was prior to the IRP work, what
20 experience did I have in solar.

21 Q Right. When did you start working on the IRP?

22 A I don't recall the exact date.

23 Q Do you recall an approximate date?

24 A No, I don't even recall an approximate date, no.

25 Q Prior to working on the IRP, how much experience did you
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1 have in researching and evaluating solar project
2 performance data such as that that led to your
3 recommendation to use the 23.4-percent capacity factor?

4 A Again, it would have been prior to the IRP work that we
5 started as my new position as Director in Project
6 Management.

7 Q But how much experience did you have?

8 A Minimal. It would have been learning as we moved along
9 in this position, but through the acquisition process,
10 the projects that came through the solicitation process,
11 and then also our self-performance development.

12 Q And did you have anything more than minimal experience,
13 you know, prior to the time that you started to do the
14 research regarding the capacity factor to be used for the
15 solar projects in the IRP modeling?

16 A No, I did not.

17 Q Who chose you to be the person who was tasked with the
18 responsibility of determining the capacity factor to be
19 used in the IRP modeling?

20 MR. BEACH: Your Honor, I'm going to
21 object here because counsel is asking about case
22 strategy, legal strategy, irrelevant issues. Our Company
23 has nearly 8,000 employees, we can't have, possibly have
24 every employee that knows everything about everything
25 testify in the case. At some point a witness has to be
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1 representative of an entire department. So I think this
2 is incredibly unproductive and irrelevant about who chose
3 Mr. Battaglia to be a witness.

4 MR. WATERS: The relevance will become
5 clear.

6 Q (By Mr. Waters): You can exclude from that question any,
7 you know, communications or anything like that with
8 counsel. But other than that, I would like to know, you
9 know, if you remember, who in the Company tasked you with
10 the responsibility to determine the appropriate capacity
11 factor for the IRP?

12 MR. BEACH: And I will renew my
13 objection, your Honor. That is case strategy that
14 counsel is involved in.

15 Q (By Mr. Waters): Was there any case strategy not
16 involving counsel that led to your selection as the
17 person tasked to determine the appropriate capacity
18 factor?

19 A Can you restate your question, it's becoming convoluted?

20 Q I'll rephrase it. Actually, I'm not going to rephrase
21 that question, I'll ask a different question.

22 Are there other employees at Consumers
23 Energy who have significant solar development or design
24 experience?

25 A Yes, there are.

1 Q And who are they?

2 A Well, we have a very large technical team, engineering
3 and technical team. To provide specific names would be
4 rather challenging.

5 Q All right. Approximately how many people are involved in
6 that technical team?

7 A I'm not sure. It's an entire organization.

8 Q You have -- if it's an entire organization, do you have
9 any idea how many people are involved in that solar
10 organization?

11 MR. BEACH: Again, I'm going to object.
12 This is vague and broad. The Company obviously has a
13 glide path to procuring many megawatts of solar that many
14 departments in the Company are involved in. I don't
15 believe this is narrowly scoped cross that the witness
16 can respond to reasonably.

17 MR. WATERS: This is a fair question.
18 I'm trying to figure out what his knowledge was and what
19 knowledge he had available to him.

20 MR. BEACH: And I would say this is
21 incredibly unproductive because this is not a criminal
22 case that the witness witnessed a car accident. The
23 witness is representing multiple individuals at Consumers
24 Energy, and I think his testimony speaks for himself.

25 JUDGE WALLACE: No, I agree, Mr. Beach.
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1 I think this is -- somehow I have memories of coming
2 across this sort of thing before where, well, who is it
3 that knows this and are they a witness in the case and so
4 on and so forth; and if you can figure out a way to
5 phrase your question, Mr. Waters, to sort of get to the
6 point, I mean, as Mr. Beach pointed out, there's 8,000
7 employees of the Company and who knows how many people
8 are involved in the Company's solar, well, engineering
9 and then subset of engineering, which would be the solar
10 people.

11 MR. WATERS: Thank you, your Honor.

12 Q (By Mr. Waters): Mr. Battaglia, in doing the work that
13 led to your determination to use the 23.4-percent
14 capacity factor that is used in the IRP modeling, did you
15 talk to or consult with anybody else in the department?

16 A Yes. There is a team that worked in developing my
17 testimony.

18 Q Okay. And approximately how many people are on that
19 team?

20 A Again, there's multiple from all different subject matter
21 expert facets.

22 Q We'll come back to this later. Am I correct that a
23 capacity factor is the ratio of actual megawatt hours
24 produced to the maximum possible megawatt hours that
25 could be produced typically on an annual basis?

1 A Not necessarily, because there's multiple factors that
2 play into that.

3 Q How do you, how did you -- what formula did you use to
4 determine the capacity factor? Or strike that.

5 What formula would you use to determine a
6 capacity factor?

7 A We used the publicly available data in the NREL report
8 that was provided, and the calculations and data that
9 they provided.

10 Q I'm not referring to the NREL report, I'm asking
11 generally, do you know how to calculate a capacity
12 factor, and isn't it true that you calculate a capacity
13 factor by determining the ratio of the actual megawatt
14 hours produced of a generating plant to its maximum
15 possible megawatt hour production, and that typically
16 those capacity factors are stated on an annual basis?

17 MR. BZDOK: I'm going to object. That's
18 a three-part compound question, he has three different
19 questions in one.

20 JUDGE WALLACE: Mr. Waters, can you break
21 that down, please.

22 MR. WATERS: Sure.

23 Q (By Mr. Waters): Are there three inputs into the
24 calculation of a capacity factor -- or strike that --
25 two, the ratio of the actual megawatt hours produced, the
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1 maximum possible megawatt hours that could be produced?

2 A I'm not sure, I am not the subject matter expert nor the
3 technical expert.

4 Q If you don't know how a capacity factor is measured, then
5 how could you judge whether a capacity factor is
6 appropriate or not?

7 A I represented the testimony that was developed by
8 multiple parties, again, a multitude of subject matter
9 experts in the technical field.

10 Q But you are the witness who has been presented by the
11 Company, you know, to offer that testimony and defend it,
12 are you not?

13 A I am.

14 Q And you don't know how to calculate a capacity factor?

15 MR. BEACH: So your Honor, I'm going to
16 place an objection, because I think this goes beyond the
17 witness's testimony. Mr. Kapala is the Company's witness
18 that has testified to the capacity factor calculation of
19 the Company's generating fleet, Mr. Battaglia has
20 development opportunities, development technologies and
21 the capacity factors that those development technologies
22 would have. So these are different than just calculating
23 an existing generating asset's capacity factor from what
24 is expected for a prototype in the future and what would
25 be modeled.

1 MR. WATERS: Your Honor, if this witness
2 doesn't know how to calculate a capacity factor, which is
3 an incredibly basic proposition, then that calls into
4 question, you know, everything in his testimony.

5 JUDGE WALLACE: I am going to sustain
6 your objection, Mr. Beach. Mr. Waters, my understanding
7 about the solar capacity factor was that it came from the
8 NREL ABT report for Chicago, which is the closest place
9 they had to Michigan, and that's what was used. In
10 addition, Mr. Kapala does appear to be the witness who
11 sort of developed all of that. This seems to be outside
12 the scope of Mr. Battaglia's testimony. Yeah.

13 MR. WATERS: O.K. I'll proceed.

14 Q (By Mr. Waters): You're aware that you have proposed a
15 23.4-percent capacity factor; is that correct?

16 A Relative to?

17 Q For use in the IRP.

18 A Are we still speaking solar?

19 Q Yes.

20 A That would be correct.

21 Q And are you aware that Mr. Polich has said that that is
22 an incorrect capacity factor?

23 A I am, as rebutted in our rebuttal testimony.

24 Q And have you read his testimony?

25 A I have, but it has not been recent.

1 Q Do you understand the magnitude of the difference between
2 the capacity factor that you have proposed versus the
3 capacity factor that Mr., the historical capacity factor
4 that Mr. Polich has referenced with regard to the total,
5 the different total number of megawatt hours that each
6 one of those calculations will produce, because there is
7 a 4-percent difference, isn't there?

8 A What are you comparing the 4-percent difference, the 23.4
9 compared to what?

10 Q Your 23.4-percent capacity factor to Mr. Polich's 19.4
11 historical capacity factor average.

12 A Yes, there is a 4-percent difference there.

13 Q Do you understand the impact of that 4-percent difference
14 on the 4,500 megawatts of capacity that the Company
15 intends to add to its system by 2030 or the
16 7,800 megawatts of capacity that the Company intends to
17 add to its system, tag to its system by 2040?

18 A Can you define impacts, magnitude? I mean those are
19 ambiguous terms.

20 Q You understand what megawatt hour difference that
21 4 percent makes over the total number of megawatt hours
22 that the Company has projected to produce in -- or would
23 like to add to its system in 2030, which is 4,500 hours,
24 and the total number of hours that the Company would like
25 to add by 2030, which is 7,800 megawatts?

1 A I have not calculated that delta, the difference between
2 the 19.4 --

3 Q You have no idea of the significance of that difference?

4 A Again, I think you would have to define significance, the
5 term significance. I mean that could mean something very
6 different to me than what it would mean to you.

7 Q If I tell you that a 4-percent difference applied to the
8 4,500 megawatt of solar capacity that the Company
9 proposes to add in by 2030 is 1,576,800 hours of
10 production in that year alone, do you have any reason to
11 dispute that?

12 A Could you restate your question?

13 Q No.

14 MR. WATERS: Can the court reporter read
15 it back, please.

16 (The record was read aloud as follows:

17 "Q If I tell you that a 4-percent difference
18 applied to the 4,500 megawatt of solar capacity
19 that the Company proposes to add in by 2030 is
20 1,576,800 hours of production in that year
21 alone, do you have any reason to dispute
22 that?")

23 Q (By Mr. Waters): And to clarify that, that's 1,576,900
24 megawatt hours.

25 A I have no reason to dispute that.

1 Q And if I were to tell you that you, if you apply that
2 4-percent differential to the 7,800 megawatts of solar
3 capacity that the Company proposes to add in 2040, that
4 that is 2,733,120 megawatt hours of generation; do you
5 have any reason to dispute that?

6 A Short of doing calculations myself, no.

7 Q I can give you the calculations right now if you'd like.

8 A No, that's O.K.

9 MR. BEACH: Yeah, it appears that we're
10 moving on, but the witness has clearly said he has not
11 made the calculations. I'm not objecting, but I would
12 object to the counsel providing his own calculations to
13 the witness.

14 MR. WATERS: Your Honor, I'm going to
15 need to talk to Mr. Kapala and cross him.

16 JUDGE WALLACE: Mr. Battaglia --

17 Q (By Mr. Waters): Do you generally --

18 JUDGE WALLACE: Hold on. Off the record
19 for a second.

20 (At 9:33 a.m., a discussion was held off the
21 record.)

22 JUDGE WALLACE: Back on the record.

23 Mr. Waters, do you have anymore questions for

24 Mr. Battaglia?

25 MR. WATERS: I do. And this is going
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1 slower than I expected.

2 Q (By Mr. Waters): Mr. Battaglia, you took an 18-percent
3 capacity factor from the NREL 2018 ATB report; is that
4 correct?

5 A Correct.

6 Q And does that report reflect that that was in DC or
7 direct current and the Aurora modeling is done in AC or
8 alternating current, you converted that from DC to AC,
9 correct?

10 A Correct.

11 Q And you applied a factor of 1.3. So you multiplied the
12 18-percent DC capacity factor by 1.3 to come up with a
13 capacity factor of 23.4 AC; is that correct?

14 A Correct.

15 Q How did you determine the 1.3 inverter ratio?

16 A The 1.3 inverter ratio is represented in the NREL report.

17 Q Are there other inverter ratios in that NREL report?

18 A That is the inverter ratio that was represented for
19 utility scale.

20 Q Do you have -- are you aware whether there are any
21 other -- strike that.

22 Do you know if the inverter ratio depends
23 upon the particular equipment, the transformer that's
24 used to convert from DC to AC?

25 A I believe the inverter ratio can change based on multiple
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1 factors.

2 Q If you used the 1.3 inverter ratio from the NREL report,
3 did you look to see if the inverter that was in that
4 report was going to be the same inverter used by the
5 Company or the independent power producers for their
6 solar generation?

7 A The information that we utilized from that report was
8 what we felt was similar or consistent with the utility
9 scale solar assets that would be awarded.

10 Q Is it true that there are other possible inverter ratios,
11 including 1.25 and 1.2?

12 A Not for comparison purposes of our test.

13 Q Say that again, please.

14 A Not for comparison purposes of what we had utilized as
15 our test from the NREL data report.

16 Q When you say you relied on the NREL data report, did you
17 just go to NREL and get the 23 or the 18 percent,
18 multiply it by 1.3, come up with a 23.4-percent capacity
19 factor, and then decide that was it?

20 A I guess you'll have to define that was it. I don't
21 believe that was the extent of the analysis --

22 Q What else did you do?

23 (Multiple speakers.)

24 COURT REPORTER: I'm sorry. I'm sorry,
25 Mr. Battaglia. You were talked over.

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1 A It was data that we utilized from a reputable source.

2 Q (By Mr. Waters): But what else did you do to confirm
3 that capacity factor?

4 A Mr. Waters, I don't believe it was a confirmation, it was
5 a sample dataset that we utilized to compare. I don't
6 see where it would be necessary for us to go back and
7 confirm the dataset that NREL had assembled.

8 Q So you did not look at any other data; is that correct?

9 A We utilized the NREL data report as referenced.

10 Q That is not my question. Did you look at any other
11 database other than NREL?

12 A Not that I'm aware of.

13 Q And the database you chose was a Chicago NREL database,
14 correct?

15 A Correct.

16 Q Did you ask anyone whether it was appropriate to apply a
17 Chicago NREL database capacity factor to Michigan solar
18 capacity?

19 A That was the information, the data that matched what we
20 would typically award similarly to our assets.

21 MR. WATERS: Objection, your Honor. That
22 was non-responsive, I ask that it be stricken.

23 Q (By Mr. Waters): And from this point forward,
24 Mr. Battaglia, I would ask you to answer the questions
25 yes or no; if you can't, you're entitled to say that.

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1 Did you ask anyone for a second opinion
2 as to whether the Chicago NREL capacity factor that you
3 utilized was appropriate for modeling a Michigan solar
4 facility?

5 A I did not.

6 Q Can you turn to the BMP exhibit, or proposed Exhibit 7.
7 Have you got that there?

8 A I'm looking for it, Mr. Waters.

9 JUDGE WALLACE: Mr. Waters, was that
10 uploaded, it's uploaded into the Sharepoint?

11 MR. WATERS: It is.

12 A O.K. I am there.

13 Q (By Mr. Waters): Is that a page that reflects that, you
14 know, what NREL is?

15 A It appears to have links that would route you to describe
16 what NREL is or what they are about, but it looks like
17 it's just a screenshot from the bottom of a web page.

18 Q It's the screenshot from the bottom of NREL's web page.
19 Do you recognize it to be such?

20 MR. BEACH: I'm going to object. This
21 document was not part of the witness's testimony, the
22 witness didn't offer this document, I don't know what it
23 is or why it's being introduced, and I think there needs
24 to be some kind of description provided about what it is
25 before we conduct cross on it.

1 Q (By Mr. Waters): Do you understand, Mr. Battaglia, that
2 NREL is the National Renewable Energy Laboratory, which
3 is a department of, a U.S. Department of Energy
4 laboratory?

5 MR. BEACH: That doesn't resolve my
6 objection. This is nothing that Mr. Battaglia has
7 provided, this is not Mr. Battaglia's NREL data from 2019
8 that he provided in his testimony.

9 MR. WATERS: Mr. Battaglia in his
10 testimony said he looked at an NREL ATB, so --

11 MR. BEACH: This is the 2021 ATB report
12 that -- the Company could not have relied on that because
13 we --

14 MR. WATERS: This is not --

15 (Multiple speakers.)

16 COURT REPORTER: I'm sorry, one at a
17 time.

18 MR. WATERS: Let me rephrase my question.

19 Q (By Mr. Waters): Do you understand that NREL is the
20 National Renewable Energy Laboratory which is a national
21 laboratory of the United States Department of Energy?

22 A Yes.

23 Q And is that reflected in Exhibit BMP-7?

24 A It is.

25 MR. WATERS: I'd move for the admission
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1 of Exhibit BMP-7.

2 MR. BEACH: Your Honor, I'm going to
3 place an objection. So I'm -- I'm respectful of your
4 Honor's previous ruling about discovery, I understand
5 what your Honor ruled about the Company answering
6 discovery responses not coming in through witnesses, I
7 don't believe this is that. I don't believe that the
8 Company has provided this document in discovery at all.
9 This does not appear to be the 2019 NREL report that the
10 Company replied on. It is a publicly available report,
11 from my knowledge, and Mr. Waters could cite this if he
12 wants in brief. I just don't think it's appropriate to
13 bring it in through Mr. Battaglia, who has not indicated
14 that he has reviewed this at all, and the Company's
15 testimony specifically indicates that we used the 2019
16 NREL report because of time limitations.

17 MR. WATERS: Your Honor, this does not
18 say that this is -- this has no reference to the NREL
19 '21, 2021 report. Now, we're going to get to the NREL
20 2019 ATB report that the witness did use in just a
21 minute. This is part of the predicate of that ATB
22 report, it explains what is in Mr. Battaglia's testimony,
23 which he relied on the NREL 2019 ATB.

24 MR. BEACH: Your Honor, the second page
25 says 2021 Electricity ATB Technologies and Data Overview,
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1 the Company could not have possibly relied on that
2 information in the development of its IRP, it would have
3 been impossible.

4 MR. WATERS: Bob, are you looking at the
5 correct exhibit?

6 MR. BEACH: Are you talking about BMP-7
7 Revised?

8 MR. WATERS: Yes.

9 MR. BEACH: Look at the second page.

10 MR. WATERS: This is a one-page exhibit.

11 MR. BEACH: I have BMP-7 Revised in front
12 of me.

13 JUDGE WALLACE: Mr. Bzdok.

14 MR. BZDOK: May I be heard, your Honor?

15 JUDGE WALLACE: Yes, you may.

16 MR. BZDOK: So first I think -- so I
17 would join the Company's objection, I believe that
18 Mr. Waters has not come anywhere close to establishing
19 that this witness has foundation to talk about this
20 document, that he has any familiarity with it, that he's
21 reviewed it. Second, if I'm -- I mean I'm looking at
22 BMP-7 Revised in the Sharepoint, if I'm looking at the
23 right exhibit, I don't even understand what this is.
24 This is like -- it appears to have no data, no
25 information, it just says NREL's logo, so I think for
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1 that reason there's been no relevance established either,
2 this is just -- I don't even know what this is. So I
3 would join the Company's objection, and I would add those
4 lack of foundation and lack of relevance or even clarity
5 as to what this even is other than just a piece of paper
6 with NREL stamped on it.

7 MR. BEACH: Your Honor, I can show you
8 what I'm looking at, because I think this could be deeper
9 than just this issue. I have the report here, I'm
10 sharing my screen, and it says BMP Revised 7.

11 MR. WATERS: You are looking at the wrong
12 Exhibit 7.

13 MR. BEACH: How could that be?

14 MR. WATERS: Go to the exhibit --

15 JUDGE WALLACE: The one in the Sharepoint
16 is just this one-page thing with the logo for NREL and an
17 explanation that it's part of the Department of Energy.
18 I am assuming that both the 2019 NREL ABT and the 2021,
19 am I correct about -- because other -- because of the
20 timing, intervenors were able to use an updated NREL
21 report, presumably that is in evidence somewhere. I
22 honestly don't see the necessity for this, Mr. Waters. I
23 mean we all know what NREL is.

24 MR. WATERS: It confirms what the witness
25 has said, and it's offered for one purpose only, which is
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1 to make clear beyond any doubt that the National
2 Renewable Energy Laboratory is a national laboratory of
3 the U.S. Department of Energy.

4 JUDGE WALLACE: O.K. I don't -- I don't,
5 again, I don't really see -- I mean maybe you want to try
6 this with Mr. Kapala, but like I said, we all know what
7 NREL is, the 2019 NREL report is I think already an
8 exhibit in the case.

9 MR. WATERS: It is.

10 JUDGE WALLACE: If you would like to
11 introduce an alternative to the NREL report or if your
12 witness used some alternative to NREL, that has certainly
13 happened before in IRP proceedings where, you know, one
14 party will use NREL, another party will use Lazard, you
15 know, and that's all fair game, but I don't see the
16 relevance of this document either. So it --

17 MR. WATERS: May I ask a question, your
18 Honor, of Mr. Beach?

19 JUDGE WALLACE: Yes.

20 MR. WATERS: Are you stipulating that
21 NREL is a, is a national laboratory of the U.S.
22 Department of Energy?

23 MR. BEACH: I'm agreeing to the fact this
24 is a publicly accessible document, and as that fact, you
25 can cite to that as a publicly accessible document. I'm
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1 not going to stipulate to anything that's in a publicly
2 accessible document.

3 MR. WATERS: So you're not stipulating
4 that that is a Department, a U.S. Department -- it's a
5 laboratory of the U.S. Department of Energy?

6 MR. BEACH: No.

7 Q (By Mr. Waters): All right. Let's see. Mr. Battaglia,
8 please go to Exhibit BMP-10.

9 MR. WATERS: Mr. Beach, for what it's
10 worth, I think you may need to refresh your Sharepoint.
11 The exhibit you were looking at was not the correct
12 exhibit.

13 MR. BEACH: O.K. I did pull it from
14 Sharepoint, so I appreciate that.

15 A I'm there.

16 Q (By Mr. Waters): Are you there?

17 A I am there.

18 Q O.K. And that is the electric 2019 ATB report that you
19 reference in your testimony, is it not?

20 A It appears it is.

21 MR. WATERS: I'd move the admission of
22 Exhibit BMP-10.

23 JUDGE WALLACE: Is there any objection to
24 the admission of Exhibit BMP-10?

25 MR. BEACH: I guess I'd like some
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1 clarification of what this is. This is -- is counsel
2 representing this is the report that the Company used?

3 MR. WATERS: I am representing that I
4 went -- strike that -- on Friday -- strike that.

5 On page 6 of Mr. Battaglia's testimony,
6 footnote 1, O.K., he identified a website which was
7 invalid when I went to it. Friday you circulated an
8 updated website link, I went to that website and obtained
9 this report from that website.

10 MR. BEACH: Is there a reason it needs to
11 be in evidence is my question if there's already a link
12 provided --

13 MR. WATERS: There is.

14 MR. BEACH: -- that provides where this
15 report is? I think it's surplusage.

16 MR. WATERS: No. This report needs to be
17 in evidence. This is the report he relied upon, a part
18 of it. He's already identified it as such.

19 MR. BEACH: And he's conceded that in his
20 testimony that it's publicly available and provided a
21 link that no party opposed to, and he said NREL archived
22 the prior link and provided a more updated link to get to
23 this report. I'm not understanding the BMP's position on
24 why this needs to be in the record when it's already in
25 the record.

1 MR. WATERS: Because your witness relied
2 on it. What is your objection to it?

3 MR. BEACH: It's already in the record,
4 and it's a publicly available report.

5 MR. WATERS: No, it's not.

6 MR. BEACH: Yes, it is.

7 MR. WATERS: The link is in the record,
8 the document is not.

9 MR. BEACH: Your Honor, I think the
10 danger here is that there's no verifying what counsel has
11 pulled up here; there's obviously confusion in these
12 documents, there's different versions floating around,
13 and there is not sufficient time. Mr. Battaglia's link
14 has not been opposed, counsel has just confirmed that he
15 was able to use the link. I think there's a real danger
16 in putting a document in that's this lengthy that the
17 parties have not been able to verify when there's already
18 a valid link provided that no one, no party has objected
19 to. Again, this is a publicly accessible governmental
20 website.

21 JUDGE WALLACE: O.K. In Mr. Battaglia's
22 testimony, you have revised the testimony to update the
23 link to the 2019 report?

24 MR. BEACH: Correct, your Honor. It was
25 already -- the Company always intended to link the 2019
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1 report, but it was an archiving issue I believe with it
2 at NREL.

3 JUDGE WALLACE: Correct. Mr. Waters, I
4 think that you can use this, use this report if you have
5 specific questions about the report. We're going to
6 assume that this is the correct report from that link,
7 but I'm not sure that we need to admit, given that it is
8 a publicly available document, we do have an updated link
9 that gets us to archives, as well as other, you know,
10 NREL reports that if you can ask questions about, as I
11 said, maybe using this exhibit as something that the
12 witness can refer to during the cross-examination, but we
13 do have a valid link to the report in Mr. Battaglia's
14 revised testimony. So please continue, Mr. Waters.

15 MR. WATERS: What happens if the link is
16 taken down? Because the original link cited in
17 Mr. Battaglia's testimony was invalid, and I am concerned
18 that if that link goes down, so does this. You know, if
19 the Company wants to add -- you know, this is the
20 electric portion of the ATB report that deals with the
21 capacity factor that the witness has already identified.

22 JUDGE WALLACE: Mr. Beach, link
23 degradation is an issue. I don't know, you know, NREL
24 does provide a link to the archive, I don't know whether
25 they re-archive things periodically, so.

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1 MR. BEACH: Your Honor. I would ask
2 before that it's, if it does become an exhibit, that the
3 Company has sufficient opportunity for its experts to
4 review this document; there is not sufficient time for
5 Mr. Battaglia to do this, no way to be efficient for him
6 to do that on the stand.

7 MR. WATERS: I'm perfectly happy to have
8 this part of the report admitted, Mr. Beach can go back
9 and confirm that it's accurate. If for some reason, and
10 this won't happen, he finds that it's not accurate, he
11 can come back and tell us. The report does in fact state
12 at the very top that you are viewing an older version of
13 the ATB, please view the more current version here, and
14 that's why the link originally went dead.

15 JUDGE WALLACE: All right. Why don't
16 we -- you can go ahead and ask questions about the
17 report, Mr. Waters, and then when we take our break after
18 you've concluded your cross of Mr. Battaglia, the Company
19 can take an opportunity to take a look at this and
20 confirm that this is indeed the 2019 NREL ATB -- I think
21 I keep saying ABT -- ATB report, and then if they do
22 confirm that, then we can admit it as an exhibit. O.K.?

23 MR. BEACH: That works for the Company,
24 your Honor. Thank you.

25 JUDGE WALLACE: Let's move on.

1 MR. WATERS: Thank you.

2 Q (By Mr. Waters): Mr. Battaglia, please go to page 4 --

3 A O.K.

4 Q -- of what has been marked Exhibit BMP-10. Is there --
5 look under the, at the very top, it says sources,
6 historical, Bolinger and Seel, do you see that?

7 A I do.

8 Q And do you see in the first paragraph two references to
9 Bolinger and Seel, which is the first line and the third
10 line?

11 A I do.

12 Q O.K. Now, I will represent to you that that same
13 reference material is in other parts, is referenced in
14 other parts of the ATB. Now please go to page 26 of the
15 ATB. I'm sorry. It is page 17 of the ATB.

16 A All right.

17 Q You see that link to a report by Bolinger and Seel, and
18 then there's a website link right there, which is also
19 part of a website link that we were forwarded Friday
20 night. Do you see that?

21 A I do.

22 Q O.K. Now please look at what has been marked as Exhibit
23 BMP-14.

24 A O.K.

25 Q Is that the Bolinger and Seel report that is referenced
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1 in the ATB, the 2019 ATB?

2 A I can not confirm that. It appears so, but I am not
3 familiar with this Bolinger report.

4 Q When you reviewed the 2019 ATB, did you look at the
5 materials that were referenced in that report?

6 A I did not.

7 Q Do you think you should have?

8 A No, I don't as a matter of fact. We utilized the data
9 that was produced in the report which relied on this.

10 Q So what you did is you solely relied on the 18-percent DC
11 capacity factor which you then converted and you didn't
12 do anything else to confirm that that was the correct
13 capacity factor?

14 A In reference to the model, yes.

15 MR. WATERS: Your Honor, I will represent
16 what Mr. Battaglia has indicated appears to be the case,
17 that that, that Exhibit 14 is in fact the Bolinger and
18 Seel report that is referenced in the 2019 ATB, and if
19 you go to page 26 of that report --

20 MR. BEACH: Your Honor, I'm going to
21 object. Is counsel asking cross right now or speaking to
22 your Honor?

23 JUDGE WALLACE: Mr. Waters, try to
24 refrain from testifying.

25 MR. WATERS: This report that is
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1 referenced in the 2019 ATB report that Mr. Battaglia
2 relied upon, O.K., is relevant to the question of the
3 appropriate capacity factor. He took one number --

4 MR. BEACH: But --

5 MR. WATERS: I'm not done.

6 MR. BEACH: But my objection still
7 stands. Mr. Battaglia said he didn't review the report,
8 so why are we continuing on an explanation of what the
9 other report says. He reviewed the ATB report, he said
10 he didn't review the site, and we're continuing to talk
11 about the site. I just don't think that's relevant, your
12 Honor, at this point.

13 MR. WATERS: It is relevant to --

14 JUDGE WALLACE: Not with respect to this
15 witness. Mr. Waters, did your witness sponsor the
16 Bolinger report? Your witness could have done so, he did
17 not. Mr. Battaglia did not review this, he's already
18 admitted that, and you're asking him to review and
19 comment while he's on the stand of a report that he did
20 not review, did not review it at all. He used the NREL,
21 that's what he did, and NREL relied on this. And again,
22 it seems like the sort of thing that your witness could
23 have sponsored, but did not do so. I am inclined to
24 agree with Mr. Beach that there's a question of relevance
25 here when the witness did not review this report.

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1 MR. WATERS: It is directly relevant to
2 what this witness could have seen if he had looked, and
3 it is --

4 JUDGE WALLACE: He said he didn't look.
5 So please move on, Mr. Waters.

6 Q (By Mr. Waters): Mr. Battaglia, are you aware of any
7 authority which supports the use of a Chicago capacity,
8 solar capacity factor for use in Michigan? There's none
9 cited in your testimony.

10 A Again, Mr. Waters, we utilized the data that was within
11 the NREL report which references a Chicago area.

12 Q That wasn't my question. Objection. Are you aware of
13 any authority that indicates that Chicago capacity factor
14 is appropriate for Michigan?

15 A I am not aware.

16 MR. WATERS: Your Honor, I'd like to make
17 an offer of proof with regard to Exhibit BMP-14, and that
18 offer of proof is that the information that was available
19 to Mr. Battaglia at the time that he relied upon the 2019
20 NREL ATB report reflects that the capacity factor for all
21 of the midwest was 19. --

22 MR. BEACH: Objection, your Honor.
23 Again, we're testifying. How is this an offer of proof?
24 You're testifying. We've already went through this, your
25 Honor, about Mr. Battaglia not having any knowledge of
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1 this exhibit --

2 MR. WATERS: Your Honor --

3 MR. BEACH: -- proposed exhibit.

4 MR. WATERS: -- I understand that this is
5 not Mr. Battaglia's testimony and that you do not want
6 to, you know, refer to BMP-14, but I am entitled to make
7 an offer of proof.

8 JUDGE WALLACE: All right. I think that
9 goes more to weight than admissibility. Go ahead,
10 Mr. Waters. Again, this is from 2018, it's not even from
11 2019, it I guess stands to reason because the 2019 report
12 had to rely on the previous information. So go ahead,
13 Mr. Waters. Again, I'm not sure -- you know, the Company
14 used 2019 NREL, that's what they did, they didn't look at
15 other things, and that's been, you know, that's clearly
16 established here. And it would appear to me that in your
17 briefing -- this is also publicly available, is it not?

18 MR. WATERS: It is, it is part of the
19 link that Mr. Beach provided on Friday. And if Mr. Beach
20 agrees that I can refer to this in brief, that's fine
21 with me.

22 JUDGE WALLACE: Mr. Beach.

23 MR. BEACH: No objection.

24 JUDGE WALLACE: O.K. So like I said, I
25 think that's more an issue for briefing, did the Company
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1 look at enough different sources, and that is something
2 that you could raise in your brief, that there are other
3 sources out there, so.

4 MR. WATERS: Respectfully, your Honor,
5 what matters is what would they have found had they
6 looked.

7 JUDGE WALLACE: O.K. You can argue that
8 in your brief.

9 MR. WATERS: O.K. Can we take a
10 five-minute break?

11 JUDGE WALLACE: Yes. Why don't -- how
12 about we make it ten minutes, it's been about one hour.
13 So off the record for ten minutes.

14 MR. WATERS: O.K. Thank you.

15 (Recess at 10:08 a.m.)

16 (Back on the record at 10:20 a.m.)

17 JUDGE WALLACE: Back on the record in
18 Case No. U-20190. Mr. Waters, please continue.

19 MR. WATERS: Thank you, your Honor. I'd
20 like to begin by saying I feel the need to complete the
21 offer of proof. I recognize and appreciate Mr. Beach's
22 agreement to allow me to refer to this as a public
23 document. But if admitted into evidence, Exhibit BMP-14
24 is an exhibit, it was a report which is referenced in the
25 ATB report that this witness has admitted that he used.
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1 He has testified that he used that. He could have looked
2 at this report, and if he had looked at this report, page
3 26 of this report states capacity factors for utility
4 grade, utility scale solar facilities in terms of AC.
5 And for all of the Midwest it reflects the fixed solar
6 facilities having a capacity factor of 19.1, and the
7 tracking solar facilities having a capacity factor of
8 20.8. And those are profoundly different from 23.4 that
9 this witness used. That is the end of my offer of proof.

10 JUDGE WALLACE: All right. Thank you,
11 Mr. Waters. Please take it up in your brief. Do you
12 have any more questions for Mr. Battaglia?

13 MR. WATERS: I do.

14 Q (By Mr. Waters): Mr. Battaglia, you had Michigan's solar
15 capacity factor data available to you when you looked at
16 the NREL website for Chicago, didn't you?

17 A I don't recall.

18 Q Did you look? If you -- So your answer is you don't
19 recall?

20 A My answer is I don't recall, yes.

21 Q Did you ask what Michigan solar capacity factor data was
22 available in the Aurora model itself? You were working
23 on that.

24 A I was not working on the Aurora model. That is not
25 within the scope of my responsibility.

1 Q But you were providing input you knew was going to go
2 into the Aurora model; is that correct?

3 A We developed data that was utilized for the Aurora model.

4 Q And you knew that that data was going into the Aurora
5 model, correct?

6 A No, not necessarily. The data was developed within our
7 scope of responsibilities and was utilized as an input
8 into the Aurora model.

9 Q Did you ask the Company what solar data it had for
10 Michigan?

11 A I did not. And I you assume when you say "the Company,"
12 you're referring referencing Consumers Energy?

13 Q Consumers Energy Company. So you did not look at the
14 solar capacity factor data for the projects that are
15 referenced in Mr. Polich's revised Exhibit BMP-6. Is
16 that correct?

17 A I did not.

18 Q O.K. And are you aware that there is a -- that CMS owns
19 a utility scale tracking solar facility that is named
20 Delta?

21 MR. BEACH: Objection, your Honor.

22 Counsel did not clarify who CMS is.

23 MR. WATERS: The parent company of
24 Consumers Energy Company.

25 MR. BEACH: Consumers Energy's parent
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1 company does not own any generation.

2 Q (By Mr. Waters): Are you aware of a project called Delta
3 Solar?

4 A I am not.

5 Q And you didn't look?

6 A I was not aware.

7 Q Well, the sum and substance of what you are saying is
8 that you went to the Chicago NREL site and just took that
9 capacity factor and didn't double check it against
10 anything else to make sure it is accurate; is that
11 correct?

12 A No. I don't believe that is correct. Because if you
13 look at page 8 of my direct testimony, in the first
14 paragraph it references other industry resources that we
15 used as comparisons.

16 Q What page are you on, please?

17 A I'm on page 8.

18 Q Which sentence are you referring to?

19 A If you look on Line 5. It starts with: This comparison
20 included.

21 Q And what did you find when you looked at those two
22 references?

23 A We found that the NREL's data was most relevant for our
24 use.

25 Q What did the EIA data say?

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1 A I don't recall.

2 Q You don't recall why that was more -- less favorable than
3 the NREL data at all?

4 A I don't recall.

5 Q And the second one you reference, a subscription-based
6 forecast from IHS Markit called U.S. Solar PC Capital
7 Costs and LCOE output for data December 2019. Is that
8 correct?

9 A That is what my testimony reads.

10 Q Do you remember what that said?

11 A I do not remember what that said.

12 Q So you can't tell me why that would have been less
13 favorable than the NREL data; is that correct?

14 A Well, I can recite what's in my direct testimony.

15 Q That's not my question. Can you tell me right now why
16 the HIS Markit data was less favorable than the NREL
17 model?

18 A I do not recall.

19 Q You do understand, do you not, that the capacity factors
20 as you previously agreed you don't dispute, differences
21 can make a difference of millions of megawatt hours of
22 generation?

23 MR. BEACH: Your Honor, I'm going to
24 object because this has already been discussed by
25 counsel, so asked and answered.

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1 JUDGE WALLACE: I agree, Mr. Beach. We
2 have already talked about this, that the number of hours,
3 megawatt hours of generation, is sensitive to the
4 capacity factor that might be used in developing the data
5 for the model. So please continue.

6 Q (By Mr. Waters): Did your capacity factor calculation,
7 your acceptance of the NREL data, include any degradation
8 factor for the fact that solar panels degrade over time?

9 A I don't recall but I believe that was in the report.

10 Q That's not my question. My question is: Is there a
11 degradation factor in your 23.4 percent? Or is it -- Is
12 it merely, is that 23.4 percent merely 18 percent times a
13 1.3 percent inverter ratio to get you to 23.4 percent,
14 which does not include any degradation factor, does it?

15 A I guess I don't understand the question.

16 Q Can you identify anything that indicates that the 23.4
17 percent either includes or doesn't include a degradation
18 factor for solar panels?

19 A I cannot without reviewing the report.

20 Q And that would be the 2019 ATB report?

21 A Correct.

22 Q Has the Company had an opportunity to go back and
23 confirm?

24 JUDGE WALLACE: I think this would be
25 Exhibit BMP-10.

1 MR. WATERS: That is correct, your Honor.

2 MR. BEACH: So the Company has reviewed
3 the formatting, which is different, which impedes our
4 ability to review quickly. The report that we cite was
5 27 pages. This report is 19 pages. From what we can
6 tell, it appears consistent, but there is highlighting
7 throughout the report that we don't believe was in the
8 original report.

9 MR. WATERS: Mr. Beach is correct. I did
10 highlight the Bolinger and Seel report that was referred
11 to repeatedly in the ATB report that this witness said he
12 reviewed. And that Bolinger and Seel report is precisely
13 what is in Exhibit BMP-14. It is referenced throughout
14 that Exhibit 10.

15 MS. KEARNEY: Your Honor, I would object
16 to the introduction of any exhibit that contains a
17 highlighting by Mr. Waters unless it's simply being used
18 as a demonstrative.

19 MR. WATERS: Unless what?

20 MS. KEARNEY: Unless it's being used as a
21 demonstrative but not admitted evidence.

22 MR. WATERS: I think I'm entitled to call
23 to the Commission's attention the number of times that
24 the Bolinger and Seel report, which he did not read, was
25 referenced in the 2019 ATB report that he admits that he
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1 did read. And --

2 MR. BEACH: Your Honor, I would just ask
3 that that be done in briefing and not through exhibits,
4 and that the exhibits retain their integrity that they
5 have in their initial state.

6 JUDGE WALLACE: Yes. I mean that if we
7 have, if we have the link, the correct link to the 2019
8 report that was the basis for the Company's solar
9 capacity factor among other things, I believe -- Do we
10 have the correct link of -- Within that report we also
11 have links to this Bolinger report, and I agree with Mr.
12 Beach. I think that the place to take this up is in
13 briefing. The exhibit is highlighted; that's not really
14 necessary. You can discuss the cases and paragraphs,
15 lines, whatever of that NREL report in your brief. I
16 think that is quite sufficient for the record. It is
17 effectively in the record; it's publicly available. So
18 we don't have any evidentiary issues or anything like
19 that.

20 So Mr. Waters, could you please continue.
21 The Company, like I said, we have an objection to the
22 fact that there is highlighting in the report. And so I
23 don't think that's necessary. And again, we do have a
24 link to the report. We know that the Company used the
25 report. We know that the report itself references to
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1 some other publicly available documents, and so I think
2 sticking to this discussion in your brief is quite
3 adequate for your purposes.

4 MR. WATERS: Your Honor, could I move
5 that that link be admitted as Exhibit BMP-21?

6 JUDGE WALLACE: Again I'm not sure that
7 that's necessary because the -- Mr. Battaglia's testimony
8 was -- testimony or rebuttal testimony, was revised to
9 reflect the correct link.

10 On the other hand, if nobody objects to
11 the introduction of an exhibit that just has a URL on it,
12 we could do that.

13 MR. BEACH: Your Honor, I'm not going to
14 object in the interest of moving this along. The link is
15 already in the testimony, Mr. Battaglia's testimony. And
16 if Mr. Waters wants to put it in again, I'm not going to
17 object.

18 JUDGE WALLACE: So, O.K. Prepare the
19 exhibit and we'll deal with that this afternoon. It just
20 contains the link to the NREL report and nothing else.
21 Because it's in the NREL report, there's other links in
22 there that, that you or anyone else is free to explore.

23 MR. WATERS: Thank you, your Honor. With
24 that, I have no further questions with the understanding
25 that I do need to recall or I do need to cross Mr.

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1 Kapala. And I also need to recall Company Witness Walz
2 as previously indicated.

3 MR. BEACH: Your Honor, we will need a
4 few minutes to discuss redirect. But if we could go off
5 the record, I would like to talk about the last couple
6 points of clarifications by the BMPs.

7 JUDGE WALLACE: Off the record.

8 (Discussion was held off the record from 10:43 to
9 10:51 a.m.)

10 JUDGE WALLACE: All right. Back on the
11 record. We held a -- Oops, Mr. Beach is leaving us.
12 Come back, Mr. Beach. I wonder if he got unceremoniously
13 thrown out like we all were last Friday. Well, in any
14 event, let's go off the record for ten minutes, and then
15 we will, I believe, finish up with Mr. Battaglia. So off
16 the record for ten minutes, and hopefully Mr. Beach will
17 be able to rejoin us.

18 (Off the record from 10:52 a.m. to 11:20 a.m.)

19 - - -

20 JUDGE WALLACE: So the first thing we
21 need to do is: Is there any objection to the admission
22 of -- now we're all O.K. One Mr. Waters, one Mr. Beach,
23 and one Mr. Battaglia. We are back on the record.

24 Is there any objection to the admission
25 of Exhibit BMP-21? (No resposne.)

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1 Hearing none, the exhibit is admitted.
2 Mr. Beach, any redirect for
3 Mr. Battaglia?

4 MR. BEACH: No redirect, your Honor.

5 JUDGE WALLACE: Thank you, Mr. Beach.
6 Mr. Battaglia, thank you very much. You are excused.

7 (The witness was excused.)

8 - - -

9 JUDGE WALLACE: And let's go off the
10 record for just one second. Off the record.

11 (Off the record briefly.)

12 JUDGE WALLACE: Ms. Staley, please call
13 your next witness. We are back on the record. We're
14 already on the record. We're still on the record.

15 MS. STALEY: Thank you, your Honor. I
16 call to the stand Heather A. Breining.

17 COURT REPORTER: Ms. Breining, this is
18 the Court Reporter. Would you raise your right hand,
19 please.

20 - - -

21 H E A T H E R A. B R E I N I N G
22 was called as a witness on behalf of Consumers Energy
23 Company and, having been duly sworn to testify the truth,
24 was examined and testified as follows:

25 JUDGE WALLACE: And Ms. Breining, before
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1 we get started, is there anyone physically present in the
2 room with you?

3 THE WITNESS: No.

4 JUDGE WALLACE: What materials and
5 devices do you have with you?

6 THE WITNESS: I have paper copies of my
7 testimony and exhibits, and I do have a list of my
8 discovery in Note pad.

9 JUDGE WALLACE: And what is currently on
10 your screen or screens?

11 THE WITNESS: I have Teams, this meeting,
12 on one screen, and on the other screen I have the
13 SharePoint site open.

14 JUDGE WALLACE: And I just want to remind
15 you there should be no unauthorized Communication during
16 your testimony with any other witnesses or your counsel
17 if it's not sanctioned by me.

18 And with that, please go ahead, Ms.
19 Staley.

20 MS. STALEY: Thank you, your Honor.

21 DIRECT EXAMINATION

22 BY MS. STALEY:

23 Q Good morning, Ms. Breining.

24 A Good morning.

25 Q Will you please state your full name and business address
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1 for the record?

2 A Heather A. Breining. I'm at 1945 West Parnall Road,
3 Jackson, Michigan 49201.

4 Q And by whom are you employed?

5 A Consumers Energy.

6 Q And what is your position with Consumers Energy?

7 A I'm a Senior Engineering Technical Analyst III.

8 Q Did you cause to be prepared and prefiled in this matter
9 a document entitled Direct Testimony of Heather A.
10 Breining on behalf of Consumers Energy Company, which
11 consists of a cover sheet and 38 pages of questions and
12 answers?

13 A Yes.

14 Q Did you also cause to be prepared and prefiled in this
15 matter a document entitled Rebuttal Testimony of Heather
16 A. Breining on behalf of Consumers Energy Company?

17 A Yes.

18 Q Does that document consist of a cover sheet and nine
19 pages of questions and answers?

20 A Yes.

21 Q Are there any changes that you wish to make at this time
22 to either your direct or rebuttal testimony?

23 A No, there are not.

24 Q If I were to ask you these same questions today, would
25 your answers remain the same?

1 A Yes.

2 Q And that is the testimony you're adopting as your own
3 today?

4 A Yes.

5 Q Are you also sponsoring any exhibits associated with your
6 direct and rebuttal testimony?

7 A Yes.

8 Q And are those the exhibits that have been previously
9 marked by the court reporter as Exhibits A-22 through
10 A-31, and rebuttal Exhibit A-102?

11 A Yes.

12 Q Are there any changes that you wish to make at this time
13 to your exhibits?

14 A No.

15 Q O.K. Were these exhibits prepared by you or at your
16 direction?

17 A Yes.

18 MS. STALEY: At this time, your Honor,
19 the Company moves to bind in the direct and rebuttal
20 testimony of Heather A. Breining and for the admission at
21 the end of cross-examination of Exhibits A-22 through
22 A-31 as well as rebuttal Exhibit A-102. And with that, I
23 tender this witness for cross-examination.

24 JUDGE WALLACE: Thank you, Ms. Staley.
25 Is there any objection to binding in the direct and
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1 rebuttal testimony of Ms. Breining? Hearing none, the
2 testimony is bound in.

3 (Testimony bound in.)

4 - - -

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STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of)
CONSUMERS ENERGY COMPANY)
for Approval of an Integrated Resource Plan)
under MCL 460.6t, certain accounting)
approvals, and for other relief.)
_____)

Case No. U-21090

REVISED DIRECT TESTIMONY

OF

HEATHER A. BREINING

ON BEHALF OF

CONSUMERS ENERGY COMPANY

June 2021

HEATHER A. BREINING
REVISED DIRECT TESTIMONY

1 **Q. Please state your name and business address.**

2 A. My name is Heather A. Breining, and my business address is 1945 West Parnall Road,
3 Jackson, Michigan 49201.

4 **Q. By whom are you employed and in what capacity?**

5 A. I am employed by Consumers Energy Company (“Consumers Energy” or the “Company”)
6 as a Senior Engineering Technical Analyst III in the Environmental Services Department.

7 **Q. Please describe your educational background and work experience.**

8 A. In 2001, I earned a bachelor’s degree in mathematics with a minor in physics from Spring
9 Arbor University. I have been employed by Consumers Energy for 20 years in various
10 areas including Environmental Services, Transaction Strategies, and Resource Planning.

11 **Q. What are your responsibilities as a Senior Engineering Technical Analyst III?**

12 A. I am responsible for evaluating and analyzing potential compliance options with
13 environmental regulations and/or legislation and assuring that Consumers Energy’s capital
14 expenditures for environmental compliance are technically sound, economic, and
15 complement the broader corporate strategy related to delivering safe, reliable, clean, and
16 affordable energy. In addition, I am responsible for managing the Company’s emission
17 allowance portfolio and providing the necessary environmental documentation to support
18 both Power Supply Cost Recovery and Electric Rate Case proceedings.

19 **Q. Have you previously provided testimony before the Michigan Public Service
20 Commission (“MPSC” or the “Commission”)?**

21 A. Yes. I testified in the 2018 Integrated Resource Plan (“IRP”) Case No. U-20165 and the
22 following electric rate cases: Case Nos. U-17990, U-18322, U-20134, U-20697, and
23 U-20963.

HEATHER A. BREINING
REVISED DIRECT TESTIMONY

1 **Q. What is the purpose of your testimony in this proceeding?**

2 A. The purpose of my testimony is to support the Company's IRP by describing the
 3 environmental regulations with which the Company's electric generating fleet must
 4 comply, the cost of compliance with those regulations, as well as the timing and the
 5 justification for the investments made to ensure environmental regulatory compliance,
 6 environmental justice, and the overall best plan for Michigan. My testimony and exhibits
 7 also support Company witness Sara T. Walz's Exhibit A-4 (STW-1).

8 **Q. How is the remainder of your testimony organized?**

A. My testimony is organized by the following sections:

Section I: Environmental Regulations and Compliance Strategy – Air Quality

Section II: Environmental Regulations and Compliance Strategy – Water

Section III: Environmental Regulations and Compliance Strategy – Waste

Section IV: IRP Emissions Outlook

Section V: Environmental Justice

Section VI: Corporate Clean Energy Goals

9 **Q. Are you sponsoring any exhibits with your testimony?**

10 A. Yes. I am sponsoring the following exhibits:

11 Exhibit A-22 (HAB-1) AQCS Project Summary Table;

12 Exhibit A-23(HAB-2) Projected Capital Expenditures;

13 Exhibit A-24 (HAB-3) Carbon Price Forecasts Evaluated in
 14 IRP Risk Analysis;

15 Exhibit A-25 (HAB-4) 5-Year IRP Annual Emission
 16 Projections;

17 Exhibit A-26 (HAB-5) Proposed Course of Action ("PCA")
 18 and Required Scenario Projected
 19 Emissions;

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1	Exhibit A-27 (HAB-6)	Total Projected CO ₂ Emissions Per
2		Sensitivity Analysis and Percentage
3		of CO ₂ Compared to the Base;
4	Exhibit A-28 (HAB-7)	Emissions Accounting Methodology;
5	Exhibit A-29 (HAB-8)	Environmental Justice Results;
6	Exhibit A-30 (HAB-9)	Health Benefits Results; and
7	Exhibit A-31 (HAB-10)	Clean Energy Goal Comparison.

8 **Q. Were these exhibits prepared by you or under your direction or supervision?**

9 A. Yes.

10 **SECTION I: ENVIRONMENTAL REGULATIONS AND**
 11 **COMPLIANCE STRATEGY – AIR QUALITY**

12 **Q. What is the purpose of Section I of this testimony?**

13 A. The purpose of Section I is to describe the various environmental regulations related to air
 14 quality applicable to Consumers Energy that were a consideration in the development of
 15 this IRP.

16 **A. Air Quality Regulation**

17 **Q. What is the Cross State Air Pollution Rule (“CSAPR”)?**

18 A. CSAPR is a federal air rule established by the United States Environmental Protection
 19 Agency (“EPA”) that requires member states of the United States to reduce certain power
 20 plant emissions that contribute to pollution in other states. Specifically, CSAPR is a
 21 cap-and-trade rule that governs the emission of sulfur dioxide (“SO₂”) and nitrogen oxides
 22 (“NO_x”) from fossil-fueled Electric Generating Units (“EGUs”) through the use of an
 23 allowance-based cap-and-trade program. Under this program, NO_x is regulated on both an
 24 annual basis and on a seasonal basis during the ozone season (i.e., May through
 25 September). Each allowance (annual or ozone) permits the emission of one ton of NO_x,

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1 with the emissions cap and number of allocated allowances decreasing over time. SO₂ is
2 regulated on an annual basis only, with the emissions cap decreasing over time. Phase I of
3 CSAPR was effective from January 1, 2015, to December 31, 2016, and Phase II became
4 effective on January 1, 2017. In March 2021, in response to two Federal Court rulings, the
5 EPA issued an update to the CSAPR rule that created a Phase III that became effective on
6 June 29, 2021, for the 2021 ozone season. Although this revision reduces the available
7 NO_x allowances for Consumers Energy's EGUs, the Company does not expect any
8 significant change to cost or operational structure due to Phase III.

9 **Q. What is "cap and trade"?**

10 A. Cap and trade is a market-based approach to reducing emissions by providing economic
11 incentives for achieving reduction in air emissions, wherein a "cap" on the emissions is
12 determined and then divided into allowances. EGUs are then allocated a limited number
13 of the allowances by a governing authority. This allocation authorizes EGUs to emit
14 specific quantities of a specific pollutant, per time period. EGUs are required to surrender
15 allowances in amounts equal to their emissions. EGUs whose emissions exceed their
16 allocation must buy ("trade") allowances from others. Companies that exceed the cap pay
17 penalties.

18 There are active trading programs for several different air emissions. As previously
19 stated, NO_x and SO₂ are traded under the CSAPR program. There are also emission
20 markets for greenhouse gas emissions, such as carbon dioxide ("CO₂"), in other states and
21 countries, but not in Michigan.

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REVISED DIRECT TESTIMONY

1 **Q. Can you please describe the Mercury and Air Toxics Standards (“MATS”)?**

2 A. MATS is another federal air rule finalized by the EPA in December 2011. It regulates
3 emissions of mercury (“Hg”), acid gases, certain metals, and organic constituents through
4 emission rate limits or the use of work practices for coal- and oil-fired EGUs. Unlike prior
5 regulations, which permit allowance purchases or emission averaging over multiple units,
6 MATS requires unit-by-unit compliance. Compliance with MATS was required by
7 April 16, 2015, with a permissive one-year extension. The Company received an extension
8 from the Michigan Department of Environmental Quality, now known as the Department
9 of Environment, Great Lakes and Energy (“EGLE”), which pushed the compliance
10 deadline to April 16, 2016. Consumers Energy has five coal-fired units and two oil-fired
11 units subject to MATS.

12 **Q. Can you please describe the Michigan Mercury Rule (“MMR”)?**

13 A. MMR is the Michigan counterpart to the federal MATS rule. Much like the federal MATS,
14 the MMR was designed to regulate Hg air emissions in the state of Michigan. The MMR
15 requires existing coal-fired EGUs to choose one of three methods to comply with the
16 emission limits set forth in the MMR. Further, the MMR requires any new EGU to utilize
17 best available control technology. EGLE ensured that the MMR had the same compliance
18 deadline as the MATS rule, which was April 16, 2016.

19 **Q. Please describe what regulations affect EGUs regarding greenhouse gases.**

20 A. In October 2015, the EPA published rules intended to reduce carbon pollution from EGUs
21 as described below. These rules were known as the Clean Power Plan (“CPP”) Rules and
22 were issued pursuant to Section 111 the Clean Air Act (“CAA”). Due to litigation
23 challenges and administration changes, as described below, the only rule from the CPP that

HEATHER A. BREINING
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1 remains in effect is from Section 111(b) of the CAA for new and/or modified sources. This
2 rule does not impact existing EGUs like the Company's D.E. Karn ("Karn")¹ and
3 J.H. Campbell ("Campbell") plants unless they make a major modification.

4 **Q. What is the status of the CAA Section 111 rules?**

5 A. In July 2019, the EPA repealed the CPP and replaced it with the Affordable Clean Energy
6 ("ACE") Rule, which focused on one component of the CPP -- energy efficiency
7 improvements at coal-fired units. In response to legal challenges brought by environmental
8 organizations, the D.C. Circuit Court of Appeals vacated the ACE Rule in January 2021.
9 Due to these developments, there are currently no carbon regulations covering the existing
10 fleet of Consumers Energy fossil fuel-fired generation facilities, absent a major
11 modification. The Biden Administration, however, has communicated its intent to propose
12 a rule, likely under Section 111(d) of the CAA, and potentially other CAA sections, to
13 address carbon emissions from existing sources. The Company expects a proposed
14 Section 111(d) rule addressing carbon emissions in late 2021 or early 2022.

15 **Q. How does the uncertain status of greenhouse gas regulation of EGUs affect the**
16 **Company's proposed IRP?**

17 A. There are no expenditures related to greenhouse gas emissions compliance included in this
18 IRP filing, as there currently are none identified for its existing fleet, or planned fleet, of
19 generating units. That said, the Company will continue to monitor regulatory activity
20 regarding greenhouse gas emissions standards that may affect EGUs and will incorporate
21 any future compliance-related costs into future rate cases and future IRPs as appropriate.

¹ Also commonly known as the Karn-Weadock complex or facility. The Weadock coal-fired generation units previously located at the complex were retired in 2016 but features of the former Weadock plant remain.

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1 **Q. Are there any additional identified proposed air quality-related state or federal**
2 **environmental laws or regulations that the Company considered when evaluating this**
3 **IRP?**

4 A. There are numerous other regulations, laws, and rules related to air quality including, but
5 not limited to: (i) the Greenhouse Gas Reporting Program; (ii) the Boiler Maximum
6 Achievable Control Technology standard; and (iii) the Regional Haze and Ozone
7 Nonattainment Areas standard. However, no specific and/or significant actions are
8 required of Consumers Energy regarding these identified regulations for purposes of
9 resource planning pursuant to Section 460.6t. Consumers Energy will continue to comply
10 with all applicable statutes and regulations.

11 **B. The Company's Air Quality Compliance Strategy**

12 **Q. Describe Consumers Energy's historic Air Quality Compliance Strategy ("AQCS").**

13 A. Consumers Energy has been reducing air emissions for years using various approaches
14 such as fuel switching and installing air quality control systems. A summary of the
15 pollution control equipment that has been installed to date is provided in Exhibit A-22
16 (HAB-1)

17 **Q. How has the Company's AQCS benefitted customers?**

18 A. Consumers Energy's efforts have prudently ensured compliance with applicable state and
19 federal environmental regulations. The Company's actions and investments to achieve
20 such compliance have been performed in a manner which has minimized, to the extent
21 reasonably possible, the associated costs for customers. These investments have allowed
22 the continued operation of Michigan-based generation, thus helping to ensure electric
23 reliability and fuel diversity, which helps protect against significant fuel price fluctuations.

HEATHER A. BREINING
REVISED DIRECT TESTIMONY

1 **Q. Are there any additional pollution control equipment installations specifically related**
2 **to air quality control that must be installed on any units within the Company's**
3 **existing generation fleet for regulatory reasons?**

4 A. No. There are no additional air quality control systems that need to be installed for
5 compliance with the current air quality regulations. Some currently installed air quality
6 equipment requires on-going capital maintenance for items such as fabric filter bags, cages
7 and/or catalyst layers, etc. However, on-going capital maintenance is discussed by
8 Company witness Norman J. Kapala.

9 **Q. Are there any capital expenditures related to the air quality compliance that could be**
10 **avoided if any or all of the Campbell units were to retire prior to May 2031?**

11 A. Since there are no additional air quality control systems that need to be installed for
12 compliance with the current air quality regulations, there would be no potentially avoidable
13 capital expenditures from an environmental strategy perspective. However, from a plant
14 operational perspective, as previously mentioned, there may be some on-going capital
15 and/or operations and maintenance expenditures that may be avoidable. Company witness
16 Kapala addresses the operational expenditures that are currently scheduled to be made, but
17 that the Company would forego making in the event that one or more of the Campbell units
18 were retired early.

19 **Q. Are there any forecasted future expenditures associated with the Company's PCA to**
20 **be compliant with air quality regulations?**

21 A. No.

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1 **Q. Are there any forecasted future expenditures associated with the Company's Base**
2 **and/or Alternate Plan to be compliant with air quality regulations?**

3 A. No.

4 **SECTION II: ENVIRONMENTAL REGULATIONS AND**
5 **COMPLIANCE STRATEGY – WATER**

6 **Q. What is the purpose of Section II of this testimony?**

7 A. The purpose of Section II is to describe the various environmental regulations related to
8 water quality applicable to Consumers Energy that were a consideration in the development
9 of this IRP.

10 **A. EPA's Rule Regarding Section 316(b) of the Clean Water Act**

11 **Q. Can you please describe the EPA's rule regarding the Clean Water Act ("CWA")**
12 **Section 316(b)?**

13 A. In August 2014, the EPA published its final rule regarding Section 316(b) of the CWA
14 ("316(b) Rule"). The 316(b) Rule established new standards for Cooling Water Intake
15 Structures ("CWIS") at existing facilities. It became effective in October 2014 and applies
16 to existing power generation facilities with a design cooling water intake flow greater than
17 two million gallons per day ("mgd") from waters of the United States. It requires such
18 units to reduce impingement and entrainment of fish and other aquatic organisms at the
19 CWIS. Additionally, any facility subject to the 316(b) Rule with actual flows in excess of
20 125 mgd must provide an entrainment study with its National Pollutant Discharge
21 Elimination System ("NPDES") permit application.

22 **Q. What is the NPDES?**

23 A. NPDES is a permit program implemented by the EPA and authorized state governments
24 under the CWA. Under this program, industrial facilities that discharge pollutants into

HEATHER A. BREINING
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1 navigable waters must hold a permit from the EPA or authorized state agencies before they
2 can discharge said pollutants. The permit specifies the process in which water pollutants
3 may be discharged into navigable waters such as lakes, rivers, or streams as well as the
4 technological features required to limit water pollution.

5 **Q. What requirements does the 316(b) Rule impose on the Company?**

6 A. The 316(b) Rule establishes national requirements which apply to the location, design,
7 construction, and capacity of CWIS, and requires the use of Best Technology Available
8 (“BTA”) for minimizing adverse environmental impact. For impingement (where fish or
9 other aquatic life are trapped against cooling water intake screens), the EPA has determined
10 the BTA to be modified traveling screens, with fish return systems; however, six additional
11 alternatives, with equal or better performance, are available for a facility to meet this
12 standard. For entrainment (where fish or other aquatic life are pulled into or otherwise
13 follow the flow of water into the cooling water intake), the EPA did not determine a BTA,
14 because no one technology can be universally employed at all facilities. Rather,
15 entrainment BTA is determined on a site-specific basis by the regulatory agency
16 responsible for administering the NPDES program. The site-specific controls are justified
17 through a series of prescribed studies, including, but not limited to, entrainment
18 characterization; technical feasibility and cost evaluation; benefits valuations; non-water
19 quality and other environmental impacts; and peer review. For the Campbell and Karn
20 facilities, these prescribed studies were completed in 2017. Several studies required peer
21 review, which was completed in the first quarter of 2018.

HEATHER A. BREINING
REVISED DIRECT TESTIMONY

1 **Q. Has the Company performed the prescribed studies and followed the BTA for**
2 **minimizing adverse environmental impacts as required by the 316(b) Rule?**

3 A. Yes. The Company submitted the prescribed studies and associated BTA demonstrations
4 for Karn and Campbell to EGLE in 2018.

5 **Q. What proposal for BTA did the Company submit to EGLE for compliance with the**
6 **316(b) Rule?**

7 A. The Company's submittal seeks compliance for the entire Karn - J.C. Weadock
8 ("Weadock") complex and the Campbell complex, rather than at the individual cooling
9 water intake structures. For entrainment, the Company proposes that the existing cooling
10 water intake systems at both generating complexes be considered BTA since the costs of
11 additional technologies are wholly disproportionate to the benefits. In regards to
12 impingement, the Company is advocating that at the Karn-Weadock complex BTA can be
13 met by recognizing the flow reduction associated with Weadock Units 7 and 8 (part of the
14 Karn-Weadock complex/facilities) retirement and with seasonal operation of pumps.
15 Impingement BTA at the Campbell complex is met through a de minimus rate of
16 impingement at the existing CWIS system.

17 **Q. Has EGLE issued a final determination on these applications?**

18 A. No. EGLE, however, has provided "interim" approval for the current NPDES permit cycle
19 while it continues to review the application.

20 **Q. When is the EGLE's final determination expected, and how will the final**
21 **determination affect the Company?**

22 A. The timing of EGLE's review of the submitted reports and proposed compliance strategies,
23 and ultimate BTA determination, is at their discretion. At this time, the Company is

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1 anticipating that EGLE may address this determination during the next NPDES permit
2 cycle, which begins in 2022 at the Campbell complex. EGLE can make BTA
3 determinations for entrainment and impingement collectively, or separately. While the
4 Company cannot predict EGLE's final determination, it is possible, for example, that EGLE
5 could recognize the intakes at Campbell as BTA for entrainment and recognize the
6 impingement as de minimis. In the event that EGLE disagrees with either, and an
7 investment is warranted, the Company anticipates that new studies could be required and
8 possibly requested as early as 2022 to support the NPDES permit renewal process and data
9 collection.

B. EPA's Effluent Limitation Guidelines

11 **Q. Are there other water-related regulations to which Consumers Energy's facilities are**
12 **subject?**

13 A. Yes. In November 2015, the EPA published the final Steam Electric Effluent Guidelines
14 ("SEEG") (also known as the "2015 SEEG Rule"). The 2015 SEEG Rule establishes
15 effluent limitations based on Best Available Technology Economically Achievable
16 ("BAT") for existing sources. The 2015 SEEG Rule excludes oil-fired generation units
17 and units with a nameplate capacity of 50 MW or less.

18 In September 2017, the EPA issued a final rule delaying the initial compliance
19 deadline of the 2015 SEEG Rule from 2018 to 2020. This delay allowed the EPA to
20 conduct a separate rulemaking to revise certain portions of the 2015 SEEG Rule. In
21 October 2020, the EPA published a rule revising the 2015 SEEG Rule ("2020 SEEG
22 Rule"). In the 2020 SEEG Rule, the EPA revised its technology-based effluent limitation
23 guidelines applicable to Flue Gas Desulfurization ("FGD") wastewater and Bottom Ash

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1 (“BA”) transport water, but not for other waste streams covered by the 2015 SEEG Rule.
2 Only BA transport water requirements will be discussed in this testimony, as Consumers
3 Energy does not have any FGD wastewater streams.

4 The 2020 SEEG Rule identifies treatment using high recycle rate systems or dry
5 handling as the BAT basis for control of pollutants discharged in BA transport water.
6 According to the EPA, a high recycle rate system is a recirculating wet ash handling system
7 operated such that it periodically discharges (i.e., purges) a small portion of the processed
8 wastewater from the system. The EPA has found that this technology is available and
9 economically achievable. In contrast to the 2015 SEEG Rule, which required a zero-liquid
10 discharge (i.e., a 100% rate of recycling), the proposed rule allows facilities with a wet ash
11 handling system to discharge up to 10% of the primary active wetted BA system volume
12 on a 30-day rolling average under certain conditions.

13 The 2020 SEEG Rule also adds subcategories for high-flow units, low utilization
14 units, and those that will transition away from coal combustion by 2028 and finalizes
15 requirements that are tailored to facilities in these subcategories. Finally, it establishes the
16 potential for new compliance dates, with approval from EGLE, as discussed later in my
17 testimony.

18 **Q. What BAT technologies have been defined for each waste stream?**

19 A. The 2020 SEEG Rule, in addition to already regulating effluent limitations for several
20 waste streams (such as low volume wastewaters), establishes BAT model technologies for
21 the following waste streams:

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Waste Stream	Existing Source BAT Model Technology
BA Transport Water ²	High Recycle Rate System
Low Utilization EGU's ^{1,2}	Surface impoundments + BMP plan
EGUs permanently ceasing the combustion of coal by 2028 ²	Surface impoundments
FGMC Wastewater	Dry handling
Gasification Wastewater	Evaporation
Nonchemical Metal Cleaning Wastes	No technology chosen – BAT for nonchemical metal cleaning wastewater is reserved

Note: (1) These waste streams are not generated at the Campbell or Karn facilities.
(2) Recently revised/added as part of the 2020 SEEG Rule.

Existing source BAT effluent limitations for waste streams present at Consumers Energy facilities are summarized below:

Waste stream	Present At	Existing Source BAT Effluent Limitations
BA Purge Water	Campbell	Up to 10% allowance of BA purge water, from high recycle rate system, under allowable conditions. TSS Daily Max. = 100 mg/L TSS Monthly Avg. = 30 mg/L
BA Transport Water - EGU's permanently ceasing the combustion of coal by 2028	Karn	TSS Daily Max. = 100 mg/L TSS Monthly Avg. = 30 mg/L
Combustion Residual Leachate	Campbell	TSS Daily Max. = 100 mg/L TSS Monthly Avg. = 30 mg/L
Nonchemical Metal Cleaning Wastes	Campbell Karn	Reserved. No federal limits established. The EPA expects the permitting authority to examine the historical permitting record to determine how discharges of this waste stream should be permitted.

C. Timing – Implementation of the ELG Rule for SEEG

Q. What are the applicability dates for SEEG?

A. The current NPDES permit for the Campbell complex contains a compliance deadline of December 31, 2023, which is based on the 2015 SEEG Rule. Under the 2020 SEEG Rule,

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1 compliance with new BAT limitations for BA transport water does not apply until a date
2 determined by the permitting authority that is “as soon as possible” beginning October 13,
3 2021, but no later than December 31, 2025. On January 11, 2021, Consumers Energy
4 submitted a permit modification to EGLE requesting a compliance deadline extension to
5 December 31, 2025 for the Campbell facility for three primary reasons: (a) to account for
6 adequate planning and preparation of the Company’s compliance with the rule;
7 (b) sufficient time for engineering, design, and procurement; and (c) adequate time for
8 construction and commissioning to ensure full compliance with the revised BAT
9 limitations at Campbell. It is unclear whether EGLE will grant this request, as it is optional
10 on its part.

11 Compliance with new BAT limitations for units ceasing coal combustion by 2028
12 requires submittal of a notice of planned participation (“NOPP”) to EGLE by October 13,
13 2021, with progress reports submitted annually thereafter until unit operation has ceased.

14 **Q. How does Consumers Energy intend to comply with the SEEG rules?**

15 A. At the Campbell complex, the Resource Conservation Recovery Act (“RCRA”) Coal
16 Combustion Residual (“CCR”) Rule requires unlined BA ponds not meeting performance
17 standards to cease accepting CCR in 2018. As a result, Consumers Energy has replaced
18 the unlined BA ponds with concrete tanks at Campbell and will continue to wet sluice BA.

19 Per the 2020 SEEG Rule, BA transport water at Campbell will need to be managed
20 with a high recycle rate closed loop system. A discharge of BA purge water (blowdown
21 stream) is allowable under certain conditions. The volume of BA purge water will be
22 determined by EGLE but cannot exceed a 30-day rolling average of 10% of the primary

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1 active wetted BA system volume. The existing concrete tank system will be retrofitted as
2 part of a high recycle rate closed loop system.

3 **Q. If the PCA is approved as filed, would the Company be able to submit a NOPP for its**
4 **Campbell units?**

5 A. Yes. Because the PCA recommends closing all Campbell units by 2025, the Company
6 would submit a NOPP by October 13, 2021, that would be conditional based on approval
7 of the IRP and approval from the Midcontinent Independent System Operator, Inc.
8 (“MISO”).

9 **D. Capital Investments for 316(b) and SEEG Compliance**

10 **Q. Are there any forecasted future expenditures associated with the Company’s PCA to**
11 **be compliant with these water regulations?**

12 A. No. It is the Company’s belief that any commitment made by the Company to retire the
13 remaining coal units in 2025 would negate the need for investments to comply with 316(b)
14 and SEEG. To date, no discussions regarding such a commitment have been made with
15 EGLE, but it is the Company’s belief that EGLE would be supportive of such. In total,
16 this could reduce compliance costs by more than \$97 million if the IRP is approved and
17 retirement is approved by MISO.

18 **Q. Are there any forecasted future expenditures associated with the Company’s Base**
19 **and/or Alternate Plan to be compliant with these water regulations?**

20 A. Yes. As previously stated, a BTA determination for compliance with Section 316(b) is at
21 the discretion of EGLE but anticipated as part of NPDES permit renewal in 2022. The
22 Company is currently positioning itself to be able to react to EGLE’s final Section 316(b)
23 BTA determination. If entrainment BTA is required then the Company will move forward

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1 with the design and engineering of an alternate intake structure for Campbell Units 1 and
2 2 (i.e., the modification of the offshore intake for all units). If EGLE agrees that the
3 existing cooling water intake at Campbell is BTA for entrainment, but requires the
4 Company to then evaluate impingement, the 2021 budgeted dollars would then be spent on
5 impingement studies. See Exhibit A-22 (HAB-1) for Section 316(b) capital expenditures.

6 For SEEG compliance, the Company conducted additional wastewater studies in
7 2020 to evaluate BA transport water chemistry, the results of which will be used in the
8 design of a high recycle rate system. Additionally, wastewater studies were initiated to
9 determine the level of required wastewater treatment at the Campbell site to maintain
10 compliance with our NPDES permit discharge limits. Preliminary results indicated no
11 further wastewater treatment was required; however, testing will continue through 2021 to
12 account for seasonal and plant variability. In 2021, the Company will continue to collect
13 data to characterize the BA transport water, which will be used to establish a basis of design
14 for the high recycle rate system. The Company will procure engineering services in 2021
15 to design the high recycle rate system. The design will size the system for the expected
16 volume of transport water, how often water will be discharged from the system, verify that
17 non-ash contact water is not commingled with ash contact water, and start identifying
18 equipment modifications needed in the plant. In 2022, the Company will begin the
19 procurement of contractors and equipment such as pumps, piping, a storage tank, and any
20 other equipment that 2021 design work determines is necessary for Campbell's closed loop
21 system. See Exhibit A-23 (HAB-2) for SEEG capital expenditures.

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1 **SECTION III: ENVIRONMENTAL REGULATIONS AND**
2 **COMPLIANCE STRATEGY – WASTE**

3 **Q. What is the purpose of Section III of this testimony?**

4 A. The purpose of Section III is to describe the various environmental regulations related to
5 waste disposal applicable to Consumers Energy that were a consideration in the
6 development of this IRP.

7 **Q. What are the applicable CCR management-related state or federal environmental**
8 **laws, regulations, or rules that were considered when evaluating this IRP?**

9 A. These laws, regulations, and rules include, but are not limited to, 40 CFR Part 257 and 261,
10 Disposal of CCRs from Electric Utilities, published under Subtitle D of the RCRA.
11 Michigan also regulates coal ash disposal under Part 115, Solid Waste Management
12 (Part 115), of the Natural Resources and Protection Act of 1994 (“NREPA”), 1994 PA 451.
13 NREPA includes amendments passed in December 2018 to align state requirements for
14 coal ash landfills and impoundments with the federal rules. Michigan requires permits to
15 construct coal ash landfills and surface impoundments and operating licenses to manage
16 the operation and closure of coal ash landfills and impoundments. The federal rule
17 contrasts this approach by providing a self-implementing framework that necessitates
18 certain requirements must be certified by a qualified professional engineer on a schedule
19 of compliance that is then maintained in an operating record and on a publicly accessible
20 internet site by the owner or operator.

21 **Q. Can you please describe the relevant parts of RCRA as related to CCR management?**

22 A. The EPA finalized the Disposal of Coal Combustion Residuals from Electric Utilities rule
23 in April 2015. This rule establishes requirements for CCR landfills and surface
24 impoundments under Subtitle D of the RCRA, the nation’s primary law for regulating solid

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1 waste. The rules establish minimum national criteria for purposes of determining which
2 CCR solid waste disposal facilities and solid waste management practices pose a
3 reasonable probability of adverse effect on health or the environment under RCRA.
4 Specifically, these rules contain construction and operation standards for applicable CCR
5 units as well as closure and post-closure care standards. They prescribe procedures for
6 corrective action and remediation of environmental impacts related to historical or ongoing
7 operation of applicable CCR units. Those CCR units where environmental impacts have
8 been documented could incur costs for corrective action and remediation regardless of the
9 operational status of either the electric generating units or the specific CCR unit. The rule
10 is considered self-implementing, meaning that affected facilities must certify compliance
11 with the published standards and schedules and enforcement is through citizen suit.

12 **Q. What is the Water Infrastructure Improvements for the Nation Act (“WIIN”)?**

13 A. The WIIN is an infrastructure appropriations bill signed into law in December 2016
14 authorizing water projects restoring watersheds, improving waterways and flood controls,
15 and improving drinking water infrastructure. Section 2301 of this law provides a process
16 to delegate authority for the regulation of coal ash management through a state permit
17 program in lieu of the current enforcement of the federal rules through the RCRA Citizen
18 Suit Authority, or by direct enforcement by the EPA. States may elect to submit an
19 application to demonstrate evidence of a permit program or system of previous
20 authorizations to the EPA for approval. The EPA must either approve the permit program,
21 approve a partial permit program consisting of the elements that are found to be “equivalent
22 to” or “as protective as” the federal rule, or enforce the rule through the enforcement
23 authority granted under the WIIN Act unless the EPA develops a permit program through

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1 an appropriation. The EPA published a draft federal permit program (85 FR 9940) for
2 public notice and comment in 2020, but publication of a final rule is still pending. The
3 State of Michigan passed its own CCR state permitting program into law in December
4 2018, and subsequently submitted evidence of a state permit program to the EPA in
5 February 2020 and continues to review the application in consultations with the EPA
6 pending a completeness determination. In the interim, standards of the federal rule may be
7 enforced through direct enforcement by the EPA or through the Citizen Suit Authority.

8 **Q. How does Consumers Energy intend to comply with management of CCRs under the**
9 **RCRA and Part 115?**

10 A. Consumers Energy has certified compliance with the plans and reports required by RCRA,
11 including initiating groundwater monitoring programs and closure for unlined CCR surface
12 impoundments within the prescriptive 42-month self-implementing compliance schedule.

13 The approval of a State CCR permitting program would allow EGLE to issue
14 permits under the authority of the solid waste management law (Part 115 of NREPA) to
15 regulate compliance schedules and activities for CCR landfills and surface impoundments
16 in lieu of the self-implementing compliance requirements and schedules under RCRA.

17 The Karn BA pond ceased operation in June 2018 and all CCRs were removed by
18 October 2019. EGLE accepted documentation of removal of CCR from the pond in
19 December 2020. The former unlined BA pond was replaced with a composite lined
20 impoundment meeting the RCRA requirements and was put into service in June 2018. The
21 approximately 171-acre Karn landfill completed closure activities through completion of
22 construction for the final cover system in December 2019. EGLE accepted the certification
23 of all phases of final closure in June 2020.

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1 The Weadock landfill will continue to operate for the life of the Karn facility. As
2 a result of the RCRA Rule, beginning in 2015, and continuing through 2016, efforts
3 commenced modify the existing outlet structure and systematically draining ponded water
4 out of low areas and backfilling with dry CCR to promote subgrade stabilization and
5 surface drainage into perimeter ditches in anticipation of constructing the final cover. The
6 modifications of the existing outlet structure to prevent surface run-on to the landfill and
7 allow for gravity drainage of the interior of the disposal area, thus minimizing infiltration
8 into the landfill and improving the subgrade to place the final cover upon construction. In
9 2018, a soil-bentonite slurry wall extension completing the full enclosure of waste footprint
10 at the Weadock landfill was constructed, certified, and approved by EGLE. Completing
11 the construction of the slurry wall provided complete containment of CCR materials as
12 well as controls for potential sources of groundwater impacts. In 2020, Consumers Energy
13 completed removal of CCR from the Weadock BA pond. EGLE subsequently accepted
14 the documentation report confirming removal of the CCR in December 2020 in
15 conformance with the EGLE-approved work plan.

16 In 2017, the Campbell facility completed construction to replace unlined BA ponds
17 with concrete tanks. As a result, unlined BA ponds and an NPDES treatment pond were
18 closed, so the electrical generating units will be able to continue wet sluicing BA to an
19 engineered system that meets the design standards of RCRA. The concrete tanks provide
20 a cost-effective, longer-term replacement to the CCR storage and NPDES ponds, enhance
21 ground water protection and maintain the ability to beneficially use the BA.

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1 **Q. What are the capital investments specifically related to RCRA and Part 115**
2 **compliance?**

3 A. Consumers Energy has completed the capital investments necessary for compliance with
4 RCRA and state requirements. Additional capital for remediation systems will become
5 their own assets (not an improvement to the disposal asset) and will be managed as an asset
6 with Cost of Removal (“COR”) obligations separate from the usable life of the landfill
7 and/or surface impoundment. Future capital and/or O&M costs associated with RCRA and
8 Part 115 can be found in the workpapers of Company witness Kapala (see Workpapers
9 WP-NJK-1, 8, 9, 10, 22, 23, 24, and 25).

10 **Q. Are there any CCR management-related expenditures that would be avoidable under**
11 **the PCA?**

12 A. Most of the CCR-related expenditure, both capital and COR, are unavoidable regardless of
13 whether or not the units continue to operate since those costs are invested to bring those
14 disposal units to closure; however, there are a few avoided costs that could be realized. For
15 example, the Campbell site’s avoided costs could be avoided due to the generation of less
16 CCRs. This would likely reduce the number of cells and total area needed for closure. In
17 Workpapers WP-NJK-22 and WP-NJK-24, Company witness Kapala estimates nearly
18 \$11.3 million in avoided costs related to additional cell construction and permitting at the
19 Campbell site for the period from 2023 through 2027.

20 **Q. Are there any new applicable environmental regulations the Company expects to be**
21 **compliant with as a result of the PCA?**

22 A. No. The Company’s PCA eliminates coal-fired generation by 2025. In doing so, this
23 essentially eliminates any potential future environmental regulatory burden associated with

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1 the Company's coal-fired generating units. At the Campbell site, it also minimizes current
2 compliance costs since that landfill builds smaller cells and early cessation would result in
3 fewer future cells constructed and less final cover to be installed. That said, the Company
4 does expect future regulations affecting its natural gas-fired generating units; however, no
5 such regulations have been released yet, and the Company cannot speculate as to their
6 requirements at this time.

7 **SECTION IV: IRP EMISSIONS OUTLOOK**

8 **Q. What is the purpose of Section IV of this testimony?**

9 A. The purpose of Section IV is to describe the various air emissions impact associated with
10 the Company's PCA and various scenarios and sensitivities that were analyzed and
11 considered as part of this IRP filing.

12 **A. Scenarios and Sensitivities**

13 **Q. What scenarios and sensitivities were included in the development of the modeling
14 used in the IRP?**

15 A. The scenarios and sensitivities modeled in the Company's IRP were defined within the
16 Michigan Integrated Resource Planning Parameters ("MIRPP") document, pursuant to
17 Public Act 341 of 2016, Section 6(t). The major input assumptions are summarized in
18 Company witness Walz's Exhibit A-4 (STW-1), MPSC-Required Scenarios and
19 Sensitivities.

20 **Q. Were any other scenarios or sensitivities evaluated, in addition to those required by
21 the Commission?**

22 A. Yes. Three additional scenarios were added to the Company's IRP. The majority of input
23 assumptions matched those of the Business as Usual ("BAU"), Emerging Technologies

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1 (“ET”), and Environmental Policy (“EP”) scenarios, with one single input variable
2 modified, which was the assumed cost of natural gas. The major input assumptions are
3 summarized in Company witness Walz’s Exhibit A-5 (STW-2), Consumers
4 Energy-Specific Scenarios. The Company has abbreviated the names of the eight scenarios
5 as follows:

- 6 • BAU AEO – BAU, built on required gas prices from the U.S. Energy
7 Information Administration’s (“EIA”) 2017 Annual Energy Outlook (“AEO”)
8 reference case;
- 9 • EP AEO – EP, built on required gas prices from the EIA’s 2017 AEO reference
10 case;
- 11 • ET AEO – ET, built on required gas prices from the EIA’s 2017 AEO reference
12 case;
- 13 • CO₂ Reduction – this has underlying assumptions like the EP AEO, but with
14 1.5% load growth, CO₂ reduction targets by 2025 and the PCA as the basis of
15 the new resource expansion plan;
- 16 • BAU CE – BAU, built on Consumers Energy’s gas price projections;
- 17 • EP CE – EP, built on Consumers Energy’s gas price projections;
- 18 • ET CE – ET, built on Consumers Energy’s gas price projections; and
- 19 • AT – Advanced Technologies (“AT”), using the EIA’s 2020 AEO high gas and
20 oil supply case.

21 **Q. Did the Company evaluate any scenarios or sensitivities that assumed a price on**
22 **carbon?**

23 A. Yes. The Company performed a deterministic risk analysis on the effects of a carbon price
24 on a resource portfolio. Company witness Anna K. Munie discusses the analysis in more
25 detail.

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1 **Q. Please describe the range of carbon prices that were evaluated in the risk analysis.**

2 A. Consumers Energy did not include a carbon price in any of its base scenario or sensitivity
3 modeling. For the purposes of evaluating the effects of a carbon price on a resource
4 portfolio, the Company developed a Base, Medium, and High carbon price forecast and
5 then modeled identified resource portfolios against all three forecasts to evaluate the effects
6 of a range of potential carbon prices. The Base forecast utilized is the IHS Markit 2019-
7 North American Power Market Outlook², the High forecast is the EIA 2020 AEO, and the
8 Medium forecast was developed by the Company as a blend of the Base and High forecast
9 in regard to starting year and \$/Short Ton cost. A visual representation of the range of
10 carbon prices evaluated can be found in Exhibit A-24 (HAB-3).

11 **Q. How did the Company select the carbon pricing that was used in the risk analysis?**

12 A. At this time, no regulatory framework currently in law includes any carbon pricing or
13 emission restrictions applicable to Consumers Energy, such as a cap-and-trade or carbon
14 tax program; therefore, the Company's base assumption assumes no price on carbon.
15 Stakeholder input and prudence recommends modeling a price on carbon. The Company
16 determined it would be prudent to run a risk analysis which includes a low, moderate, and
17 high carbon price. It was recommended that IHS Markit carbon price forecast be used as
18 the low carbon price, the Consumers Energy Adjusted carbon price forecast be used as the
19 moderate carbon price, and the EIA High carbon forecast be used as the high carbon price.

20 IHS Markit assumes United States federal carbon policy takes the form of a price
21 on power plant CO₂ emissions beginning in 2030. At the time the carbon price analysis

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1 was conducted, the outcome of the 2020 presidential election was not known. Thus, at that
2 time, the Company had to consider two situations in an effort to try to determine the
3 likelihood of future carbon legislation. First, if President Trump was to win re-election in
4 2020, the Company felt it was likely there would be no near-term carbon legislation and,
5 thus, the 2024 election would then determine the outcome of carbon legislation. This
6 scenario would make a price on carbon in 2030 appropriate and was selected as the
7 Company's our low carbon price forecast.

8 Alternatively, if President Trump was to lose re-election in 2020, the Company felt
9 there was a higher likelihood of proposed legislation and a price on carbon by 2025. As a
10 result, the Company assumed the same trend in carbon prices as the IHS Markit forecast
11 but accelerated the start to 2025. This Consumers Energy-adjusted IHS Markit forecast
12 became the medium carbon price forecast.

13 For the high forecast, the Company selected the EIA forecast. In March 2020, EIA
14 published a report in which they evaluated three pricing scenarios wherein an
15 economy-wide implementation of a carbon fee went into effect in 2021, increasing 5% (in
16 real dollars) per year and reach \$62, \$103, and \$144 per metric ton by 2050. This
17 March 2020 report from EIA was the latest such price forecast available at the time the
18 carbon price analysis was conducted.

19 **Q. What were the results of the risk assessment modeling of the carbon prices?**

20 A. Company witness Munie provides the results of the analysis on the optimal plans, PCA,
21 and Alternate Plan on Exhibit A-21 (AKM-1), page 5.

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1 **B. Projected Emissions**

2 **Q. Please provide the annual emission projections for the first five years of the IRP study**
3 **period differentiating between existing and new resources for the PCA for the**
4 **following:**

5 **i) Tons of SO₂;**

6 **ii) Tons of NO_x;**

7 **iii) Tons of CO₂;**

8 **iv) Tons of particulate matter (“PM”); and**

9 **v) Pounds of Hg.**

10 **A. Please refer to Exhibit A-25 (HAB-4).**

11 **Q. Please provide the total projected emissions of the items listed below through the**
12 **study period for the Company’s PCA, as well as the scenarios identified within the**
13 **MIRPP (three scenarios BAU-AEO, EP_AEO, ET_AEO) as approved in Case No. U-**
14 **18418, or modified by Commission order:**

15 **i) Tons of SO₂;**

16 **ii) Tons of NO_x;**

17 **iii) Tons of CO₂;**

18 **iv) Tons of PM; and**

19 **v) Pounds of Hg.**

20 **A. Please refer to Exhibit A-26 (HAB-5).**

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1 **Q. Please provide a comparison of total projected carbon emissions (CO₂) under each**
2 **scenario and sensitivity analyzed, including quantifying the CO₂ emissions projected**
3 **in each sensitivity as a percentage of the CO₂ emissions presented in the BAU case.**

4 A. Please refer to Exhibit A-27 (HAB-6).

5 **C. Emissions Accounting**

6 **Q. Please describe what is meant by the term “Emissions Accounting.”**

7 A. There are three main generation categories from which the Company serves its load:
8 (i) owned generation; (ii) bilateral Power Purchase Agreements (“PPAs”); and
9 (iii) purchases from MISO. There are times when Consumers Energy’s available
10 generation, both owned and PPAs, exceeds its load, and the Company sells the excess
11 generation into the MISO market. Conversely, there are times when Consumers Energy’s
12 load exceeds available generation, and the Company needs to purchase from the MISO
13 market. Properly quantifying both the historic and projected emissions associated with the
14 electric generation used to serve the Company’s customer load is an important component
15 to projecting emissions in this IRP, as well as the Company’s Clean Energy Goal. This
16 issue is particularly important for the MISO market purchases because the Company does
17 not know the generation source and its fuel type (e.g., coal, natural gas, or renewable) used
18 to generate that energy; the Company is buying a generic megawatt-hour.

19 **Q. Please describe the Company’s emissions accounting methodology.**

20 A. The Company has chosen the “specified portfolio” approach developed by the Electric
21 Power Research Institute (“EPRI”),³ which accounts for emissions of owned and operated
22 resources, and any specified wholesale electricity procurement, plus emissions associated

³ Please see <https://www.epri.com/research/products/3002015044> for more information on this methodology.

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1 with bilateral PPAs, and purchases from the energy spot market using a system average
2 emission rate. Please refer to Exhibit A-28 (HAB-7) for additional details and assumptions
3 regarding the Company's chosen emissions accounting methodology.

4 **SECTION V: Environmental Justice Analyses**

5 **Q. What is the purpose of Section V of this testimony?**

6 A. The purpose of Section V is to discuss how the Company considered environmental justice,
7 including public health, when evaluating the Company's PCA.

8 **Q. Did the Company use an environmental justice screening tool to identify any**
9 **potentially vulnerable areas?**

10 A. Yes. The Company used the EPA's EJSCREEN tool (<https://www.epa.gov/ejscreen>) to
11 provide an initial screen for vulnerable areas. Analysis was performed using an impact
12 area of 2 km and 10 km as shown in Exhibit A-29 (HAB-8). The Company considered any
13 facilities that had an ~~E~~environmental ~~or demographic~~Justice (EJ) "~~index~~indicator" examined
14 by the EJSCREEN above the 75th percentile to be a potentially vulnerable community. Our
15 EJSCREEN analysis shows that none of Consumers Energy's existing fossil generation are
16 located in areas above the 75th percentile for any ~~indicator-EJ index~~ at either the 2 km or
17 10 km areas. That said, it identified three facilities that the Company is considering
18 purchasing as part of the PCA that were above the 75th percentile for at least one
19 ~~indicator~~EJ index: Dearborn Industrial Generation ("DIG"), Covert Generating Facility
20 ("Covert"), and Kalamazoo River Generating Station ("Kalamazoo River").

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1 **Q. Why did the Company decide on using the 75th percentile as an indicator for further**
2 **consideration, analysis, or outreach?**

3 A. The EPA's guidance on the use of the EJSCREEN tool suggested using the 80th percentile
4 as the starting point for the purpose of identifying geographic areas that may warrant
5 further consideration, analysis, or outreach. The use of an initial filter promotes
6 consistency and provides a pragmatic first step for EPA programs and regions when
7 interpreting screening results. After discussions with EGLE, the Company decided to err
8 on the side of conservatism and opted to use the 75th percentile for identification of
9 potential vulnerable areas.

10 **Q. Did the Company perform any additional analysis related to the Covert, DIG, and**
11 **Kalamazoo River facilities related to PM_{2.5}?**

12 A. Yes. Because these facilities are located in potential vulnerable communities, the
13 Company performed additional analysis to determine if the planning model, Aurora,
14 suggested a material increase in their projected PM emissions in the PCA compared to the
15 Alternate Plan.

16 **Q. What additional analysis did the Company perform to determine if there was a**
17 **material increase in the PM_{2.5} emissions from the facilities identified at or above the**
18 **75th percentile?**

19 A. The sites that warranted the additional analysis were facilities that the Company is looking
20 to acquire in the PCA. It should be noted that the Company only forecasts filterable PM,
21 not PM_{2.5}. The filterable PM emission rate and the PM_{2.5} emission rate for gas-fired
22 generating facilities are assumed to be equal for these facilities.

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1 To determine whether a material increase in emissions would occur due to the PCA,
2 the Company analyzed whether the purchase of these facilities would result in an increased
3 dispatch, and subsequent increase in PM emissions. To do this analysis, the Company
4 compared how those units were dispatched in the Aurora model for the Alternate Plan and
5 the PCA under the BAU CE scenario assumptions. On average, the Covert facility's
6 projected heat input and PM emissions each increased by 6.6%. The DIG facility's
7 projected heat input increased by 1.7% and the projected PM emissions increased by 1.6%.
8 The Kalamazoo River facility was projected to dispatch only a small fraction of time over
9 the same time period and thus it was determined that the sample size was too small to
10 provide reasonable results.

11 **Q. Does the Company consider the projected increase in PM emissions shown by this**
12 **analysis to be a material increase?**

13 A. No. The Company considers any increase that is above any typical year-to-year variability
14 to be material. Since the projected change in heat input aligned with the projected change
15 in PM emissions, and since historic heat input data is readily available from the Clean Air
16 Market Division website, a look at historic heat input variability was used to determine
17 materiality. The historic annual heat input variability between 2016 and 2020 ranged from
18 +2% to +7% for Covert. The historic annual heat input variability ranged from -8% to
19 +9% for DIG between 2016 and 2020. Since their average projected PM emission increase
20 percentages fell within their normal range of year-to-year variability, it was determined
21 that the average projected increases were not material. In other words, if the Company
22 acquires the DIG and Covert facilities, it is expected that those facilities will operate at

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1 levels similar to their operation before the Company acquired them. This suggests that the
2 Company's PCA will not materially increase the emissions due to its acquisition of them.

3 **Q. Did the Company examine whether the PCA will have any impacts on any**
4 **nonattainment areas within the Company's electric service territory, or in the areas**
5 **surrounding the facilities contemplated to be purchased under the PCA?**

6 A. Yes, it did.

7 **Q. What is a nonattainment zone?**

8 A. A nonattainment zone, or nonattainment area, is any area that does not meet the national
9 primary or secondary ambient air quality standard for a National Ambient Air Quality
10 Standard ("NAAQS"). The NAAQS are health-based pollution standards set by the EPA.

11 **Q. Does the Company currently own any generating facility that is located within**
12 **nonattainment zone?**

13 A. No. A map of Michigan's nonattainment zones can be found here:
14 [https://www.michigan.gov/documents/deq/deq-aqd-aqe-](https://www.michigan.gov/documents/deq/deq-aqd-aqe-mi_attainment_status_map_407842_7.pdf)
15 [mi_attainment_status_map_407842_7.pdf](https://www.michigan.gov/documents/deq/deq-aqd-aqe-mi_attainment_status_map_407842_7.pdf).

16 **Q. Are any of the generating facilities that the Company is proposing to purchase as part**
17 **of the PCA located in nonattainment zones?**

18 A. Yes. The DIG facility is located in Wayne County and is in an ozone nonattainment area
19 and a SO₂ nonattainment area.

20 **Q. Does the PCA negatively impact the nonattainment zones that DIG is located in?**

21 A. No. As discussed above, the Company's modeling shows that DIG is projected to dispatch
22 in similar fashion as it would have if the Company had not purchased it; therefore, no

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1 additional environmental impacts are anticipated. In addition, the Company will fully
2 comply with all EGLE requirements related to these nonattainment zones.

3 **Q. Would the Company be required to obtain any additional air or water-related**
4 **permits for the facilities contemplated to be purchased under the PCA?**

5 A. No. The Company would not be required to obtain any additional air and/or water permits
6 due to the purchase of these facilities. The facilities' existing permits would simply need
7 an administrative change transferring them into the Company's name. The Company will
8 comply with all permits currently in place.

9 **Q. Did the Company qualitatively assess different build plans to identify the potential**
10 **impacts of the PCA on the identified vulnerable communities?**

11 A. Yes, the Company examined, on a qualitative basis, the potential impacts of these facilities
12 on various environmental factors such as water quality, water use, water discharge, waste
13 disposal, air emissions, and public health.

14 **Q. What did this analysis show?**

15 A. The analysis showed that the projected heat input of the units in vulnerable communities
16 was similar between the Alternate Plan and the PCA and, thus, there is no projected change
17 in impact from these facilities. In addition, the PCA has a significant positive impact on
18 water, waste, air emissions and public health for the state of Michigan as a whole.

19 Accelerating the retirements of the Company's remaining coal-fired power plants
20 will dramatically improve Michigan's environment by:

- 21 • Reducing CO₂ emissions by more than 63 million tons from 2023 through 2040,
22 a major reduction in this greenhouse gas;
- 23 • Nearly eliminating emissions from criteria air pollutants such as SO₂, NO_x, and
24 PM from the Company's generating fleet;

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- 1 • Eliminating emissions from hazardous air pollutants such as Hg from the
2 Company's generating fleet;
- 3 • Reducing non-consumptive water use by more than 99% which equates to more
4 than 220 billion gallons each year between 2023 and 2040 for plant cooling
5 purposes; and
- 6 • Avoiding more than 3 billion cubic yards of coal ash waste from 2023 through
7 2040 and completely eliminating the generation of coal ash by 2025.

8 **Q. As part of its environmental justice analysis, did the Company use any health benefits
9 screening tools to evaluate the PCA's impact on public health?**

10 A. Yes. The Company utilized the EPA's Benefits-Per-Ton approach to estimate the health
11 benefits associated with emissions reduction.⁴ This tool offers potential health benefits
12 from two separate studies: Kewski et al. (2009) mortality study and Lepeule et al. (2012)
13 mortality study.

14 **Q. How did the Company evaluate the potential health benefits?**

15 A. The Company evaluated the potential health benefits from both the Kewski et al. (2009)
16 mortality study and Lepeule et al. (2012) mortality study while also utilizing both the 3%
17 and 7% discount rates. While these studies estimate health cost savings in 2025 and 2030,
18 the Company extrapolated the potential savings over the 2023 through 2040 timeframe.
19 The health cost savings per ton were then multiplied by the delta in emissions between the
20 Alternate Plan and PCA under the BAU CE scenario assumptions.

21 **Q. What were the results of the health cost savings analysis?**

22 A. This analysis shows that the SO₂ emissions reductions associated with the PCA will
23 produce health cost benefits in the range of \$403 million to \$875 million in 2025, \$326
24 million to \$731 million in 2030, and \$9.8 billion to \$11.2 billion for the 2023-2040

⁴ https://www.epa.gov/sites/production/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf

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1 period overall. The NO_x emissions reductions associated with the PCA will produce
2 health cost benefits in the range of \$35 million to \$78 million in 2025, \$22 million to \$48
3 million in 2030, and \$557 million to \$1.1 billion for the 2023 through 2040 period
4 overall. The PM emissions reductions associated with the PCA will produce health cost
5 benefits in the range of \$26 million to \$56 million in 2025, \$1 million to \$3 million in
6 2030, and \$358 million to \$837 million for the 2023 through 2040 period overall.
7 Exhibit A-30 (HAB-9) shows the range of potential health benefits per pollutant over the
8 study period, with the 3% discount rate.

9 **SECTION VI: CORPORATE CLEAN ENERGY GOALS**

10 **Q. What is the purpose of Section VI of this testimony?**

11 A. The purpose of Section VI is to describe the various corporate clean energy goals of
12 Consumers Energy that were considerations in the development of this IRP.

13 **Q. Does the Company have any environmental goals?**

14 A. Yes. Consumers Energy operates under a triple bottom line of people, planet, and
15 prosperity. The “planet” element of the triple bottom line represents the Company’s
16 commitment to protect the environment. This commitment extends beyond compliance
17 with state and federal environmental laws to include voluntary sustainability efforts. The
18 Company also considers climate change and other environmental risks in the Company’s
19 strategy development and business planning.

20 Through 2020, the Company’s actions have reduced carbon emissions by more than
21 35% since 2005, reduced water usage by more than 30% since 2012, and avoided over
22 1.5-million cubic yards of landfill disposal since 1992. Additionally, Consumers Energy
23 has reduced its SO₂, NO_x, PM, and Hg emissions by approximately 90% since 2005. These

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1 accomplishments have encouraged the Company to do more. In 2018, the Company also
2 announced new five-year environmental goals for Michigan water, waste, and land,
3 including:

- 4 i. Water: save 1 billion gallons of water;
- 5 ii. Waste: reduce waste to landfills by 35%; and
- 6 iii. Land: enhance, restore, or protect 5,000 acres of land in Michigan.

7 In February 2020, Consumers Energy announced a goal of achieving net-zero
8 carbon emissions from its electric business by 2040. This goal includes not only emissions
9 from the Company's owned generation, but also emissions from the generation of power
10 purchased through long-term PPAs and from the MISO energy market. To the extent that
11 Consumers Energy cannot fully eliminate its emissions by 2040, it will consider offsetting
12 them through alternative measures, which may include carbon sequestration, methane
13 emission capture, large-scale tree planting, or other measures. At this time, however, the
14 PCA does not assume or plan for the use of carbon offsets. These goals represent
15 Consumers Energy's further commitment to leave Michigan better than we found it.

16 **Q. Why did the Company decide to commit to such an aggressive clean energy goal?**

17 A. Consumers Energy is committed to creating a cleaner, more sustainable energy future for
18 the state of Michigan. The Company is committed to this because: 1) customers and
19 shareholders are increasingly asking for a reduction in the environmental impact of
20 Company operations, with forward progress in this area appropriately balanced with cost;
21 2) the economics associated with decreasing the Company's environmental footprint have
22 changed considerably making cleaner energy options the economic choice; and 3) it's
23 simply the right thing to do for Michigan.

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1 **Q. How does the Company’s PCA compare to other greenhouse gas reduction initiatives**
2 **such as the MI Healthy Climate Plan, the Intergovernmental Panel on Climate**
3 **Change (“IPCC”) 1.5-degree Scenario and President Biden’s Greenhouse Gas**
4 **Reduction Target?**

5 A. The MI Healthy Climate Plan is an executive order issued by the Governor of Michigan
6 and outlines goals for Michigan to achieve economy-wide net-zero greenhouse gas
7 emissions and to be carbon neutral by 2050. The executive order aims for a 28% reduction
8 below 2005 levels of greenhouse gas emissions by 2025. To date, the Company has already
9 surpassed the 28% reduction milestone for its owned electric generation. As shown on
10 Exhibit A-31 (HAB-10), the PCA is projecting a 53% reduction below 2005 levels by 2025
11 with the inclusion of all generating sources used to serve the Company’s customer electric
12 load. In addition, the Company has set a goal to achieve net-zero carbon emissions from
13 its electric business by 2040, which is 10 years earlier than the MI Healthy Climate Plan.

14 In the 2015 Paris Agreement, the countries participating in the United Nations
15 Framework Convention on Climate Change agreed to hold the rise in global average
16 temperature “well below 2 degrees Celsius above pre-industrial levels and to pursue efforts
17 to limit the temperature increase even further to 1.5 degrees Celsius.” Per the Summary
18 for Policymakers IPCC report on the 1.5-degree scenario,⁵ global CO₂ emissions have to
19 decline by about 40 to 60% by 2030 from 2010 levels, and reach net-zero by 2050, to stay
20 within the 1.5-degree scenario. As shown on Exhibit A-30 (HAB-9), the Company’s PCA
21 is well below the 2030 1.5-degree scenario target which, for illustrative purposes, was set
22 at 50% below the Company’s 2010 carbon emissions for all sources. In addition, the

⁵ <https://www.ipcc.ch/sr15/chapter/spm/>

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1 Company has set a goal to achieve net-zero carbon emissions from its electric business by
2 2040, which is 10 years earlier than the IPCC 1.5-degree scenario.

3 In April 2021, President Biden announced a new National Determined Contribution
4 target for the United States under the Paris Agreement to achieve a 50 to 52% reduction
5 from 2005 levels in economy-wide net greenhouse gas pollution by 2030. Again, the
6 company's PCA is projected to be well below this target with a 62% reduction in carbon
7 emissions by 2030 from 2005 levels.

8 **Q. Does this conclude your direct testimony?**

9 **A. Yes.**

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of)
CONSUMERS ENERGY COMPANY)
for Approval of an Integrated Resource Plan)
under MCL 460.6t, certain accounting)
approvals, and for other relief.)
_____)

Case No. U-21090

REBUTTAL TESTIMONY

OF

HEATHER A. BREINING

ON BEHALF OF

CONSUMERS ENERGY COMPANY

November 2021

HEATHER A. BREINING
REBUTTAL TESTIMONY

1 **Q. Please state your name and business address.**

2 A. My name is Heather A. Breining, and my business address is 1945 W. Parnall Road,
3 Jackson, Michigan 49201.

4 **Q. Are you the same Heather A. Breining who previously presented direct testimony in**
5 **this case?**

6 A. Yes.

7 **Q. What is the purpose of your rebuttal testimony?**

8 A. I will rebut the analysis and recommendation of Michigan Public Service Commission
9 (“MPSC” or the “Commission”) Staff (“Staff”) witness Kevin S. Krause regarding the
10 Clean Electricity Performance Program (“CEPP”). I will also rebut an emissions analysis
11 provided by Kelsey Bilsback on behalf of The Environmental Law & Policy Center, The
12 Ecology Center, The Union of Concerned Scientists and Vote Solar (collectively,
13 “ELPC”). In addition, I will be rebutting environmental justice (“EJ”) analysis
14 recommendations provided by ELPC witnesses Alison Waske Sutter and Elena Krieger.

15 **Q. Have you prepared any exhibits in conjunction with your rebuttal testimony?**

16 A. Yes. I am sponsoring the following exhibits:

17 Exhibit A-102 (HAB-11) 2019 Actual Air Emissions and Emission Rates.

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REBUTTAL TESTIMONY

1 **REBUTTAL OF STAFF WITNESS KRAUSE**

2 **Q. Mr. Krause’s testimony discusses “potential federal legislation [Clean Electricity**
3 **Performance Program (CEPP)] that could be part of the currently developing federal**
4 **budget reconciliation”, and the “potential ramifications” as part of this Integrated**
5 **Resource Plan (“IRP”). Specifically, beginning on page 9, line 1, of his direct**
6 **testimony, Mr. Krause discusses his analysis of Consumers Energy Company’s**
7 **(“Consumers Energy” or the “Company”) position under a House of Representatives**
8 **version of the CEPP. What is the conclusion of Mr. Krause’s analysis and what is**
9 **Staff’s recommendation?**

10 **A.** Beginning on page 9, line 2, of Mr. Krause’s direct testimony, Mr. Krause concludes that
11 in 2023 the Company would fall short of the CEPP target of a 4% increase in clean
12 electricity generation between the baseline years of 2019-2020 and first year of compliance
13 in 2023, thus resulting in a fine of at least \$200 million dollars for that year. In addition,
14 Staff recommends that the Commission specifically state that penalties that could
15 potentially arise from future legislation are not automatically pre-approved for recovery
16 from customers based on the approval of the plan in the instant case.

17 **Q. Do you agree with this recommendation?**

18 **A.** No. Mr. Krause’s position is highly speculative at this time. As a result, it would be
19 inappropriate and premature for the Commission to adopt Staff’s recommendations and
20 take a position in this proceeding on either the Company’s Proposed Course of Action
21 (“PCA”) performance under a CEPP or any potential rate recovery questions. In fact, it is
22 worth noting the status of the CEPP at this time. Specifically, the CEPP was included in
23 one version of a draft piece of legislation, but that draft legislation has neither been voted

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1 on by either body of Congress yet nor signed into law. Thus, as Mr. Krause acknowledges,
2 the CEPP's language is very much in flux. Critically, the latest versions of the legislation
3 do not even include a CEPP.

4 Similarly, the legislation, if passed by Congress and signed by President Biden,
5 would require the Department of Energy to conduct rulemaking proceedings to provide
6 more detail on the rules governing the CEPP. Because this proposed legislation has not
7 yet been passed and, as a result, we have not seen proposed rules related to the proposed
8 legislation, Staff's analysis, which is speculative, has little relevance in this proceeding.

9 Given this high degree of speculation and uncertainty, it is premature, unnecessary
10 and contrary to good public policy for the Commission to adopt Staff's recommendation
11 and/or take a position at this time. The Commission will have ample opportunity to
12 consider the CEPP, if any, is passed and rules are published, when the Company brings
13 forth a proposal addressing the matter in a future proceeding.

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REBUTTAL OF ELPC WITNESS BILSBACK

1
2 **Q. Beginning on page 9, line 4, and continuing through page 13 of the direct testimony**
3 **of ELPC witness Bilsback, Ms. Bilsback describes an analysis that she performed**
4 **regarding pollutants emitted from coal plants in the Company’s IRP, the magnitude**
5 **of the pollutants, along with which plants have the highest emission rates.**
6 **Ms. Bilsback concludes that the Dearborn Industrial Generation (“DIG”) gas plant**
7 **has higher annual emissions than the D.E. Karn (“Karn”) coal plant for all pollutant**
8 **types analyzed except nitrogen oxides (“NOx”) and carbon dioxide (“CO₂”). Do you**
9 **agree with Ms. Bilsback’s analysis and conclusion?**

10 **A.** No. As an initial matter, while Ms. Bilsback’s testimony repeatedly indicates that the
11 models she used don’t capture the direct impacts of power plants, including human health
12 impacts, she goes outside of the information provided in her own models and testifies that
13 the Company’s power plants “have health-damaging emissions.” Then, based on the
14 information provided in her testimony, Ms. Bilsback’s data analysis and resulting
15 conclusions appear to have been derived from inconsistent reporting bases and use
16 inaccurate data for many pollutants. Instead of utilizing the more appropriate publicly
17 available, self-reported data, Ms. Bilsback appears to have used less reliable generic
18 emission factors when arriving at the emission rates for multiple pollutants across several
19 units/plants. Once higher quality self-reported data is used in the emissions analysis, it is
20 evident that Karn reported higher emission tonnages for PM_{2.5}, volatile organic
21 compounds (VOCs), and NO_x, whereas the DIG facility reported higher emissions for
22 sulfur dioxide (“SO₂”) and CO₂. Please refer to Exhibit A-102 (HAB-11).

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1 Additionally, capacity factors played into the differences and render Ms. Bilsback's
2 comparisons less meaningful. On a heat input basis relative to the maximum hourly heat
3 input rating listed in publicly available Part 75 data, Karn Units 1 and 2 had a combined
4 capacity factor of 38.1% in 2019. In contrast, the DIG facility had a combined capacity
5 factor of 56.8% in 2019. When you account for the differences in capacity factor in 2019,
6 Karn SO₂ emissions at a capacity factor similar to that of DIG would have been higher and
7 CO₂ emissions would have been similar to DIG's CO₂ emissions. This is in alignment with
8 the normalized SO₂ and CO₂ emission rates on a US Tons/mmBtu basis as presented in
9 Table 2 of Ms. Bilsback's direct testimony, showing that Karn emitted SO₂ and CO₂ at
10 higher normalized emission rates than DIG in 2019.

11 It is also worth noting that DIG's CO₂ emissions are substantially higher than a
12 normal natural gas-fired plant due to the firing of Blast Furnace Gas ("BFG") from an
13 adjacent steel mill in their boilers. BFG has a high carbon monoxide ("CO") content and
14 a low heating value of 90-150 Btu/scf, compared to natural gas around 1,050 Btu/scf. As
15 a result, a much larger volume of BFG must be fired to get the same heat input. If the BFG
16 was not burned in the boilers, it would simply be flared into the atmosphere. In this case,
17 the overall SO₂ emissions would essentially remain the same, but the overall CO₂ emissions
18 and other pollutants would be higher; DIG would then be firing natural gas in their boilers
19 to make up the lost heat content. Thus, extracting the useful energy from the BFG waste
20 gas stream from the adjacent steel mill is viewed as an environmental benefit.

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REBUTTAL TESTIMONY

1 **REBUTTAL OF ELPC WITNESS SUTTER**

2 **Q. Beginning on page 10, line 14, of the direct testimony of ELPC witness Sutter**
3 **(Sustainability and Performance Management Officer at the City of Grand Rapids),**
4 **Ms. Sutter claims that Consumers Energy has not provided the City of Grand Rapids**
5 **with the information necessary to model future carbon emissions. She further states**
6 **that publicly available information to date has only included carbon emissions factors**
7 **for Consumers Energy’s asset owned generation. Do you agree with Ms. Sutter’s**
8 **assertion?**

9 A. No. In the 2018 IRP the Company only focused on Consumers Energy’s owned generation.
10 However, for this filing, the Company took a more holistic approach and included all
11 generation sources used to serve customer load, including emissions from owned
12 generation, power purchase agreements, and from the Midcontinent Independent System
13 Operator, Inc. market purchases. This analysis, including the environmental models for
14 each scenario and sensitivity analyzed, was provided as part of the initial filing of this case.
15 Please refer to my Working Models¹. Within the HAB Working Models folder are
16 subfolders for each scenario which contain the working models for each sensitivity that
17 was evaluated under that particular scenario. Each working model has the same tab labels
18 and structure. The projected carbon intensity ratio, in tons per megawatthour, for each
19 scenario and sensitivity evaluated can be found in row 34 on the tab labeled *Specified*
20 *Portfolio – CO2*.

¹ Available to intervening parties at the Company’s SharePoint Case No. U-21090 Library > Initial Filing > Working Models > Breining.

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REBUTTAL TESTIMONY

1 **Q. On page 15, line 16, of the direct testimony of Ms. Sutter, she states, “. . . the**
2 **Commission should encourage a more robust analysis of environmental justice than**
3 **that provided by Consumers’ witness Breining.” Do you agree with this**
4 **recommendation?**

5 A. Partially. As indicated by Staff witness Megan Kolioupoulos, the Company was under no
6 obligation to include any analysis of EJ but, rather, the Company did so in good faith.
7 Furthermore, Staff witness Kolioupoulos stated, “Due to the short timeframe and work that
8 the Company had already done on its IRP, it was decided that a more qualitative analysis
9 would be sufficient until the Michigan Integrated Resource Planning Parameters (MIRPP)
10 are updated during the MI Power Grid Phase III process yet to commence. Staff finds that
11 Company witness Breining adequately included all requested information in her
12 testimony.”

13 The Company supports working with the MPSC and Department of Environment,
14 Great Lakes, and Energy staff in the Michigan Integrated Resource Planning Parameters
15 update process to develop a standard framework to evaluate EJ matters for future IRPs.
16 The Company also agree with Staff’s conclusion that the Company’s EJ analysis is
17 sufficient for this IRP.

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REBUTTAL TESTIMONY

REBUTTAL OF ELPC WITNESS KREIGER

1
2 **Q. Beginning on page 8, line 8, of the direct testimony of ELPC witness Kreiger,**
3 **Ms. Kreiger discusses the EJ analysis performed by the Company. Ms. Kreiger**
4 **asserts the EJ analysis is “insufficiently robust” and “appears to contain errors.” Do**
5 **you agree with Ms. Kreiger’s assertion?**

6 **A.** No. The Company disagrees that the EJ analysis was “insufficiently robust” for the same
7 reasons as discussed previously in response to ELPC witness Sutter’s assertion.

8 In regard to the “alleged errors,” Ms. Kreiger offers no insight to the alleged errors,
9 but rather appears to assume there are errors due to the Company’s conclusion that none of
10 Consumers Energy’s currently-owned facilities have any EJSCREEN index ranking above
11 the 75th percentile. The Company provided all resulting EJSCREEN reports as part of the
12 initial filing. Please refer to my workpaper WP-HAB-2 (specifically, page 1 of each
13 report). These reports should reflect, on page 1 of each facility’s report, that none of the
14 Company’s currently-owned facilities have any index ranking above the 75th percentile.

15 **Q. Beginning on page 24, line 6, Ms. Kreiger offers her own opinion on the Company’s**
16 **proposed plan. Ms. Kreiger states, “Consumers should consider the public health**
17 **impacts and environmental equity metrics for each plant individually when**
18 **developing its plan to determine which plants should be phased out and retired first**
19 **as it transitions to clean energy and develops its greenhouse gas strategy.” Do you**
20 **agree with Ms. Kreiger’s recommendation?**

21 **A.** Partially. The Company agrees that public health impacts and EJ/equity metrics are two
22 of many relevant factors that should be considered when determining whether to close a
23 particular facility. However, the Company does not support using the public health impacts

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REBUTTAL TESTIMONY

1 and EJ/equity metrics as the only factors in determining when to retire a facility, as many
2 other issues are important to this analysis, such as the impact of the closure on reliability,
3 customer rates, and the local community, among others.

4 In addition, the Company notes that its proposal in the PCA to retire all of its coal
5 generation facilities by 2025 shows tremendous public health benefits, as discussed in
6 Section V of my direct testimony. As such, the implication that the Company did not
7 consider public health benefits as part of its PCA is clearly inaccurate.

8 Similarly, the fact that the PCA is projected to result in a 60% decrease in
9 greenhouse gas emissions by 2025 – which is five years faster than called for by the
10 Intergovernmental Panel on Climate Change’s 1.5° C Special Report – shows that the
11 Company considered the impact of plant closures on its greenhouse gas reduction strategy.

12 **Q. Does this conclude your rebuttal testimony?**

13 A. Yes.

1 JUDGE WALLACE: Is there any objection to
2 the admission of Exhibits A-22 through A-31 and A-102?
3 Hearing none, those exhibits are admitted.

4 All right. Please go ahead, Mr.
5 Templeton. You'll be starting?

6 MR. TEMPLETON: Right, your Honor. I'm
7 just going to introduce myself and Mr. Pavlecic. Good
8 morning, Ms. Breining.

9 A Good morning.

10 MR. TEMPLETON: I'm Mark Templeton. And
11 I, with my colleague, Robert Weinstock, are two of the
12 attorneys of record for Urban Core Collective in this
13 case. We are supervising attorneys at the University of
14 Chicago, Abrams Environmental Law Clinic. And our
15 student, Jacob Pavlecic, will be the one conducting the
16 cross-examination as per the terms that we had discussed
17 with Mr. Beach and filed in a motion which Judge Wallace
18 approved last Wednesday.

19 Mr. Pavlecic will be appearing under
20 Michigan Administrative Code Section R792.10419. At the
21 end of sections of his cross Mr. Pavlecic may pause to
22 consult with me via text message, and then we will
23 proceed.

24 Do you have any questions about what I
25 have said, Ms. Breining?

1 A No.

2 MR. TEMPLETON: Great. At this point
3 I'll turn it over to Mr. Pavlecic. Oh, you're muted.

4 MR. PAVLECIC: So I guess you couldn't
5 hear me. Can everyone hear me now?

6 THE WITNESS: Yes.

7 CROSS-EXAMINATION

8 BY MR. PAVLECIC:

9 Q Good morning, Ms. Breining.

10 A Good morning.

11 Q Before we get started, do you have access to the
12 SharePoint site?

13 A I do.

14 Q Within the SharePoint do you see a folder called Urban
15 Core Collective?

16 A Yes.

17 Q Can you go to that, and within that do you see a folder
18 called hearing room exhibits?

19 A Yes.

20 Q Could you open that up to have there?

21 A O.K.

22 Q Thank you. And now before we get to the details of the
23 Environmental Justice analysis you did for the Company, I
24 just want to try to understand the context in which you
25 perform this analysis. So if I use the term "EJ" for
Metro Court Reporters, Inc. - metrostate@sbcglobal.net

1 this cross, you understand that to mean Environmental
2 Justice?

3 A Yes.

4 Q And you are responsible for the Company's EJ analysis in
5 this IRP; is that correct?

6 A I am sponsoring the EJ analysis, correct, yes.

7 Q So if I have any questions about the details of this
8 analysis, you would be the right witness to ask. Is that
9 correct?

10 A Yes.

11 Q Why did you conduct this Environmental Justice analysis
12 on behalf of the Company?

13 A In about, I believe it was April of this year we were
14 having work groups with MPSC Staff and EGLE, and we came
15 to an agreement that the Company would perform a very
16 high level good faith analysis for the EJ principles.

17 Q Just to be clear, EGLE is the Michigan Department of
18 Energy Great Lakes and the Environment; is that correct?

19 A Yes.

20 Q Thank you. So did the Company conduct any analysis of
21 the impacts on EJ matters other than what is included in
22 your testimony?

23 A No.

24 Q Now for the purposes of this EJ analysis, you created or
25 directed the creation of three workpapers; is that
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1 correct?

2 A Yes.

3 Q They are called WP-HAB-1, WP-HAB-2, and WP-HAB-3. Is
4 that correct?

5 A That is correct. But can I add a clarification? That
6 workpaper one, so HAB-1, is not necessarily linked to the
7 EJ analysis. HAB-1 is a summary of all of the carbon
8 emissions from each or from each of the -- I guess it's
9 more than just carbon. There's carbon, SO₂, NO_x,
10 mercury, and PM. So it's all of the emissions summarized
11 from every modeling scenario that was conducted.

12 Q O.K. And then you said you still have the Urban Core
13 SharePoint up. Could you please click proposed UCC
14 Exhibit 67?

15 A Yes.

16 Q Is the -- is this that workpaper you just described?

17 A Yes.

18 Q And other than the exhibit stamp at the top right-hand
19 corner, does it appear to be modified in any way since
20 you had last seen it?

21 A Without going line item by line item, I don't believe so.
22 But again I can't verify without going line item by line
23 item.

24 Q And so to be fair, you said this is just a high level
25 analysis of all of the different sorts of emissions and
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1 different scenarios; is that correct?

2 A Yes. This is a summary of the annual emissions from
3 every modeling scenario evaluated.

4 Q Thank you. So now getting to your analysis, could you
5 please turn to your direct testimony, pages 33 and 34?

6 A O.K.

7 Q Now on your analysis that begins on the bottom of page 33
8 and continues to page 34, you compare the proposed course
9 of action with the alternate plan; is that correct?

10 A Yes, that is correct.

11 Q Now, at a high level, what is your understanding of the
12 differences in terms of generation mix between the
13 alternate plan and the proposed course of action?

14 A The alternate plan, I believe, has our coal facilities,
15 our coal generation at Campbell continuing on through
16 2030 and 2039, for Units 1 and 2 in 2030 and Unit 3
17 retiring at the end of 2039. The PCA has those same
18 units retiring in 2025.

19 Q It's also true that in the alternate plan Karn Units 1
20 and 2 operate until 2025; is that correct?

21 A No. Karn Units 1 and 2 operate -- or retire in 2023.

22 Q I'm sorry. Karn Units 3 and 4 operate until 2025 in the
23 alternate plan?

24 A Correct.

25 Q And there is an earlier retirement date for all those in
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1 the proposed course of action; is that correct?

2 A Pardon? Could you restate that question?

3 Q Actually before we get to that. In the alternate plan,
4 to make up the energy capacity lost by retiring these
5 plants, the Company a proposed mix of solar, demand
6 management, and batteries; is that correct?

7 A I believe so. I was not part of the actual modeling of
8 the different scenarios other than the environmental
9 aspect. So the base assumption in each of those, I am
10 not the witness to testify to that.

11 Q Now then turning to the proposed course of action, in the
12 proposed course of action Karn Units 3 and 4 are
13 scheduled for retirement in 2023. Is that correct?

14 A I believe so, but that's subject to check.

15 Q Campbell Units 1, 2 and 3 are scheduled for retirement in
16 2025; is that correct?

17 A Yes.

18 Q Now to address the energy capacity needs created by these
19 retirements, the proposed course of action relies in part
20 on the purchases of Dearborn, Covert, Kalamazoo, and
21 Livingston natural gas facilities; is that correct?

22 A Yes.

23 Q Now, if for the rest of this cross I refer to those as
24 the four proposed natural gas facilities, will you know
25 what I'm just talking about?

1 A Yes.

2 Q Now with regard to the renewable sources in the proposed
3 course of action, are you aware that it contains less
4 solar generation than the alternate plan until the year
5 2034?

6 A I am not aware. I don't know. They don't have emissions
7 associated with them, so it really doesn't impact my
8 analysis.

9 Q So now I'd like to focus on to lines 15 to 17 on page 33
10 of your direct testimony.

11 A O.K.

12 Q There you testify the analysis showed that the projected
13 heat input of the units in vulnerable communities was
14 similar between the alternate plan and the proposed
15 course of action, and thus there is no projected change
16 in impact from these facilities; is that correct?

17 A Yes.

18 MS. STALEY: I'm sorry. Can you direct
19 me to the page and lines that you're talking about again?
20 I'm sorry I missed it.

21 MR. PAVLECIC: That would be page 33 of
22 her testimony, lines 15 to 17.

23 MS. STALEY: Thank you.

24 Q (By Mr. Pavlecic): When you use the term "analysis"
25 there, you're referring to the EJ analysis; is that
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1 correct?

2 A Yes.

3 Q Now this Environmental Justice analysis only compared the
4 proposed course of action to the alternate plan; is that
5 right?

6 A Yes.

7 Q So there was never any other third plan that the proposed
8 course of action was evaluated against. Is that correct?

9 A That is correct.

10 Q Now, when you stated that there is no projected change
11 in impact on these facilities, what do you mean by the
12 word "impact"?

13 A Meaning when the Company, if the Company were to acquire
14 these units, these facilities, the Company does not
15 project -- projections do not show the Company altering
16 the dispatch of those units beyond how they currently
17 operate.

18 Q Now, this analysis only looked at the operation of the
19 plant as part of these overall plants, correct? You
20 never looked at an individual plant analysis; is that
21 right?

22 A Can you elaborate on what you mean by that?

23 Q So when you looked at the impact of how these, the
24 emissions of these plants, it was only in the context of
25 along with the other decisions made in either the
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1 proposed course of action or the alternate plan. It was
2 not looked at on a plant by plant basis; is that correct?

3 A Correct.

4 Q Now, I'd like to go, in the SharePoint, to Urban Core
5 Collective proposed Exhibit UCC-69.

6 A O.K.

7 Q So you have it up?

8 A I do.

9 Q Other than the exhibit stamp at the top right, from
10 scrolling through it quickly does it appear to be
11 modified in any substantial way?

12 A Again not, you know, without going through every line
13 item it appears to look like my workpaper.

14 Q Now on the first page, this document compares the sulfur
15 dioxide, nitrous oxide, and particulate matter emissions
16 for sensitivities 236 and 240; is that correct?

17 A Correct.

18 Q And would those sensitivities be the proposed course of
19 action in the alternate plan?

20 A Yes.

21 Q And so again to clarify, nowhere in this workpaper do you
22 break out the individual emissions of the plants; is that
23 correct?

24 A That is correct.

25 Q But this workpaper does show that there are health

1 benefits to reducing the emissions of sulfur dioxide,
2 nitrous oxide, and particulate matter; is that correct?

3 A I'm sorry, you froze on me and I didn't hear your
4 question.

5 Q There are health benefits to reducing, linked to reducing
6 emissions from sulfur dioxide, nitrous oxide, and
7 particulate matter; is that correct?

8 A Yes.

9 Q And now it's your understanding that that IRP process, in
10 the IRP process one of the factors should be considering
11 the health benefits from the reduction of sulfur dioxide,
12 nitrous oxides, and particulate matter?

13 A I'm sorry, the first part of your question was? You cut
14 out.

15 Q Within the IRP process, should the consideration of the
16 health benefits -- within the IRP. Sorry.

17 With the IRP process, should the health
18 benefits of reducing emissions from sulfur dioxide,
19 nitrous oxides, and particulate matter be something that
20 is considered?

21 A In this case it was not a requirement of the IRP filing.
22 But in future IRPs the Company is open to working with
23 the Commission and other intervenors to determine what
24 would be appropriate.

25 Q And so now I'd like to move to page 34 of your direct
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1 testimony.

2 A O.K.

3 Q Could you look to lines 19 to 20?

4 A O.K.

5 Q Here you talk about the health benefits of the proposed
6 course of action compared to the alternate plan; is that
7 correct?

8 A That is correct.

9 Q These benefits come mainly in the form of reduced air
10 pollutants; is that correct?

11 A Correct.

12 Q Now, I'd like to go to Exhibit A-28 or HAB-7.

13 A O.K.

14 Q Now, could you please go to page 6?

15 A O.K.

16 Q Now this page shows, among other things, the proposed air
17 pollutants from the four proposed natural gas plants; is
18 that correct?

19 A It shows their projected emission rates, yes.

20 Q Now, so it is the case that the four natural gas plants
21 that CEC -- or that Consumers Energy proposes to purchase
22 will still emit sulfur dioxide; is that correct?

23 A That is correct.

24 Q It shows that these four natural gas plants will emit
25 nitrous oxides; is that correct?

1 A Correct.

2 Q This document shows that these four plants will emit
3 particulate matter; is that correct?

4 A Correct.

5 Q Now, the proposed course of action also includes
6 increasing power capacity from solar energy; is that
7 correct?

8 A I am not aware, I don't know.

9 Q But as far as you're aware, does solar energy, do solar
10 resources emit nitrous oxide, sulfur dioxide, or
11 particulate matter?

12 A No.

13 Q So now I'd like to step back and focus on page 30 of your
14 direct testimony.

15 A O.K.

16 Q Focusing in on lines 10 through 15. Here you state that
17 the Company performed additional analyses with regard to
18 particulate matter pollution; is that correct?

19 A That is correct.

20 Q What was the this additional analysis?

21 A Once those units were identified as being in EJ
22 communities, I took a look at the projected heat inputs
23 and the projected PM emissions, so particulate matter
24 emissions, to see if there was an increase in either of
25 those once the Company were to take ownership of those
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1 facilities.

2 Q Now, it's the case that sulfur dioxide emissions can be
3 detrimental to vulnerable or EJ communities; is that
4 correct?

5 A Potentially. I am not an EJ or health screen analyst or
6 expert so I cannot speak to the exact health benefits or
7 health detriments of these emissions.

8 Q But it is true that in this process you calculated the
9 health benefits from the reduction of sulfur dioxide
10 emissions; is that correct?

11 A That is correct.

12 Q And so it's also been the case that nitrous oxide
13 emissions could be potentially detrimental to the
14 Environmental Justice communities?

15 A Potentially.

16 Q So why did your analysis only focus on particulate
17 matter? Why did you not do also additional ones for
18 sulfur dioxide or nitrous oxides?

19 A Because I believe PM was specifically asked about in our
20 discussions with Staff and EGLE.

21 Q So it was asked by either the MPSC Staff or EGLE?

22 A It was -- I believe so. I guess I do not recall, but PM
23 was a specific concern with Staff and EGLE.

24 Q And so now if you could flip to the next page, to page
25 31?

1 A O.K.

2 Q On lines 5 through 7 you discuss the projected heat input
3 increase from certain plants under the proposed course of
4 action. Is that correct?

5 A That is correct.

6 Q You state that on average the Covert facility's projected
7 heat input and PM emission each increase by 6.6 percent;
8 is that correct?

9 A Yes.

10 Q And the DIG facilities projected heat input increase by
11 1.7 percent, and the projected PM emissions increased by
12 1.6 percent. Is that correct?

13 A Correct.

14 Q And just to be clear, when you say DIG, you mean the
15 Dearborn Industrial Generation facility. Is that
16 correct?

17 A Correct.

18 Q Now, is this increase to which you're referring the -- or
19 these percentage increases, are they a total of the
20 entire run time of a given model? Or what specifically
21 do they represent?

22 A I believe, this would be subject to check, but I believe
23 it was an average of the full years of operation that
24 those units would be owned by the Company throughout the
25 duration of the study period. So between, I want to say
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1 roughly between 2026 and 2039 were the years that it was
2 averaged across.

3 Q So when you say like an increase of 6.6 percent, does
4 that mean the proposed course of action, the total
5 emissions over that entire timeframe were on average 6.6
6 percent greater than for the alternate plan; is that
7 correct?

8 A That is correct.

9 Q What specifically were you averaging here when you talk
10 about these averages? Were the models putting out --
11 does the model put out just different runs or were there
12 different assumptions? What was being averaged?

13 A I was averaging the heat input values that the Aurora
14 model produced for those facilities annually for the
15 study period between the two cases. And the differential
16 between the two cases was the percentages that you see
17 here.

18 Q So these, the model outputs different results -- So there
19 were different results put out under both scenarios, the
20 alternate plan and the proposed course of action. Is
21 that a correct understanding?

22 A Yes, they would be different between the two cases.

23 Q Now in the alternate plan, Consumers does not purchase
24 the four gas plants, correct?

25 A Correct.

1 Q Now, are you aware of the assumptions made by Consumers
2 on how long those gas plants would operate if Consumers
3 did not make the purchase?

4 A No, I am unaware, but I know they are present in the
5 model through 2040, which is as far out as our model was
6 run.

7 Q So if those plants were to close early, before 2040, that
8 would have changed the results of your model? Is that
9 correct?

10 A I can't make that assumption because it's based on
11 averages. So I can't make that assumption without
12 actually seeing the numbers.

13 Q So focusing on the increased pollution, that means that
14 between these two plants -- sorry.

15 So the increase in particulate matter
16 emissions under the proposed course of action compared to
17 the alternate plan, is that going to be in addition to
18 normal variability you would see if Consumers did not
19 purchase the plants?

20 A No. That -- the percent increase is very much well
21 within a year to year variability for any plant that
22 dispatches.

23 Q Well, it's within the year to year variability, but in
24 the alternate plan Consumers does not buy the plants,
25 correct?

1 A Correct.

2 Q And so under that plan the emissions were on average
3 lower than under the proposed course of action; is that
4 correct?

5 A On average, yes. They were slightly lower.

6 Q So that does mean there is an increase in the amount of
7 emissions with the proposed course of action. So the
8 Company buying these plants is leading to an increase in
9 pollution; is that correct?

10 A You cut out there. But what I think I heard you say is
11 that the Company purchasing these units causes an
12 increase in pollutant -- polluted --

13 Q Yes, in pollution. Is that correct, in pollution?

14 A The average does show that there is a slight increase,
15 but again it's a projection and well within the normal of
16 the variability of any dispatched unit.

17 MR. PAVLECIC: All right. If it's O.K.,
18 your Honor, I would like to now take a moment to confer
19 off the record with Professor Templeton.

20 JUDGE WALLACE: How much time would you
21 like?

22 MR. PAVLECIC: Two minutes.

23 JUDGE WALLACE: Two minutes. O.K. Off
24 the record.

25 (Off the record from 11:52 a.m. to 11:55 a.m.)

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1 JUDGE WALLACE: Back on the record.

2 Please continue.

3 MR. PAVLECIC: Thank you.

4 Q (By Mr. Pavlecic): So I just want to make sure I
5 understand the variability. So in any given year there
6 is normal variability in how much the plants operate,
7 natural gas plants would operate; is that correct?

8 A That is correct.

9 Q And that's true regardless if Consumers Energy makes this
10 purchase or not; is that correct?

11 A That is correct.

12 Q So it's the case that even within that normal
13 variability, that under the alternate plan where
14 Consumers did not purchase the plants, the model, in
15 having a normal variability, assumed there would be
16 slightly less emissions if Consumers did not purchase the
17 plants compared to the proposed course of action where
18 Consumers did purchase the plants; is that correct?

19 A That is correct.

20 Q O.K. And now if you don't mind, I apologize, if you
21 could go back to page 33 and 34 of your direct testimony.

22 A O.K.

23 Q This is again where you highlight the overall benefits.

24 Could you have included a plant by plant specific look

25 with each individual plant's contributions to these

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1 factors in your EJ analysis?

2 A What do you mean?

3 Q So could you have, for example, looked at what the
4 addition of each individual plant and how that would
5 change emissions as compared to only looking at them
6 within the broader scope of the proposed course of action
7 or the alternate plan?

8 A No, because we did not run any modeling scenarios where
9 we only added one unit or one facility at a time.

10 Q So you did not do it, but could you have done it?

11 A If those scenarios were run, yes, I could have.

12 Q With that, I'd like to now move up to talking about the
13 EJ screen you did, which I believe starts on page 29 of
14 your direct testimony.

15 A O.K.

16 Q What is the -- to do this EJ screen, you use the EPA's
17 screen tool; is that correct?

18 A That is correct.

19 Q And so what is the EPA's EJ screen tool?

20 A As shown in my direct testimony, that link was provided.
21 It's just the tool that the EPA has on their website.
22 You type in the address of the facility that you want to
23 look at. You set a screening parameter, so a distance
24 around that facility, so an impact, I'll just call it an
25 impact zone, and then it provides an EJ index for review
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1 of those.

2 Q Now on lines 12 to 14 you testified that the Company
3 noted any facilities that had an environmental or
4 demographic indicator examined by the EJ screen above the
5 75th percentile to be a potentially vulnerable community;
6 is that correct?

7 A That is correct.

8 Q Now, what does it mean for a given community to have a
9 higher percentile rating from the EJ screen tool?

10 A That they would be considered an Environmental Justice
11 community.

12 Q But why is it significant that you set it, for example,
13 at the 75th percentile and not the 25th percentile?

14 A Actually the EPA recommends an 80 percentile, so anything
15 above the 80th percentile they consider an EJ community.
16 The Company just wanted to err on the side of
17 conservatism and we went with 75 percent.

18 Q But it is the case that as the percentiles go up, the
19 greater evidence that the community could be an EJ
20 community; is that correct?

21 A Presumably.

22 Q Is it also correct that these percentiles do not take
23 into account the total population; is that correct? They
24 only look at community by community?

25 A I am not -- I don't know. I assume so, but again I'm not
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1 an expert on the EPA designed tool. This was just a tool
2 that we used at the request of Staff and EGLE.

3 Q And so as far as you're aware, these indicators do not
4 take into account the size of the population of given
5 communities; is that correct?

6 A I don't know. I can't answer that question.

7 Q Now, after running the -- you performed this EJ screen on
8 the four proposed natural gas plants; is that correct?

9 A Correct.

10 Q And by the Company's chosen metric of using the 75th
11 percentile, three out of the four proposed natural gas
12 plants are located in EJ communities; is that correct?

13 A Correct.

14 Q Now, using the SharePoint could you go to proposed UCC
15 Exhibit 68?

16 A O.K.

17 Q Now, this is one of your workpapers we had mentioned at
18 the beginning; is that correct?

19 A Correct.

20 Q And again subject to check, with the exception of the
21 exhibit stamp on the top right, it does not appear to
22 have been modified?

23 A Correct.

24 Q O.K. So now I would like to go to page 12 using the page
25 numbers on the top right.

1 A O.K.

2 Q This is the EJ screen for DIG using a two kilometer
3 radius; is that correct?

4 A Correct.

5 Q And if you go to the immediate next page that lists the
6 indicators for DIG using the two kilometer ring; is that
7 correct?

8 A It provides the variables, yes.

9 Q Now, is it true that using the two kilometer ring the
10 community around DIG has a PM 2.5 indicator above the
11 95th percentile using State percentiles?

12 A Looking at that one particular variable, yes.

13 Q It's the case that using the two kilometer ring, the
14 community around DIG has a People of Color indicator
15 above the 80th percentile using State indicators; is that
16 correct?

17 A Yes. That variable does show 83 percent.

18 Q And it's the case that using the low income population,
19 that's above the 96 percentile, using State percentiles;
20 is that correct? Or is at the 96 percent for State
21 percentiles; is that correct?

22 A For that variables, yes, that is correct.

23 Q Now if we go to page 16, this is the same report just
24 using the ten kilometer rate for DIG; is that correct?

25 A Correct.

1 Q Now using the ten kilometer ring DIG has a particulate
2 matter indicator over the 90th percentile, again for
3 using State percentiles; is that correct?

4 A For this variable, yes.

5 Q And for the People of Color population, the percentile is
6 85th using State percentiles?

7 A Yes, that variable is 85 percent.

8 Q And it's at the 85th percentile for low income population
9 using State percentiles, correct?

10 A Yes. The variable is 85 percent.

11 Q Now is it also true that of all the plants you conducted
12 an EJ screen for, DIG has the largest approximate
13 population within the kilometer ring?

14 A I don't know that right offhand without looking at each
15 individual one.

16 Q If you want, they are all there. You can scroll through.
17 Would you mind scrolling through?

18 A I'm not sure where I see the actual population.

19 Q So --

20 A It's reported in percentages.

21 Q So if you were to look on the first page of each
22 individual screen report where it discusses the original
23 plants and it has the bar graphs, you can see approximate
24 population.

25 MS. STALEY: Would you like to identify
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1 the page numbers, please.

2 A I see it now.

3 Q (By Mr. Pavlecic): So I believe it'll be page numbers 1,
4 4, and then it would be every third page number. So 7,
5 10, 13?

6 A Yes. DIG does appear to have the highest approximate
7 population.

8 Q So given that DIG has the highest approximate population,
9 has very high indicators, did that factor in any
10 particular way in your analysis after performing this EJ
11 screen?

12 A Just, after performing the EJ screen I then further
13 performed the additional analysis on whether or not the
14 Company's acquisition of this unit would cause a material
15 increase to the emissions, and it was found it did not.

16 Q And so it was not significant for your analysis that DIG
17 had -- was by a much larger population than all these
18 other plants; is that correct?

19 A The population did not impact my analysis, no.

20 Q Now, is it true that currently none of Consumers Energy's
21 existing fossil fuel generation are in areas that were
22 identified as EJ communities?

23 A Correct.

24 Q So that means if the proposed course of action is
25 approved, Consumers will increase the number of

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1 facilities it owns in Environmental Justice communities,
2 correct?

3 A Correct.

4 Q So that means Consumers will increase the amount of
5 emissions it has in Environmental Justice communities; is
6 that correct?

7 A I would say that is not correct.

8 Q Why not?

9 A Consumers currently purchases generation through power
10 purchased agreements, owned generation, and through the
11 MISO. DIG is currently a unit in operation in the MISO
12 from which the Company currently purchases electricity
13 from. So whether or not it is in the MISO or under the
14 Consumers-owned umbrella, it appears to be indifferent.

15 Q So does that mean when you performed your analysis, for
16 example on pages 33 to 34, did you in that part take into
17 account whether or not that these plants would still be
18 -- different plants would still be emitting pollutants?

19 MS. STALEY: Are you referencing pages
20 34, 33 through 34 of her direct testimony?

21 MR. PAVLECIC: Yes.

22 A On page 33 of my direct testimony, lines 21 and 22, when
23 I mention that the PCA reaches more than 63 million tons
24 of CO2 over that timeframe, that does include MISO
25 purchases, PPA purchases, and Consumers-owned generation.

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1 So at a high level I would say that yes, all sources of
2 generation are considered or have been considered. So
3 when I compare how, let's just use DIG for an example.
4 In the alternate plan DIG is not owned by the Company.
5 However, it's being dispatched in the MISO. So those
6 MISO -- the impact that DIG has on the MISO emissions is
7 accounted for.

8 Q I see. So could you go to page 31 of your direct
9 testimony?

10 A O.K.

11 Q On this page it's on line 6 to 7 again where you said
12 that Consumers purchasing DIG would lead to a projected
13 increase in pollution. And so that is compared to a
14 scenario where Consumers would normally just purchase
15 energy as it's currently doing. Is that correct?

16 MR. PAVLECIC: Did she freeze?

17 MS. STALEY: I think she froze.

18 JUDGE WALLACE: Ms. Breining, are you
19 there? She left.

20 MS. STALEY: Let her try and come back.

21 JUDGE WALLACE: Let's go off the record
22 for a couple minutes.

23 (Brief pause while Ms. Breining reconnected to
24 Teams.)

25 JUDGE WALLACE: All right. Back on the
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1 record.

2 Q (By Mr. Pavlecic): So Ms. Breining, to repeat my
3 question, it is the -- so the alternate plan, which your
4 analysis found to have slightly less emissions, also said
5 that the Company would be buying from the MISO market as
6 it currently is, does it not?

7 A I'm sorry. I'm not sure I understand your question.

8 Q So you stated that you can not say that Consumers will
9 increase its emissions in Environmental Justice
10 communities. However, what I'm curious about is that on
11 page 31 of your direct testimony you state that
12 Consumers' purchases of these natural gas facilities will
13 increase their emissions as compared to the alternate
14 plan where they would not make that purchase; is that
15 correct?

16 A Correct. On average and under the PCA, the DIG facility
17 is projected to increase slightly, on average. But that
18 slight increase is well within a typical year to year
19 variability. So the Company does not believe that the
20 increase shown over the course of the model runs shows an
21 increase in emissions. Because it's well within that
22 variability.

23 Q But the -- you know, the alternate plan, the base line,
24 when you put that plan in the model, that model -- that
25 run, that analysis of the alternate plan, that also has
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1 some variability in it too, does it not?

2 A It does.

3 Q And so your analysis here, finding the small increase,
4 found that there was a small increase on top of that
5 normal base line variability; is that correct?

6 A Yes. But that is across -- it's an average across
7 multiple years, so.

8 Q And so then is that average, you say across multiple
9 years. Again to make those percentages, were those
10 looking at the total, like at the end run of the model,
11 the total amount of emissions produced? Or were those
12 looking at the average increase in any given year?

13 A It would be the, I believe it was the total average
14 across all years. And then I also looked at the year to
15 year variability.

16 Q And so while -- So again, while I understand it's within
17 that range you had set, the model had found that given
18 normal variability, if Consumers did not purchase the
19 plants, emissions would be slightly lower. Is that
20 correct?

21 A In some years, yes. But across the average, yes, you are
22 correct.

23 Q And so then at least with respect to the areas around
24 Dearborn and where the Covert facility is, if the
25 proposed course of action is approved, Consumers will be
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1 increasing its emissions in vulnerable communities; is
2 that correct?

3 A I would say that there is some potential for that, but
4 then there is also the potential that it would not. This
5 is a model. It's a forecast. So the forecast shows the
6 potential for a slight increase in emissions.

7 Q All right. Now, after finding out that these areas are
8 potentially vulnerable communities, did the Company reach
9 out to any members of these communities to include them
10 in any analysis?

11 A I don't know.

12 Q Did you, were you aware of any meetings where members of
13 these communities were brought in as a result of this
14 analysis?

15 A I am not aware. I don't know.

16 Q Were they, as far as you -- so you were not aware of them
17 being included in any of your work here that's included
18 in your testimony?

19 A I was not a part of any work groups that occurred with
20 public outreach. So I don't know exactly what was
21 covered in any community outreach.

22 Q And it's also the case that you're not aware of any
23 community outreach even occurring; is that correct?

24 A I believe there was public outreach, but I don't know
25 what was discussed or when exactly it occurred.

1 Q But to your -- as far as you know, your analysis did
2 not -- you did not specifically include any analysis from
3 those feedback sessions into your Environmental Justice
4 analysis; is that correct?

5 A I'm sorry, you kind of froze on me.

6 Q As far as you're aware, you did not include any
7 information from these outreach sessions in your
8 Environmental Justice analysis; is that correct?

9 A That is correct.

10 Q And now are you aware of any changes that were made to
11 the proposed course of action as a result of your
12 Environmental Justice analysis?

13 A No.

14 Q So it's your understanding that after performing this EJ
15 analysis, they Company made no changes to its proposed
16 course of action?

17 A To my knowledge, that is correct.

18 MR. PAVLECIC: If it's all right, your
19 Honor, I would like to go off the record once again just
20 briefly for two minutes to confer with Professor
21 Templeton.

22 JUDGE WALLACE: Absolutely. Off the
23 record for a couple minutes.

24 (12:18 p.m., a brief pause was had in the
25 proceedings.)

1 JUDGE WALLACE: Back on the record.

2 Please continue.

3 Q (By Mr. Pavlecic): Ms. Breining, at the beginning you
4 stated that you began your EJ analysis around April of
5 this year; is that correct?

6 A April is when --

7 (Witness connection frozen.)

8 JUDGE WALLACE: O.K. Theresa, you're not
9 frozen.

10 MS. STALEY: I'm not frozen. There you
11 are, Heather. You're back.

12 THE WITNESS: Am I back?

13 MS. STALEY: You're back.

14 A In April we had the call with Staff and EGLE to discuss
15 this, and April is when we agreed to perform the
16 analysis. We then went out and looked at different tools
17 available for the analysis and only felt comfortable
18 running this one given our -- the lack of time and the
19 lack of expertise that the Company had to perform the
20 analysis.

21 Q And do you remember approximately when the analysis was
22 finished?

23 A I don't recall right offhand. I could look at the time
24 stamp on the reports, but I don't recall when that is.

25 Q Then do you recall what -- to whom you spoke at the
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1 Company presenting the findings of your report?

2 A Who did I share this information with, is that your
3 question?

4 Q Yes.

5 A I believe I just shared it with my immediate supervisors.

6 Q And that would be, do you have any specific names?

7 A Jim Rauch and Linda Hilbert.

8 Q O.K. And so those were the main conversations you had
9 with Consumers' executives about your EJ analysis?

10 A I believe so.

11 Q And do you know what they did with the report, with your
12 analysis?

13 A No.

14 Q So after you turned in your report, you were not aware of
15 how it was used in the IRP process?

16 A It was just used as a piece of information, an additional
17 piece of information that I included in my testimony.

18 Q All right. And so after you turned in this report, were
19 there any other conversations that you had about the EJ
20 analysis?

21 A I know that we discussed performing the additional
22 analysis regarding particulate, I performed it, the
23 analysis, I shared the results, and we all concluded that
24 the increase, the projected potential increase was not
25 significant as it was well within the typical variability
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1 of those units.

2 Q All right. Thank you.

3 MR. PAVLECIC: At this time, I would like
4 to move into evidence Urban Core Collective proposed
5 Exhibits UCC-67, -68, and -69.

6 MR. TEMPLETON: Your Honor, if I might,
7 we can represent that we did not modify those exhibits
8 other than putting on the proposed exhibit stamp number,
9 case number, and page numbers.

10 MS. STALEY: You're on mute, your Honor.

11 JUDGE WALLACE: Ms. Staley, is that
12 acceptable?

13 MS. STALEY: That's acceptable, your
14 Honor, those are Ms. Breining's work papers.

15 JUDGE WALLACE: All right. Is there any
16 objection to the admission of Exhibits UCC-67, UCC-68,
17 and UCC-69?

18 MS. STALEY: No objection.

19 JUDGE WALLACE: Hearing none, those
20 exhibits are admitted.

21 MR. PAVLECIC: With that, we have no
22 further questions. Thank you, Ms. Breining, for your
23 time.

24 JUDGE WALLACE: All right. It is 12:25.
25 Would folks like to take about an hour for lunch, and
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1 then we'll come back and pick up with the Clean Energy
2 Organizations and then Biomass Plants after lunch, and
3 then we'll move on to Ms. McGraw. So you want to go
4 ahead and take an hour now for lunch? Would that be all
5 right?

6 MS. STALEY: Yes.

7 MS. KEARNEY: It's fine with me.

8 MS. STALEY: And your Honor, do you want
9 me to talk to Ms. Breining now about whether she'd like
10 redirect on individual cross-examinations, or do you want
11 it all at the conclusion of her total cross-examination?

12 JUDGE WALLACE: Probably prefer it at the
13 conclusion. Is that O.K.?

14 MS. STALEY: Yes, that's fine.

15 JUDGE WALLACE: All right. I'll see you
16 all back here in an hour.

17 MS. STALEY: Thank you.

18 THE WITNESS: Thank you.

19 MR. TEMPLETON: Thank you. And thank
20 you, Ms. Breining.

21 THE WITNESS: Thanks.

22 (Collective "Thank you.")

23 (At 12:26 p.m., the hearing recessed for lunch.)

Monday, December 6, 2021

At 1:37 p.m.

- - -

(Hearing resumes following the lunch recess.)

JUDGE WALLACE: All right. Moving on to Ms. Kearney, you have cross for Ms. Breining. Please go ahead.

MS. KEARNEY: Thank you, your Honor.

- - -

H E A T H E R A . B R E I N I N G

resumed the stand, and having been previously sworn, testified further as follows:

CROSS-EXAMINATION

BY MS. KEARNEY:

Q Good afternoon, Ms. Breining.

A Hello.

Q My name Margrethe Kearney, and I represent the Clean Energy Organizations. I'm going to ask you a few questions, and when I do so, I'm going to refer to your testimony, which I understand you have in front of you. Is that right?

A That is correct.

Q O.K. And then I'm also going to refer to the testimony of Dr. Bilsback, and I put that in the hearing room exhibits under the CEO. If you have another copy of it Metro Court Reporters, Inc. - metrostate@sbcglobal.net

1 that's like easier for you to read or look at, that's
2 fine, too.

3 O.K. So on page 4 of your rebuttal
4 testimony, you state that Dr. Bilsback's testimony
5 repeatedly indicates that the models she used don't
6 capture the direct impacts of power plants; is that
7 right?

8 A That's correct.

9 Q And on that basis, you argue that Dr. Bilsback goes
10 outside of the information provided in her own models and
11 testifies that the Company's power plants have health-
12 damaging emissions; is that correct?

13 A That's correct.

14 Q All right. So I'm going to -- I took a look at
15 Dr. Bilsback's testimony, and I'm not going to pull it up
16 on the screen here because I think everybody has it, and
17 when I pull it up, it gets real small, but when I went
18 through it I found only a couple places where the word
19 direct showed up other than in the headers. So the first
20 one I want to ask you about is on page 4 to 5 of
21 Dr. Bilsback's testimony. Are you there?

22 A Yes.

23 Q So she testifies that: Air pollutants from fossil fuel
24 plants including of include pollutants, i.e.,
25 constituents that are emitted directly by the power
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1 plant, and precursors of secondary air pollutants, i.e.,
2 constituents that react chemically in the atmosphere and
3 form harmful air pollutants downwind from the Power
4 plant; did I read that right?

5 A Yes, yes.

6 Q O.K. So this can't be one of the instances where she has
7 repeatedly indicated that her models don't capture the
8 direct impacts of power plants, right, because here she's
9 just making the general statement that emissions from
10 fossil fuel plants include primary air pollutants and the
11 precursors of secondary air pollutants, right?

12 A Correct.

13 Q So she's not talking about any of her models here, is
14 she?

15 A No.

16 Q O.K. So the next place I saw was on page 5, and there
17 Dr. Bilsback testifies that: Air pollution can be
18 transported over long distances before it is deposited on
19 the earth's surface either directly or through
20 precipitation. So that can't be one of the repeated
21 indications you reference in your rebuttal testimony, can
22 it?

23 A No.

24 Q Right. Because she's not talking about her models here,
25 is she?

1 A No.

2 Q O.K. So then on page 7, Dr. Bilsback testifies that:
3 Both COBRA and InMAP only capture the health impacts from
4 atmospheric (or outdoor) PM2.5 that is emitted directly
5 or is formed as a secondary pollutant from other
6 pollutants emitted directly from the power plant itself.
7 Did I read that right?

8 A Yes.

9 Q O.K. And COBRA and InMAP are the two models that
10 Dr. Bilsback uses, right?

11 A Yes.

12 Q And she testifies in what I just read that COBRA and
13 InMAP do capture the health impacts from PM2.5 that is
14 emitted directly from the power plant, doesn't she?

15 A Yes.

16 Q And she testifies that both COBRA and InMAP do capture
17 the health impacts from PM2.5 that is formed as a
18 secondary pollutant from other pollutants emitted
19 directly from the power plant itself, doesn't she?

20 A Yes.

21 Q And Dr. Bilsback testified that her modeling efforts
22 focused on PM2.5, did she not?

23 A Yes.

24 Q Because there are a lot of models that are widely used to
25 model PM2.5; isn't that right?

1 A Yes.

2 Q And because there's overwhelming epidemiological evidence
3 that supports the relationship between PM2.5 and human
4 health, correct?

5 A Correct.

6 Q And the citations that she references, and these are on
7 page 6, those support the statement -- those are two
8 peer-reviewed articles that link particulate air
9 pollution to increased mortality rates; is that right?

10 A I believe so, yes.

11 Q All right. And you don't disagree that PM2.5 emissions
12 can be damaging to human health, do you?

13 A No, but I'm also not a health expert.

14 Q O.K. But you have no reason to dispute that statement,
15 do you?

16 A No.

17 Q So Dr. Billsback, and I think this might be what you were
18 referring to, goes on to explain that her models do not
19 capture the direct impact of volatile organic compounds,
20 VOCs, many of which are carcinogenic; is that what you
21 were referring to?

22 A What page are you on?

23 Q So that one is on page 6.

24 MS. STALEY: I'm sorry. Where are you
25 reading from, can you give me a line number?

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1 MS. KEARNEY: Let me find that for you.
2 Page 7, line 21, and then it goes over into page 8.

3 MS. STALEY: Thank you.

4 MS. KEARNEY: Yep. The one time I don't
5 write it down. (Laughter.)

6 A And I'm sorry, can I ask what the question was again?

7 Q (By Ms. Kearney): So my question was is that we've gone
8 through a couple instances of her testimony where she
9 does discuss the direct impacts of power plants and how
10 her models capture the direct impacts. You had testified
11 that her testimony repeatedly indicated that the models
12 she used don't capture the direct impacts of power
13 plants. I was wondering if this was the section that you
14 were referring to?

15 A Yes. And then part of -- she goes on to provide some
16 analysis in which she's not utilizing her models, she's
17 relying on multiple sources of information outside --

18 Q So she goes on to talk about in her testimony, she has a
19 number of tables where she estimates emissions from gas
20 and coal power plants in the IRP; is that what you're
21 talking about, that analysis?

22 A Yes.

23 Q Can you turn to page 14, Table 3, of Dr. Bilsback's
24 testimony.

25 A Table 3, is that the table on page 15?

1 MS. STALEY: Yes.

2 A O.K.

3 MS. STALEY: Is that the one on 15?

4 MS. KEARNEY: Let me make sure.

5 MS. STALEY: It doesn't really identify
6 it as Table 3. Oh, there it does, on page 14, it
7 identifies it. Thank you.

8 Q (By Ms. Kearney): O.K. Yeah, so it's identified on 14
9 and on 15. So this is where Dr. Bilsback discusses the
10 health impacts from the power plants; is that right?

11 A Yes.

12 Q O.K. And that table is a result of Dr. Bilsback's
13 modeling in COBRA, correct?

14 A Yes.

15 Q And that table is limited to PM2.5 impacts, correct?

16 A Yes.

17 Q Not the VOCs that we were just talking about that you
18 feel go beyond her modeling?

19 A Correct. But again, what I was referring to are the
20 emissions tables on page 11 of her testimony.

21 Q So the emissions tables on page 11 were not modeled in
22 COBRA, correct?

23 A Correct.

24 Q But the health impact modeling was modeled in COBRA,
25 correct?

1 A Yes, it appears to be.

2 Q And it's limited to PM2.5 impacts; is that right?

3 A Yes.

4 Q Which you agree are directly emitted from power plants?

5 A Yes.

6 Q O.K. I want to kind of move to a different subject and
7 ask you a couple questions about your use of the EJSCREEN
8 tool.

9 A O.K.

10 Q So you talked about this earlier today with the Urban
11 Core Collectives' counsel, and I'm going to go ahead and
12 use their same exhibits so that we don't have the same
13 document in twice, and I placed that exhibit in the
14 hearing room exhibits, and you can see it as Exhibit
15 UCC-68.

16 A O.K.

17 Q Do you see that? O.K. And I just copied and pasted that
18 from their file. So EJSCREEN is the report that you used
19 in that workbook, correct?

20 A Correct.

21 Q And in your direct testimony, you stated that the Company
22 considered any facilities that had an environmental or
23 demographic indicator examined by the EJSCREEN above the
24 75th percentile to be a potentially vulnerable community,
25 right?

1 A I did, yes.

2 Q So you used the indicators to make a determination as to
3 whether a facility was above the 75th percentile?

4 A No. Actually, we used the EJ index, not the indicators,
5 so apparently that is a correction that would need to be
6 made.

7 Q So in your direct testimony at page 29, you need to
8 correct that testimony because you did not mean to say
9 indicator, you meant to say indices?

10 A Correct. We utilized the table on the first page of each
11 of those screens.

12 Q All right. I'm going to open that guy up, try to share
13 my screen, see if I can do it. Do you see it?

14 A Yes.

15 Q O.K. All right. So this one, for example, is for
16 Campbell, which is an existing Consumers unit, correct?

17 A Correct.

18 Q And on this first page, we see indices, correct?

19 A Correct.

20 Q And on the second page, we see indicators; is that right?

21 A Correct, yes.

22 Q So for example, if you look at the ozone indicator for
23 Campbell, it's in the 98th percentile for the State; is
24 that right?

25 A That is correct.

1 Q And so that means that 98 percent of the State of
2 Michigan would have a lower value for ozone than the area
3 you analyzed, right?

4 A I believe that is what it is saying, yes.

5 Q Great. So now it's your testimony that in fact
6 Consumers' existing plants do have indicators in EJSCREEN
7 that are above the 75th percentile, correct?

8 A They have indicators, yes, which are variables that go
9 into the actual Environmental Justice index as reported
10 out by the EPA -- or as calculated by the EPA.

11 Q And Dr. Bilsback pointed out the -- or Dr. Krieger
12 pointed out that there was an error in your testimony on
13 this point, that in fact there were indicators that were
14 above the 75th percentile, didn't she?

15 A She did.

16 Q And in your rebuttal testimony to her testimony, you
17 doubled down and said she was wrong, right?

18 A Yes. This is not what we used for that determination, we
19 used the indexes, not indicators, so it was the wrong
20 word that was used.

21 Q O.K. But you didn't notice that until just now?

22 A I didn't notice that till just now.

23 Q Which indices does that indicator go into?

24 A If you scroll up to the first page, there's a formula,
25 from what I understand, that the EPA uses which combines
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1 a demographic factor with an environmental factor, and
2 they calculate these various percentages.

3 Q Do you know, did you take a look at which indicators went
4 into which indices and did that inform your decision to
5 rely on the indices as opposed to the indicators?

6 A I don't believe we got into that detail, we just followed
7 the EPA tool. Like we really know very little about this
8 tool. Again, this was a good-faith evaluation that the
9 Company did, we were not required to perform this
10 analysis, and we had concerns over not having the
11 expertise to perform these analyses for this IRP, but
12 since it was not a requirement, we acted in good faith
13 with Staff and EGLE and performed this analysis, and we
14 simply used this index table on the first page of each
15 report based on knowing that this is the overall score
16 that is given per the EPA calculations.

17 Q O.K. All right. And I'm not trying to like pick on you
18 here, but I just want to understand, to the extent that
19 Consumers did this evaluation, it was not -- am I right
20 in understanding that it was not what you would consider
21 to be like a robust let's sit down and think of all the
22 ways we can do this right kind of evaluation?

23 A In this case, yes, you are correct.

24 Q O.K. All right. So you -- I want to ask just a quick
25 question about your rebuttal testimony on page 6 where
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1 you talk about, you state that it's important to take
2 into account the beneficial reuse of waste blast furnace
3 gas, and there you're talking about the DIG units; do you
4 see that? Oh, and I can take this down.

5 A Yes, I do see it. On page 5?

6 Q Yeah. I think I'm off by one in all my page numbers,
7 must be the PDF versus the -- all right. So I just
8 wanted to ask you, other than firing the DIG natural gas
9 unit, did you consider any other alternative uses for the
10 blast furnace gas?

11 A No, I did not.

12 Q Are you aware of the fact that one of the intervening
13 parties in this case is a group of biomass facilities?

14 A Just a high-level awareness, but yes, that they are
15 intervenors.

16 Q Do you have a high-level understanding of the types of
17 emissions that come from biomass units?

18 A No.

19 Q All right. Well, that got you off the hook on anymore
20 questions about that topic, so I don't have anymore
21 questions. Thank you, Ms. Breining.

22 A Thank you.

23 JUDGE WALLACE: Thank you, Ms. Kearney.
24 Mr. Waters.

25 MR. WATERS: Thank you, your Honor.

CROSS-EXAMINATION

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BY MR. WATERS:

Q I think my questions, in view of your answer to Ms. Kearney's last question, I'm going to be very brief. Am I correct that your analysis did not take into account in any way the fact that the Biomass Plants reduced methane emissions by burning forest wood that would otherwise decompose and produce both CO2 and methane as Mr. Polich has testified?

MS. STALEY: Your Honor.

JUDGE WALLACE: Yes, Ms. Staley.

MS. STALEY: I was going to object to that question because it seemingly goes into testifying a little bit. If Mr. Waters would like to point Ms. Breining to Mr. Polich's testimony so that she can take a look at what he said, then we can do it that way.

Q (By Mr. Waters): Have you read Mr. Polich's testimony, Ms. Breining?

A I have not.

Q O.K. Let me ask this question, try to cut to the chase. Did your environmental analysis take into account methane emissions in any respect?

A No, they did not.

Q Thank you.

MR. WATERS: No further questions.

1 JUDGE WALLACE: All right. Thank
2 you, Mr. Waters.

3 Ms. Staley, do you want to take a few
4 minutes to confer with your witness to see if you need
5 any redirect?

6 MS. STALEY: Yes. Thank you, your Honor.

7 JUDGE WALLACE: How long?

8 MS. STALEY: Just probably five minutes.

9 JUDGE WALLACE: O.K. Five minutes off
10 the record.

11 MS. STALEY: Thank you.

12 (At 1:59 p.m., there was a three-minute recess.)

13 JUDGE WALLACE: All right. Back on the
14 record. Ms. Staley, do you have any redirect for
15 Ms. Breining?

16 MS. STALEY: I only have one question,
17 your Honor, and it's just for the purpose of correcting
18 an error.

19 REDIRECT EXAMINATION

20 BY MS. STALEY:

21 Q So Ms. Breining, you just testified that you just
22 discovered an error in your prefiled direct testimony; is
23 that correct?

24 A That is correct.

25 Q And is that on page 29, line 13?

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1 A Yes.

2 Q And what should that read?

3 A It should read, "The Company considered any facilities
4 that had an Environmental Justice index examined by the
5 EJSCREEN above the 75th percentile to be a potentially
6 vulnerable community."

7 Q O.K. So that was actually lines 12 through 14 that you
8 read that sentence?

9 A Yes.

10 Q O.K. And that corrects the error that you discovered?

11 A Yes.

12 MS. STALEY: O.K. I have nothing
13 further, your Honor.

14 JUDGE WALLACE: So you will be submitting
15 revised -- you'll correct that in your, in the submission
16 of testimony?

17 MS. STALEY: Yes.

18 JUDGE WALLACE: O.K.

19 MS. KEARNEY: Your Honor, may I speak?

20 JUDGE WALLACE: Yes, Ms. Kearney.

21 MS. KEARNEY: Your Honor, to the extent
22 that that error is going to be corrected in the direct
23 testimony, I would also ask that the portions of
24 Ms. Breining's rebuttal testimony that take issue with
25 Dr. Krieger's testimony that points out that error be
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1 stricken as well.

2 MS. STALEY: O.K.

3 MS. KEARNEY: And I'm happy to work
4 offline with Ms. Staley to direct her to what those are.

5 MS. STALEY: That's fine. We can work
6 offline and we'll revise that appropriately, your Honor.

7 JUDGE WALLACE: O.K. All right.

8 Perfect, that is perfect for me.

9 All right. Thank you very much,
10 Ms. Breining. You are excused.

11 (The witness was excused.)

12 MS. STALEY: Thank you, your Honor.

13 JUDGE WALLACE: And so I guess we should
14 just keep going. I think we have CUB. Ms. Hillyer is
15 here, Mr. Burgess is here, and that is the cross that we
16 have for Ms. McGraw. Says we may have up to an hour
17 here. O.K. Well, my timer is going, so Mr. Burgess,
18 please call your next witness.

19 MR. BURGESS: At this time, your Honor,
20 the Company calls Ms. McGraw to the stand.

21 MS. MCGRAW: Hello.

22 E M I L Y A. M C G R A W

23 was called as a witness on behalf of Consumers Energy
24 Company and, having been duly sworn to testify the truth,
25 was examined and testified as follows:

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1 JUDGE WALLACE: O.K. Ms. McGraw, can you
2 tell me if there's anyone physically present in the room
3 with you?

4 THE WITNESS: There is no one in the room
5 with me.

6 JUDGE WALLACE: Thank you. And what
7 materials and devices do you have with you?

8 THE WITNESS: I have my direct and
9 rebuttal testimony, along with exhibits, as well as
10 intervenor testimony. I have my computer in front of me.

11 JUDGE WALLACE: O.K. Are you logged into
12 the Sharepoint site?

13 THE WITNESS: Yes.

14 JUDGE WALLACE: All right. Just want to
15 remind you that there can be no unauthorized
16 communication between yourself and other witnesses or
17 counsel without my approval.

18 With that, please continue, Mr. Burgess.

19 MR. BURGESS: Thank you, your Honor.

20 DIRECT EXAMINATION

21 BY MR. BURGESS:

22 Q Can you please state your full name and business address
23 for the record.

24 A My name is Emily McGraw, and my business address is One
25 Energy Plaza, Jackson, Michigan.

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1 Q And by whom are you employed and in what capacity?

2 A Consumers Energy, as the Executive Director of Demand
3 Side Management.

4 Q Did you cause to be prefiled in this proceeding a
5 document entitled the Direct Testimony of Emily A.
6 McGraw, which consists of a cover page and 17 pages of
7 questions and answers?

8 A Yes, I did.

9 Q And did you also cause to be prefiled in this proceeding
10 a document entitled the Rebuttal Testimony of Emily A.
11 McGraw, which consists of a cover page and 12 pages of
12 questions and answers?

13 A Yes, I did.

14 Q Are there any changes or revisions that you wish to make
15 at this time to either your direct or rebuttal testimony?

16 A Yes, I have two revisions to make at this time. The
17 first, on page 1, lines 5 through 6, of my direct
18 testimony, I stated that my title was Director of
19 Residential Demand Response; that title has since been
20 updated to Executive Director of Demand Side Management,
21 that's the first one.

22 The second is also in my direct testimony
23 on page 11, lines 14 through 16, I incorrectly stated
24 that the 23.751 million consists of 23.2 million Base
25 Outlook capital and .41 million of incremental capital
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1 expenditures for '23, '24, and then prorated six months
2 of '25. That was a numerical error, and it should be
3 corrected to be 23.3 million of Base Outlook and .4
4 million incremental, for a total of 23.7 million.

5 Q Was your direct and rebuttal testimony prepared by you or
6 at your direction?

7 A Yes.

8 Q Are you also sponsoring any exhibits associated with your
9 direct or rebuttal testimony today?

10 A Yes.

11 Q Are those the exhibits that have been previously marked
12 by the court reporter as Exhibits A-82 through A-85?

13 A Yes.

14 Q Are there any changes or revisions that you wish to make
15 to your exhibits today?

16 A No.

17 Q Were these exhibits prepared by you or at your direction?

18 A Yes, they were.

19 MR. BURGESS: At this time, your Honor,
20 the Company moves to bind in the direct and rebuttal
21 testimony of Ms. McGraw, and for the admission at the end
22 of cross-examination of Ms. McGraw's exhibits. With
23 that, I tender this witness for cross-examination.

24 JUDGE WALLACE: Thank you, Mr. Burgess.
25 You're frozen on the screen, but I could hear you fine.
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1 Is there any objection to binding in the revised direct
2 testimony and rebuttal testimony of Ms. McGraw? (No
3 response.)

4 Hearing none, the testimony is bound in.
5 (Testimony bound in.)

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STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of)
CONSUMERS ENERGY COMPANY)
for Approval of an Integrated Resource Plan)
under MCL 460.6t, certain accounting)
approvals, and for other relief.)
_____)

Case No. U-21090

REVISED DIRECT TESTIMONY
OF
EMILY A. MCGRAW
ON BEHALF OF
CONSUMERS ENERGY COMPANY

December 2021

EMILY A. MCGRAW
REVISED DIRECT TESTIMONY

1 **Q. Please state your name and business address.**

2 A. My name is Emily McGraw, and my business address is One Energy Plaza, Jackson,
3 Michigan 49201.

4 **Q. By whom are you employed and what is your present position?**

5 A. I am employed by Consumers Energy Company (“Consumers Energy” or the “Company”)
6 as ~~Director of Residential Demand Response~~Executive Director of Demand Side
7 Management.

8 **Q. Please review your educational background.**

9 A. I graduated from Michigan State University with a Bachelor of Science in Mechanical
10 Engineering.

11 **Q. Please describe your business and professional experience.**

12 A. I started my career at Consumers Energy in 2005 as a gas engineer in a rotational program
13 designed for recent college graduates. During this time, I rotated through four gas business
14 units working on short-term projects.

15 In 2006, I took a position as a gas transmission pipeline engineer where I was
16 responsible for designing high pressure gas pipeline facility installations.

17 In 2010, I took a position as a Project Manager for Gas Storage, Compression,
18 Pipeline, and Metering & Regulation capital construction projects. There, I was
19 responsible for managing the cost, scope, and schedule by developing project plans,
20 managing project budgets, contractor oversight, and managing project schedules to meet
21 equipment outage windows.

22 In 2014, I took a position as a Program Manager for Residential Energy Efficiency
23 Programs and was responsible for program design, management, and coordination of

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REVISED DIRECT TESTIMONY

1 energy efficiency programs to deliver energy savings goals. In 2018, I was promoted to
2 Director of Residential Demand Response where I was responsible for the Company's
3 Residential Demand Response ("DR") programs and pilots. In July of 2021, I was
4 promoted to Executive Director of Demand Side Management.

5 **Q. What are your responsibilities as ~~Director of Residential Demand Response~~Executive**
6 **Director of Demand Side Management?**

7 A. In this position, I am responsible for the Company's ~~Residential Demand Response ("DR")~~
8 ~~programs and pilots.~~Energy Waste Reduction ("EWR") and DR programs.

9 **Q. Have you previously testified before the Michigan Public Service Commission**
10 **("MPSC" or the "Commission")?**

11 A. Yes. I have previously testified before the MPSC in Consumers Energy's 2018 DR
12 Reconciliation Case, Case No. U-20563; Consumers Energy's 2019 DR Reconciliation
13 Case, Case No. U-20766; and Consumers Energy's 2020 DR Reconciliation Case, Case
14 No. U-21080.

15 **Q. What is the purpose of your direct testimony?**

16 A. The purpose of my direct testimony is to provide a description of the Company's existing
17 and proposed DR portfolio, which includes the business and residential DR programs and
18 the assumptions associated with the DR programs within the Integrated Resources Plan
19 ("IRP"), as well as describing the capital cost the Company is requesting the Commission
20 approve for DR programs as authorized by Section 6t of Public Act 341 of 2016, and
21 explain the proposed recovery of these costs. The Company's DR programs have been
22 incorporated into the Company's Proposed Course of Action ("PCA") based on modeling
23 performed. As shown in Exhibit A-82 (EAM-1), under the PCA, the level of DR increases

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1 from 607 MW in 2022 to 698 MW in 2030 and then remains constant at that level through
 2 2040.

3 **Q. How is your direct testimony organized?**

4 A. My direct testimony is organized as follows:

5 **SECTION I: CURRENT DEMAND RESPONSE PORTFOLIO**

6 **SECTION II: PROJECTED COST AND MW**

7 **SECTION III: CHANGES FROM PREVIOUS FILINGS**

8 **SECTION IV: DEMAND RESPONSE PILOTS**

9 **SECTION V: EXECUTION RISKS**

10 **SECTION VI: PERFORMANCE INCENTIVE**

11 **SECTION VII: SUMMARY**

12 **Q. Are you sponsoring any exhibits with your direct testimony?**

13 A. Yes. I am sponsoring the following exhibits:

14 Exhibit A-82 (EAM-1) Projected DR Program Size by Year;

15 Exhibit A-83 (EAM-2) Projected DR Program Cost by Year;

16 Exhibit A-84 (EAM-3) 2020 Demand Response Annual Report; and

17 Exhibit A-85 (EAM-4) Consumers Energy's 2020 Demand Response
 18 Potential Study.

19 **Q. Were these exhibits prepared by you or under your direction or supervision?**

20 A. Yes.

21 **SECTION I: CURRENT DEMAND RESPONSE PORTFOLIO**

22 **Q. Please describe the Company's DR Portfolio.**

23 A. The Company offers a DR portfolio consisting of both business and residential programs.

24 The intent of the DR Portfolio is that collectively the reduction in peak load will relieve

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REVISED DIRECT TESTIMONY

1 stress on the electric system in a more cost-effective manner than purchasing capacity from
2 the market or building additional generation resources to meet peak demand. The 2020
3 DR Annual Report, Exhibit A-84 (EAM-3), provides an overview of 2020 DR programs,
4 activities, and achievements.

5 **Q. Please describe the business DR programs.**

6 A. The Company has three tariff-based business DR rate programs: Interruptible Rate GI
7 (“GI”), Interruptible Rate GI2 (“GI2”), and Energy Intensive Primary Rate (“EIP”). In
8 addition to the three tariff-based Interruptible Rate DR programs, the Company offers a
9 business DR Program that is a contractual program targeted towards business customers
10 interested in curtailing demand that are not currently on an interruptible or retail open
11 access rate. Each business customer that signs up for the contractual program is contracted
12 for a specified load (kW) reduction during events for the program year of June 1 through
13 September 30. The contract sets forth the program parameters, including the program
14 period, timing and frequency of events, mandatory versus voluntary economic events,
15 minimum advanced notification time, primary contacts to receive event notifications, how
16 performance will be calculated, rules regarding non-performance, and the compensation
17 the customer will receive for the capacity provided. Customers in the business DR Program
18 affirm that their load can be reduced up to four hours per event for up to 10 events per DR
19 season. The Company’s business DR Program offers both an emergency and an economic
20 program option. Customers can participate in the emergency program and choose to add
21 the voluntary economic program to their contract. The Company works with business
22 customers to set up an Energy Reduction Plan (“ERP”) at their facilities that will be
23 implemented when a DR event is called. These DR events are initiated by the Midcontinent

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1 Independent System Operator, Inc. (“MISO”) during times of system emergencies, i.e., a
2 time when electricity demand and cost are highest. A number of business customers of
3 different sizes are enrolled through this process to create a resource that can be called upon
4 during peak times of system usage to reduce overall electricity demand. When MISO
5 expects the grid to be strained because of high electric demand or during high market costs,
6 a notification is sent out to all of the business customers within the portfolio ahead of the
7 emergency event, informing them of when they need to reduce load. When the emergency
8 event occurs, they follow their established ERP, thus decreasing their electric demand.
9 Events can be emergency events called by MISO or economic events initiated by the
10 Company to reduce or shift peak demand.

11 **Q. How does the business DR Program differ from Interruptible rate GI and the EIP**
12 **rate?**

13 A. Both the GI and the EIP rates are filed tariffs with specific capacity and energy billing
14 parameters, whereas the Company’s business DR Program is a negotiated contract with
15 customers for reducing demand during events. Like the GI and EIP capacity resources, the
16 business DR Program is made up of demand curtailment commitments of a portfolio of
17 business customers. If a business DR participant fails to deliver 100% of their total
18 nominated kW for an Emergency Event ordered by the Company, the customer shall forego
19 all payments if the average delivered capacity for the event is less than their contracted
20 amount and the customer shall be assessed the real time commodity price (\$/MWh), as
21 determined by the MISO Midwest Energy Market, for the kWh curtailment which was
22 underperformed per event. The real time commodity price is capped at \$1,000/MW. There
23 are no direct financial consequences to participants who do not shed load during economic

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REVISED DIRECT TESTIMONY

1 events, other than the lack of incentive payments (i.e., payments for capacity and energy at
2 the time the demand event is called). The financial benefit to participating business
3 customers is less significant with the business DR Program than with a GI or EIP rate to
4 recognize the reduced risk for customers and the reduced duration of the program as the
5 business DR program operates June 1 through September 30th only.

6 **Q. Please describe the methodology used to determine the trigger condition.**

7 A. As outlined in Company witness Michael C. Grondin's direct testimony in Case No.
8 U-20766, the Company's Electric Supply Operations Planning Department is responsible
9 for forecasting the hourly electric load each day and for selecting and deploying the
10 least-cost resource mix to meet that hourly load on a daily basis. To accomplish this, the
11 Company developed market price and load levels that, when exceeded, indicate that
12 economic DR resources should be considered and dispatched. For example, during the
13 summer of 2020, the Company calculated the trigger conditions to be based on market
14 prices of \$75/MWh and a 4- hour load forecast exceeding 27,000 MWh. The Company's
15 business economic DR Program is available for up to 10 system peak events over the
16 summer. Additionally, all of the DR resources are available for up to 10 emergency events
17 to meet MISO requirements. For planning purposes, the Company estimated 3 to 4 events
18 per month in June through August and 1 event in September.

19 **Q. How are business DR participants compensated for reducing their electric load
20 during peak demand events?**

21 A. Participants are compensated for capacity and energy reductions during events. The
22 capacity payment is tied to kW of reduction delivered, and the energy payment is based on
23 kWh reduction during events. Both are measured from an established baseline. Incentive

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1 payments are priced for market competitiveness and are a component of the overall cost of
2 having and managing a DR capacity resource. These payments are made to customers
3 through a bill credit at the end of the program season.

4 **Q. Please describe the Company's residential DR programs.**

5 A. In 2017, the Company launched two Commission-approved residential DR programs as
6 part of its Peak Power Savers® Program: AC Peak Cycling and Dynamic Peak Pricing. In
7 2020, the Company commercialized its Smart Thermostat pilot by rapidly growing
8 participation from 2,500 customers in 2019 to over 25,000 customers in 2020. Similar to
9 business DR programs, the residential DR programs are designed to give the Company a
10 flexible energy resource that can be used during times of peak electricity demand to reduce
11 power supply costs that directly impact all of our generation customers.

12 **Q. Please describe the AC Peak Cycling ("ACPC") Residential DR Program.**

13 A. ACPC is a direct load control program in which the Company installs a load control switch
14 on the outside of a customer's home on or near their central AC unit. During peak event
15 days the Company activates the switch to cycle the output of the central AC unit to reduce
16 load during the event. The central AC unit cooling system returns to normal once the
17 cycling event ends. The load control peak demand reduction is achieved using the
18 Advanced Metering Infrastructure ("AMI") and ZigBee two-way communication
19 technology. Load management may occur any weekday (excluding holidays) between 7
20 a.m. and 8 p.m. for no more than an eight-hour period in any one day and may be
21 implemented to maintain system integrity, for economic reasons, or when there is
22 insufficient system generation available to meet anticipated system load. Load
23 management may only occur outside of the hours of 7 a.m. and 8 p.m. during a declared

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1 Midcontinent Independent System Operator, Inc. (“MISO”) emergency. The program is
2 available for 5 emergency events and 10 economic events.

3 **Q. How are customers incentivized to participate in the ACPC Program?**

4 A. Customers enrolling in ACPC received a gift card and a monthly bill credit of \$8.00 during
5 the June 1 through September 30 DR season.

6 **Q. Please describe the residential Dynamic Peak Pricing (“DPP”) Program.**

7 A. The Company’s DPP Program was designed to encourage customers to move energy
8 consumption to off-peak hours by providing less expensive rates at these times. In
9 addition, the program provides incentives for customers to reduce their energy use during
10 DR events. The more energy usage participants shift from peak hours, the more they can
11 save.

12 The Company offers two DPP programs: Critical Peak Pricing (“CPP”) and Peak
13 Time Rewards (“PTR”). The goals of the two pricing options are identical, but the
14 approach to achieve them is different. The CPP option replaces the standard on-peak
15 energy charge participants pay with a much higher critical peak energy charge on event
16 days in exchange for lower off-peak rates all summer long. This is generally referred to as
17 a “stick” incentive to encourage customers to shift demand. Alternatively, the PTR option
18 offers customers an incentive payment of \$1.00 in bill credits for every kWh of energy they
19 save during the event, compared to their typical use during those same hours. This is
20 generally referred to as a “carrot” incentive. Load management may occur on any weekday
21 (excluding holidays) between 7 a.m. and 8 p.m. for no more than an eight-hour period in
22 any one day and may be implemented to maintain system integrity, for economic reasons,
23 or when there is insufficient system generation available to meet anticipated system

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1 load. Load management may only occur outside of the hours of 7 a.m. and 8 p.m. during
2 a declared MISO emergency. The program is available for 14 events between June and
3 September and 5 events between October and May.

4 **Q. Please describe the Smart Thermostat Program (“STP”).**

5 A. The STP was launched as a pilot in 2019 and commercialized to a full-scale program in
6 2020. STP is a direct load control program that utilizes cloud-based software deployed
7 through the customer’s wi-fi thermostat to control the air conditioning load of residential
8 customer’s homes. The vendor software features algorithms customized on a per-home
9 basis that balance demand reduction while maintaining individual customer comfort
10 preferences. Load management may occur on any weekday (excluding holidays) between
11 7 a.m. and 8 p.m. for no more than an eight-hour period in any one day and may be
12 implemented to maintain system integrity, for economic reasons, or when there is
13 insufficient system generation available to meet anticipated system load. Load
14 management may only occur outside of the hours of 7 a.m. and 8 p.m. during a declared
15 MISO emergency. The program is available for 9 economic events and 5 emergency
16 events.

17 **Q. How are customers incentivized to participate in the STP?**

18 A. The program offers two enrollment tracks: a Bring Your Own Device (“BYOD”) track;
19 and an online marketplace track. Through the BYOD track, customers who already own
20 an eligible smart thermostat receive an initial gift card. Through the online marketplace
21 track, customers may purchase a new thermostat and receive an instant discount, which
22 includes an Energy Waste Reduction (“EWR”) rebate, making many thermostats free for
23 combination-fuel customers and heavily incentivized or free for electric customers. All

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1 customers who remain enrolled in the pilot at the end of DR event season receive a \$25
2 gift card.

3 **SECTION II: PROJECTED COST AND MW**

4 **Q. What level of DR is currently included in the Company's base plan and in the PCA?**

5 A. Exhibit A-82 (EAM-1) shows projected levels of DR by program type and year. In the DR
6 plan, as shown in Exhibit A-82 (EAM-1), Consumers Energy plans to: (i) maintain the DPP
7 at approximately 10 MW through the study period; (ii) increase A/C Cycling from
8 approximately 45 MW in 2021 to 72 MW by 2031; (iii) increase the STP from
9 approximately 22 MW in 2021 to 88 MW by 2031; (iv) Develop new Smart Business DPP
10 program beginning in 2023 to increase to 13 mw by 2031; (v) increase C&I DR from
11 221 MW in 2021 to 315 MW by 2031; and (iv) maintain Rate GI and EIP at 2023 levels of
12 151 MW and 50 MW, respectively. The Company chose the levels included in the PCA
13 based on a combination of factors, including historical program performance, DR savings
14 levels included in the IRP in Case No. U-20165, and the Demand Response Potential Study
15 ("Potential Study") developed by Cadmus and Demand Side Analytics ("DSA"), as
16 illustrated in Exhibit A-85 (EAM-4). Additionally, per the requirements of the 6t statute
17 on the Company's IRP, the Company also considered scenarios incorporating the existing
18 State of Michigan Demand Response Potential Study ("AEG Statewide DR Study").

19 **Q. Please describe the Potential Study, as illustrated in Exhibit A-85 (EAM-4).**

20 A. The Potential Study aimed to achieve two primary research objectives: 1) develop
21 estimates of demand reduction potential; and 2) provide disaggregate amounts of DR
22 potential and the associated costs for use in the Company's IRP modeling. In addition, the

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1 Potential Study includes best practices and DR trends in the electric industry consistent
2 with the settlement agreement in Case No. U-20165.

3 **Q. Please describe Exhibit A-83 (EAM-2).**

4 A. Exhibit A-83 (EAM-2) shows historical and projected levels of capital and Operating and
5 Maintenance (“O&M”) for 2019 through 2040 that are necessary to achieve the DR MW
6 included in the PCA. This includes capital and O&M to achieve and maintain the 607 MW
7 included in the Company’s Base Outlook along with incremental capital and O&M
8 necessary to achieve the incremental savings included in the PCA.

9 **Q. Please identify the DR costs the Company is requesting that the Commission**
10 **determine are reasonable and prudent for cost recovery purposes in this proceeding.**

11 A. Consumers Energy requests approval of capital costs in the amount of \$23.7~~5~~1 million.
12 This amount is for the period January 1, 2023 through June 30, 2025, and is incremental to
13 the capital costs the Company has requested in its current electric rate case, Case No.
14 U-20963. This consists of \$23.3~~2~~ million of Base Outlook capital expenditures, and
15 \$0.4~~1~~ million of incremental capital expenditures, for 2023, 2024, and the prorated six
16 months of 2025. The Base Outlook Capital Expenditures for 2023 forward are consistent
17 with the levels requested in Case No. U-20963 and are necessary to maintain the 607 MW
18 approved in the Company’s 2018 IRP filing in Case No. U-20165. Consumers Energy
19 requests approval of O&M in the amount of \$3.1 million. This amount is for the period
20 January 1, 2023 through June 30, 2025, and is incremental to the O&M expenses the
21 Company has requested in Case No. U-20963. Consumers Energy requests approval of
22 the performance incentive in the amount of \$26.3 million. This amount is for the period
23 May 31, 2022 through June 30, 2025, and is based on a 20% performance incentive

EMILY A. MCGRAW
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1 consistent with the Company's request in the 2019 DR Reconciliation in Case No. U-20766
2 and with the performance incentive costs included in Potential Study and IRP modeling.
3 The 2022 Performance Incentive is not included in Case No. U-20963 and will be
4 recovered as part of the 2022 DR Reconciliation that will be filed in 2023.

5 **SECTION III: CHANGES FROM PREVIOUS FILINGS**

6 **Q. Are there differences between the DR ramp-up strategy outlined in the Company's**
7 **2018 IRP and the strategy in the PCA in this filing?**

8 A. Yes. Exhibit A-82 (EAM-1) identifies the DR included in the PCA consistent with the
9 existing DR Program accomplishments and the Consumers Energy DR Potential Study
10 findings. The Company's 2018 IRP called for DR resources to reach 1,250 MW by 2031.
11 The current PCA calls for approximately 700 MW by 2031. This change is due to the
12 impacts of EWR measures, as detailed by Company witness Steven Q. McLean, on the
13 Company's overall load forecast and peak demand. Additionally, beginning in 2021, the
14 Company implemented their Summer Peak Rate to all residential customers. This rate will
15 lower residential on peak demand by 3.5%; equating to 119 MWs of on peak demand
16 reduction included in the load forecast for the IRP analysis period, as shown in Exhibit
17 A-82 (EAM-1) and as also detailed in the testimony of Company witness Eugene M.
18 Breuring. DR potential from a mandatory time of use rate, like the Summer Peak Rate,
19 was detailed in the AEG Statewide DR Study commissioned by the State of Michigan as a
20 base Time-Of-Use ("TOU") tariff with a 116 MW DR potential by 2019 and 258 MW
21 potential by 2020 (page 55 of report).¹ While the Company does not intend to consider the
22 Summer Peak Rate a DR resource, the tariff is still achieving the objective of shifting load

¹ https://www.michigan.gov/documents/mpsc/State_of_Michigan_-_Demand_Response_Potential_Report_-_Final_29sep2017__602435_7.pdf

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1 away from off-peak times and, as such, will limit the Company's ability to further reduce
2 demand to the levels in the IRP in Case No U-20165.

3 **SECTION IV: DR PILOTS**

4 **Q. Have the residential and business pilot costs and projected MW reductions been**
5 **incorporated into this filing?**

6 A. The Company has requested costs for currently approved and proposed pilots as part of the
7 current electric rate in in Case No. U-20963 and as such are included in the O&M Base
8 Outlook costs in this filing. These are pilot costs only and would not reflect the dollars
9 needed to bring the product to scale. The pilot MW results have yet to be determined
10 through customer participation and, as such, the Company has only included potential MW
11 reductions in the DR glidepath that are identified in its Potential Study. The Potential Study
12 includes a new Small Business DPP Program that would offer a significantly reduced
13 volumetric rate, except on event days when the retail rate increases to approximately
14 \$1 per kW during the critical peak window, similar to the residential DPP program that the
15 Company currently offers. The Company will follow the guidelines for pilot
16 implementation as established in Case No. U-20645.

17 **SECTION V: EXECUTION RISKS**

18 **Q. Has the Company identified any execution risks associated with implementation of**
19 **business DR programs within the PCA?**

20 A. Yes. The Company has identified execution risks associated with increasing business DR
21 to the levels identified in the DSA and included in the PSA. These risks primarily result
22 from including smaller to medium sized business customers in the program, driving the
23 average MW reduction per program participant down. The current design of the business

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REVISED DIRECT TESTIMONY

1 DR Program has fixed cost per participant for license fees, facility set-up costs, and
2 hardware. As the average MW reduction per customer falls, the cost per MW increases.
3 To account for this risk, the Company is not currently providing load monitoring equipment
4 to customers that nominate under 100kW per location. The Company continues to study
5 options to utilize new and/or existing platforms to capture the data from smaller business
6 customers. Additionally, the Company is currently evaluating risks regarding the
7 implementation of the Energy Intensive Primary rate. The intent of the tariff, much like
8 the residential DPP rate, was for MISO based pricing signals during time of an emergency
9 event to be significant enough to lower customer usage. Current MISO market pricing has
10 been lower than previously anticipated during peak hours and the Company is working to
11 understand the impacts on EIP customer load and participation.

12 **Q. Has the Company identified any execution risks associated with implementation of**
13 **residential DR programs within the PCA?**

14 A. Yes. In addition to the execution risk related to the Summer Peak Rate listed on page 12,
15 lines 16 through 23 of my testimony, the Company has identified that customer acquisition
16 and interactive effects could present risks to increasing residential DR to the levels
17 identified in the in the PCA.

18 **Q. Does the company plan to deliver on the MW targets by program as indicated in**
19 **Exhibit A-82 (EAM-1)?**

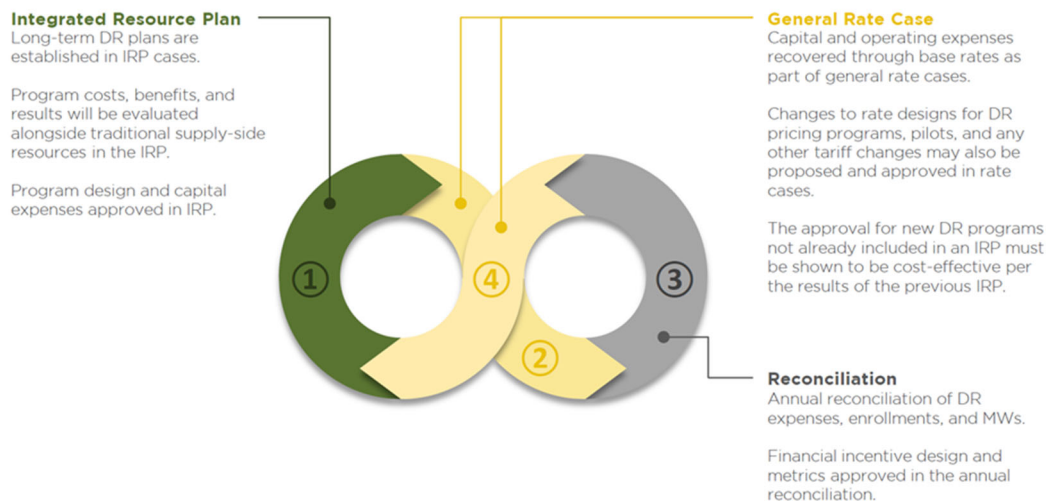
20 A. While the Company intends to deliver on the MW targets in aggregate, it sees the need for
21 flexibility to balance MWs between programs taking into account factors such as product
22 cost and customer demand.

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 REVISED DIRECT TESTIMONY

SECTION VI: PERFORMANCE INCENTIVE

Q. Please describe the regulatory framework for DR.

A. In its September 15, 2017 Order in Case No. U-18369 (“September 15 Order”), the Commission established a three-phase approach to addressing DR with: (i) capital costs approved in an IRP considered prudent and reasonable for recovery; (ii) O&M costs reviewed and approved in the general rate case; and (iii) an annual reconciliation proceeding in which actual capital spending will be reconciled with the amount approved in the IRP and recovered in the rate case, while O&M spending will be reconciled against the amount approved and recovered in the general rate case.



Q. Why is a DR performance incentive important for encouraging utility investments in DR programs?

A. As recognized by the Commission in its September 15 Order approving this regulatory framework, having a stable regulatory framework is a necessary condition for implementing the minimum level of DR resources, but it is not a sufficient condition for encouraging utilities to maximize their use of these resources. In its comments on the DR

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1 regulatory framework, the Advanced Energy Management Alliance (“AEMA”) mentioned
2 the disparity that exists between the necessary and sufficient conditions for encouraging
3 investments in DR resources. AEMA’s Comments filed on August 31, 2017, in Case No.
4 U-18369, assert that “...demand-response will not truly be on equal footing with generation,
5 even if there is a comparable consideration in the regulatory process. From a utility’s
6 perspective, they are worse off if they invest in a program for which they cannot earn a
7 return than if they invest in a capital project where returns are guaranteed. Given a
8 fiduciary duty to shareholders [investing in demand-response resources] may be an
9 imprudent choice for the utility even if it is the best choice for their customers.”²

10 While the Company does consider the cost impact of its actions on customers, it
11 has traditionally used supply-side resources to address increases in customer demand.
12 Indeed, prior to 2017, the Company only had a relatively small amount of DR resources
13 enrolled under its standard interruptible tariff. The Company had focused its efforts on
14 resources that satisfied both its regulatory requirement of providing affordable service to
15 customers and its fiduciary requirement of providing a return on investment to
16 shareholders. But, much like energy efficiency, which was not used by utilities in
17 Michigan until a stable regulatory framework and performance incentive was established
18 under Public Act 295 of 2008, the Commission now has an opportunity to approve a DR
19 performance incentive to promote utility investments in cost effective demand-side
20 resources. Without a performance incentive, the Company would likely not increase its
21 DR portfolio to the levels outlined in the PCA.

² September 15 Order, page 10.

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REVISED DIRECT TESTIMONY

1 **Q. Has the Company included the expected performance incentive amount in its**
2 **projected DR costs in Exhibit A-82 (EAM-1))?**

3 A. Yes. The Company included the impacts of their proposed 20% performance incentive
4 mechanism and included it in the program costs provided to DSA who modeled the cost
5 information in the Consumers Energy Potential Study.

6 **SECTION VII: SUMMARY**

7 **Q. Please summarize your direct testimony.**

8 A. As outlined in my direct testimony, the Company has existing and proposed DR programs
9 which are incorporated into the IRP. As such, the Company is requesting that the
10 Commission determine as reasonable and prudent for cost recovery purposes the capital
11 costs that are incremental to those proposed in Case No. U-20693, which are for the time
12 period January 1, 2023 through June 30, 2025.

13 **Q. Does this conclude your direct testimony?**

14 A. Yes.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of)
CONSUMERS ENERGY COMPANY)
for Approval of an Integrated Resource Plan)
under MCL 460.6t, certain accounting)
approvals, and for other relief.)
_____)

Case No. U-21090

REBUTTAL TESTIMONY
OF
EMILY A. MCGRAW
ON BEHALF OF
CONSUMERS ENERGY COMPANY

November 2021

EMILY A. MCGRAW
REBUTTAL TESTIMONY

1 **Q. Please state your name and business address.**

2 A. My name is Emily A. McGraw, and my business address is One Energy Plaza, Jackson,
3 Michigan 49201.

4 **Q. Are you the same Emily A. McGraw who previously submitted direct testimony in**
5 **this proceeding on behalf of Consumers Energy Company (“Consumers Energy” or**
6 **the “Company”)?**

7 A. Yes.

8 **Q. What is the purpose of your rebuttal testimony?**

9 A. The purpose of my rebuttal testimony is to: (i) address multiple witnesses who commented
10 on the Financial Incentive Mechanism (“FIM”) associated with Demand Response (“DR”) investment, including Association of Businesses Advocating for Tariff Equity (“ABATE”) witnesses Jessica A. York and James R. Dauphinais, Citizens Utility Board of Michigan (“CUB”) witness David Gard, Attorney General (“AG”) witness David E. Dismukes (speaking specifically to Evaluation Measurement & Verification (“EM&V”)), as well as MPSC (“Michigan Public Service Commission” or the “Commission”) Staff (“Staff”) witnesses Roger A. Doherty and Paul A. Proudfoot; (ii) address Staff witness Doherty’s (a) recommendation that DR be modeled at a program instead of portfolio level, (b) concerns about DR resource performance during Regional Transmission Organization (“RTO”) emergencies, (c) concerns about the cost effectiveness of DR, and (d) claim that DR Operating and Maintenance (“O&M”) should not be approved in the Integrated Resource Plan (“IRP”); (iii) address Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club (“MNSC”) witness Chris Neme’s concern that DR is undervalued because (a) transmission and distribution (“T&D”) costs were excluded and

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1 (b) average line losses were used; and (iv) address CUB witness Gard's (a) concern about
2 residential DR projections in the Proposed Course of Action ("PCA") being too
3 conservative, (b) assessment of which line loss factors should have been used in the
4 Cadmus study, (c) assertion that the Cadmus study should have estimated potential for
5 developing technologies and expanded DR programs, (d) claims that the study uses
6 simplistic assumptions about customer motivations and behaviors, (e) claims that the study
7 ignored winter DR potential, (f) claims that the study does not fully consider extreme
8 weather, and (g) claims that the study's electric load forecast was arguably too low.

9 **Q. Are you sponsoring any exhibits with your rebuttal testimony?**

10 A. No, I am not.

11 **Q. Please describe the parties' recommendations for the FIM associated with DR**
12 **investment.**

13 A. On page 3, line 23, of ABATE witness York's direct testimony, Ms. York recommends the
14 rejection of the Company's request for an FIM amount of \$26.3 million associated with
15 DR expenditures being included in its PCA in this proceeding based on her contention
16 starting on page 28, line 1, that the actual dollar amount of any FIM earned by Consumers
17 Energy should be determined and approved in DR Reconciliation proceedings. ABATE
18 witness Dauphinais restates this position on page 6, line 37, of his testimony. This position
19 is shared by CUB witness Gard; on page 13, line 8, of his direct testimony where Mr. Gard
20 suggests that the Company's request for 20% performance incentive on all DR non-capital
21 expenses should be rejected in favor of the incentive and structure approved by the
22 Commission in U-20766. Staff witnesses Doherty and Proudfoot both additionally state
23 that preapproval of DR Incentive costs is inappropriate because DR incentive amounts are

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1 subject to change through the DR reconciliation process and the company's O&M costs
2 should be evaluated in rate cases.

3 **Q. Does the Company agree with witnesses York, Dauphinais, Gard, Doherty, and**
4 **Proudfoot that DR cost recovery and incentives should not be approved through the**
5 **IRP process?**

6 A. No. The Company believes assurance of cost recovery is beneficial when planning to help
7 encourage investment in DR resources. The Company understands that actual approval of
8 DR incentive costs will change through the DR reconciliation process as defined in
9 Case No. 18369. Further, using the 20% FIM did not have a material impact on the study.
10 A lower incentive may improve cost effectiveness but would also reduce the economic
11 incentive for the Company to promote DR.

12 **Q. Describe Staff witness Proudfoot's contention that O&M costs for DR programs and**
13 **DR incentive costs should not explicitly be approved in an IRP.**

14 A. Beginning on page 25, line 10, of his direct testimony, Staff witness Proudfoot states that
15 he does not believe O&M costs for DR programs should be evaluated in the Company's
16 rate cases as established by the Commission in its September 15, 2017 Order in
17 Case No. U-18369. He further contends that DR incentive amounts are subject to change
18 annually through the DR reconciliation process also defined in Case No. U-18369 and
19 pre-approving costs that have not yet been determined is unreasonable.

20 **Q. Does the Company agree that O&M costs for DR programs and DR incentive costs**
21 **should not explicitly be approved in an IRP case?**

22 A. No. The Company believes assurance of cost recovery is beneficial when planning to help
23 program investments and encourage investment in DR programs. Unlike traditional

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1 supply-side resources that require significant capital investment, load reductions from DR
2 are based on customer participation which is funded largely through O&M spending. This
3 spending is mostly a combination of customer incentives, marketing outreach to customers,
4 development and implementation of pilots to test new DR products, and program
5 administration including EM&V. Company earnings from DR programs are based on
6 capital investment and an incentive mechanism that is depended on program performance
7 and O&M spending. Like capital investment in supply-side resources, pre-approval of the
8 DR O&M spending gives the Company planning assurance with regard to future
9 investment and earnings. Pre-approval of the DR programs O&M will not alter the fact
10 that the actual DR spending will be reviewed and approved during rate cases and DR
11 reconciliation proceedings. It will, however, send a clear signal that the Commission
12 supports recovery of the spending and associated incentive at the Company's requested
13 level. The Company believes assurance of cost recovery is beneficial when planning to
14 help encourage investment in DR resources.

15 **Q. Please describe AG witness Dismukes's position on Financial Incentive in future with**
16 **EM&V.**

17 A. Starting page 4, line 17, of AG witness Dismukes's direct testimony, Mr. Dismukes
18 recommends the Commission heavily scrutinize the allowed financial incentive provided
19 to the Company to ensure ratepayers are receiving the promised net benefits.

20 **Q. What is the Company's response to witness Dismukes's position regarding future**
21 **EM&V?**

22 A. As previously stated, the Company believes incentives are integral to planning and
23 encouraging development of demand side resources. The Company is committed to

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1 operating a cost-effective DR program and funds an independent EM&V consultant to
2 perform analysis of program performance that gives the Company and stakeholders a line
3 of sight into the benefit that DR programs provide to rate payers. As part of the Rate Case
4 and Reconciliation process, the Commission can review the cost effectiveness of the
5 portfolio.

6 **Q. Please describe Staff witness Doherty's recommendation regarding the methods,
7 feasibility, and usefulness of offering DR resources into the model at a program level
8 instead of as a portfolio.**

9 A. Beginning on page 16, line 12, of Staff witness Doherty's direct testimony, Mr. Doherty
10 recommends that the Company explore methods, feasibility, and usefulness of offering DR
11 resources into the model at a program level instead of as a portfolio based on the contention
12 that individual program characteristics could allow the model to select certain DR
13 programs over others to better fit a certain capacity need.

14 **Q. Does the Company agree with Staff witness Doherty's recommendation?**

15 A. The Company mostly agrees with Staff witness Doherty that the Company should explore
16 the feasibility and usefulness of offering DR resources into the model at a program level
17 instead of as a portfolio; however, doing this will likely increase administrative costs
18 creating additional consideration. The administrative costs necessary to implement the
19 programs are spread throughout all the programs; to the extent a program is not selected,
20 the costs end up shifting to another program. Regardless of how the programs are modeled
21 within the IRP, it will be necessary to continue to review the DR program holistically
22 at the portfolio level to fully incorporate and understand program operations and cost
23 effectiveness.

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1 **Q. Please describe Staff witness Doherty’s concern with DR resource performance**
2 **during RTO emergencies.**

3 A. On page 23, line 1, of Mr. Doherty’s direct testimony, he outlines general concerns Staff
4 has with DR performance during RTO events. RTO issues have been at the forefront of
5 MPSC activity since the 2019 polar vortex due to the poor performance of certain DR
6 resources at the time Staff believes there is a greater need to improve the performance of
7 DR during emergencies. The other concern outlined is related to the cost-effectiveness of
8 DR.

9 **Q. Does the Company agree with Staff witness Doherty’s concern about resolving issues**
10 **related to DR performance during RTO emergencies?**

11 A. Yes. The Company will continue to work with our DR customers to align with and improve
12 communication about their DR needs. Improvement in these areas is especially necessary
13 between the Company and its DR customers during Midcontinent Independent System
14 Operator, Inc. (“MISO”) maximum generation events. The Company had been improving
15 the program and has updated Company emergency electrical procedures to align with
16 MISO timing. Specific program improvements that Company has implemented include a
17 weekly communication to commercial and industrial (“C&I”) customers to clearly indicate
18 event likelihood; enhanced support into the C&I customer experience which includes portal
19 assistance, reminders, and job aides; as well as engineering assistance for nominations and
20 energy reduction plans, communication testing, and curtailment testing.

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1 **Q. Does the Company agree with Staff witness Doherty regarding issues with the cost**
2 **effectiveness of DR?**

3 A. The Company understands Staff's concerns and will continue to make improvements to
4 enhance the cost effectiveness of DR, including event performance improvement, process
5 optimization, and leveraging data and automation to improve efficiency.

6 **Q. Please describe MNSC witness Neme's concern that DR was undervalued because**
7 **T&D costs were excluded and average line losses were used.**

8 A. Beginning on page 23, line 3, of MNSC witness Neme's testimony, Mr. Neme discusses
9 how the Company's assessment of energy efficiency in IRPs provides an inaccurate picture
10 of the cost-effectiveness of DR. Mr. Neme believes that DR was undervalued for two main
11 reasons, including failure to include avoided T&D costs and for using average loss rates
12 rather than marginal peak loss rates. Mr. Neme also believes the Commission should
13 require that DR include T&D and marginal peak loss rates in future IRP analyses.
14 Additionally, CUB witness Gard shares the concern about T&D avoided costs being left
15 out.

16 **Q. Does the Company agree with witness Neme's conclusion regarding DR being**
17 **undervalued because T&D costs were excluded?**

18 A. The Company believes the impact of excluding T&D costs is limited. The T&D avoided
19 costs are location specific and need to be tied to avoiding or deferring a specific capital
20 upgrade. The potential study assumption reflects the fact that MISO's market for ancillary
21 services for small, disaggregated resources is currently limited. While not included in the
22 broader IRP, the Company plans to explore concentrated DR as a non-wires alternative.

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1 **Q. Does the Company agree with Mr. Neme's assertion that DR was undervalued**
2 **because average line losses were used over marginal peak loss rates?**

3 A. While the Company agrees that the assertion is technically correct, the difference would
4 have no material impact on study outcomes. This is especially true given 74% of the
5 MW in PCA were modeled top-down from system loads; thus, there is no loss assumption
6 used at all.

7 **Q. Does the Company agree with Mr. Neme that avoided T&D costs and marginal line**
8 **losses should be included in future IRP analyses?**

9 A. The Company is agreeable to exploring the benefits of including these in future cases. It
10 will require additional coordination between the IRP team, distribution planners, and the
11 potential study team to determine appropriate values and the best way to model in Aurora.
12 It will be important to carefully consider the mechanics. The Company would gladly take
13 any suggestions Mr. Neme has based on what has and has not worked well in other
14 jurisdictions.

15 **Q. Please describe CUB witness Gard's concerns regarding the Company's DR**
16 **programs.**

17 A. Starting on page 3, line 6, of Mr. Gard's testimony, Mr. Gard expresses concern about
18 residential DR projections in the PCA being too conservative. This view stems from
19 Mr. Gard's belief that the Cadmus study on which the projections are based had multiple
20 limitations which serve to underestimate DR potential.

21 **Q. Does the Company believe the DR projections in the PCA are too conservative?**

22 A. No. Any of the changes suggested by Mr. Gard would only have marginal impacts on the
23 Company's models. The Company believes that the projections are accurate and represent

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1 a realistic level of savings based on the overall level of DR capacity selected for the IRP
2 modeling.

3 **Q. Please describe witness Gard's explanation of what line loss factors should have been**
4 **used in the Cadmus study.**

5 A. Beginning on page 5, line 1, of Mr. Gard's direct testimony, Mr. Gard explains that a line
6 loss factor of 7.73% would have been a more reasonable assumption for residential DR
7 than the line loss factor of 3.7% used in the Cadmus study that applied to residential and
8 business customers. Mr. Gard believes that using 7.73% would have increased the
9 cost-effectiveness and savings potential of residential DR program options. He goes on to
10 refer to the Guidehouse study completed for the Commission which uses electric line loss
11 between 6-8% for cost-effectiveness calculations to support his claim that the line loss
12 factor should have been higher.

13 **Q. Does the Company agree that using a higher line loss factor would have been more**
14 **reasonable?**

15 A. No. The line loss factor of 3.7% is more aligned with the loss factor used to convert
16 installed capacity (UCAP) to unforced capacity (UCAP) and Zonal Resource Credit. Using
17 the higher line loss factor would have no impact on largest offering in our DR portfolio.
18 The DR potential for Business Load Curtailment programs uses a "top-down" approach
19 using forecasts of system load. System loads are inclusive of line losses, so the line
20 assumption in the study has no impact.

21 **Q. Describe Mr. Gard's testimony related to future DR programs and technologies.**

22 A. On page 8 of his direct testimony, Mr. Gard quotes the Cadmus study stating "only
23 estimated potential from known and defined offerings" was considered. Mr. Gard

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1 describes this as a salient limitation because it is unrealistic to assume that no additional
2 DR programs and technologies would be developed between 2030 and 2040 for the
3 purposes of IRP planning.

4 **Q. Does the Company agree that the Cadmus study should have estimated potential for**
5 **developing technologies and expanded DR programs?**

6 A. No. Energy Waste Reduction and DR resources selected in the IRP, by definition, displace
7 other generation resources. It is important that the resources identified are proven and the
8 Company can acquire and depend on the reductions for reliability reasons.

9 **Q. Describe the Mr. Gard's discussion of the limitations of the Cadmus study.**

10 A. Starting on page 9, line 1, of Mr. Gard's direct testimony, Mr. Gard identifies four
11 additional perceived limitations of the Cadmus study, including claims the study uses
12 simplistic assumptions about customer motivations and behaviors, the study ignored winter
13 DR potential, the study does not fully consider extreme weather, and the study's electric
14 load forecast was arguably too low.

15 **Q. Does the Company agree that the Cadmus study used simplistic assumptions about**
16 **customer motivations and behaviors?**

17 A. No. The customer segmentation and propensity modeling was complex and used data from
18 actual Consumers Energy enrollment campaigns and studies from California and New
19 York. The Commission's own statewide study through Guidehouse assumes all customers
20 deliver the same kW impact and historic enrollments will continue at a linear rate over
21 20 years. The Company's experience has been that residential DR enrollment becomes
22 more difficult over time and it is difficult to sustain the early program growth rates long
23 term.

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1 **Q. Does the Company believe accounting for winter DR potential would impact the level**
2 **of DR selected?**

3 A. No. The Company agrees that there is some value in winter DR; however, summer peaks
4 are the core constraint the IRP model seeks to solve. Both the Company as well as MISO
5 have summer-peaking systems. The current IRP planning framework allocates the value
6 of avoided generation capacity to summer peaks and, thus, DR programming seeks to
7 satisfy those planning requirements.

8 **Q. Does the Company believe the Cadmus study should have fully considered extreme**
9 **weather?**

10 A. In the context of an IRP, it is important that assumptions regarding DR capability are
11 aligned with the weather conditions in the peak load forecast. To estimate DR capability
12 at 105°F when the forecast assumes 95°F would create misalignment. While the Company
13 agrees with Mr. Gard that DR capability would be greater at extreme temperatures, it would
14 not equate to acquiring more DR. Even if the MW of the Smart Thermostat Program would
15 be higher during a heat wave, the number of participants and costs are the same.

16 **Q. Does the Company agree the electric load forecast is too low?**

17 A. No. As described by Company witness McLean in his direct testimony, the Company
18 worked with Cadmus to develop an analysis of the impact of heating electrification. Based
19 on the analysis, the Company determined that heating electrification would not have a
20 meaningful impact on the Company's load forecast during the IRP planning horizon. The
21 Company will continue to evaluate new potential DR and will include the most up-to-date
22 levels in future IRP filings.

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1 | **Q. Does this concluded your rebuttal testimony?**

2 | A. Yes.

1 JUDGE WALLACE: Is there any objection to
2 admitting Exhibits A-82 through A-85? (No response.)

3 Hearing none, those exhibits are
4 admitted.

5 All right. Please proceed, Ms. Hillyer.

6 MS. HILLYER: Thank you, your Honor.

7 CROSS-EXAMINATION

8 BY MS. HILLYER:

9 Q Good afternoon, Ms. McGraw.

10 A Good afternoon.

11 Q My name is Holly Hillyer, and I'm representing the
12 Citizens Utility Board of Michigan today.

13 You confirmed that you have access to the
14 Sharepoint, correct?

15 A Yes.

16 Q O.K. I'm going to mostly ask you about your rebuttal
17 testimony, but also some of your discovery responses.
18 Those discovery responses are in the folder marked, let's
19 see, it says CUB and then hearing exhibits, and there
20 should be a PDF for each response, so I might direct you
21 to those throughout your testimony today. And I think to
22 try to move along more quickly, what I'd like to do is
23 discuss those with you and then get them all admitted at
24 the end, if possible. If there are any that we don't
25 discuss during your testimony, we can go over those at
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1 the very end and you can look at those again. Does that
2 sound all right?

3 A Yes.

4 Q And will you understand what I'm referring to if I talk
5 about the Cadmus Study, that was your Exhibit A-85,
6 correct?

7 A Yes.

8 Q So how long have you been with Consumers?

9 A Sixteen years.

10 Q And I understand you've just received a promotion, right;
11 is that the new title?

12 A Yes, that is true.

13 Q Congratulations. So what is your current role now?

14 A My current role is Executive Director of Demand Side
15 Management.

16 Q And what does that involve?

17 A That involves energy waste reduction and demand response
18 customer-facing programs.

19 Q O.K. And have you been involved in the IRP process
20 before?

21 A Yes, I have.

22 Q And what role did you play in the previous IRP?

23 A In the previous IRP, I was the Director of Residential
24 Demand Response.

25 Q O.K. So I have five topics I want to try to cover, and I
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1 want to try to do them quickly. The first one is the
2 financial incentive mechanism. So I understand Consumers
3 is seeking a 20-percent incentive on certain DR expenses;
4 is that correct?

5 A That is correct.

6 Q And CUB's witness, David Gard, recommended that the
7 Commission maintain the current incentive, which was
8 recently established in Case No. U-20766, correct, and
9 that would be discussed I think for the first time on
10 page 2 of your rebuttal testimony, lines 19 to 22?

11 A Yes, that's correct.

12 Q O.K. And you disagreed with that recommendation, right?

13 A Correct.

14 Q Could you briefly describe what the current incentive is
15 for me?

16 A The current incentive is 15-percent return on O&M
17 expenses.

18 Q O.K. And you said on page 3, line 9, of your rebuttal,
19 that using the 20-percent incentive in the study did not
20 have a material impact on the study, correct?

21 A Correct.

22 Q Did you perform any calculations or do any kind of
23 analysis to determine what the impact was between using
24 15 percent versus 20 percent?

25 A We did model the study with a 15-percent return; I do not
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1 have those, I do not know those numbers.

2 Q So can you tell me what the basis was for concluding that
3 the difference wasn't material?

4 A The IRP modeling selected megawatts up to certain cost-
5 effective levels, and those levels will likely not to
6 have been impacted by small changes in DR costs.

7 Q O.K. You said likely, right?

8 A I did say likely.

9 Q Is it fair to say that you're not sure?

10 A No, I don't think it is fair to say that. I think it
11 is -- a material impact would be, could mean different
12 things.

13 Q O.K. What -- so what does material mean to you?

14 A Significant impact.

15 Q O.K. You could probably guess my next question, but what
16 would you describe as significant, what does significant
17 mean to you; can you put like a number value to it?

18 MR. BURGESS: Your Honor, I'm going to
19 object here. The witness has already stated that she
20 didn't have a specific numerical number for the analysis,
21 and so digging further into what a specific number would
22 be, what significant would be, is not going to be a
23 productive cross here.

24 MS. HILLYER: May I respond, your Honor?

25 JUDGE WALLACE: Yes, you may.

1 MS. HILLYER: This will probably come up
2 a couple more times because the witness uses the term
3 material a lot in her conclusions, so I am just trying to
4 get a better understanding what she means when she uses
5 that word.

6 JUDGE WALLACE: O.K. The objection is
7 overruled. If we -- if material means like a large
8 number and we don't know what the number is, let's see if
9 we can figure out what it means if it doesn't mean a
10 specific number that was not calculated.

11 MS. HILLYER: I'll ask a different
12 question.

13 Q (By Ms. Hillyer): Do you know who would know that, who
14 could give us that information?

15 A No.

16 Q O.K. New topic then. So on page 7 of your rebuttal
17 testimony, lines 3 to 5, you talk about cost
18 effectiveness and how Consumers plans to continue making
19 improvements to enhance the cost effectiveness of DR, and
20 you list a couple of things; event performance
21 improvement, process optimization, and leveraging data
22 and automation to improve efficiency. So could you tell
23 us more about your plans for those three things?

24 A Event performance, an example of event performance
25 improvement would be improving the load shift that occurs
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1 during a demand response event. An example of process
2 optimization would be internal processes for dispatching
3 an event, making sure that events are dispatched more
4 efficiently. And an example of leveraging data and
5 automation to improve efficiency would be enhanced
6 enrollment functionality for, to make it easier for
7 customers to enroll and to process those enrollments
8 internally.

9 Q And are those all improvements that you'll be doing in
10 your department or that people will be doing at your
11 direction?

12 A Yes.

13 Q O.K. Do you have a timeline for completing those,
14 implementing those?

15 A No.

16 Q Is there -- have any of those ever started?

17 A Yes, many of them have started.

18 Q And how are they coming along?

19 A Well, well.

20 Q But no timeline for completing them?

21 A I would say improvements to enhance the cost
22 effectiveness, those are ongoing; event performance
23 improvement is mostly complete; and then process
24 optimization, leveraging data, those are larger in nature
25 and ongoing as well.

1 Q O.K. The event performance improvement, were those --
2 you had listed some items, I think it was your discovery
3 response, it's in the folder marked as CUB's proposed
4 Exhibit 3, and you listed some improved program
5 communications and text notifications; is that what you
6 were referring to, or are these something else?

7 MR. BURGESS: I'm sorry. Is this CUB's
8 response for the Discovery Response 613 that we're
9 referring to?

10 MS. HILLYER: Yes.

11 A Those are some of them, they aren't all of them, as
12 listed in Discovery Response 613.

13 Q (By Ms. Hillyer): O.K. Thanks. And while we are
14 looking at discovery responses, the next one, which is
15 marked as CUB's proposed Exhibit 4, which was a response
16 to CUB's Discovery Request 614, CUB had asked how much
17 improvement you thought might be possible beyond what's
18 currently reflected in the PCA, and you said that the
19 Company had not quantified that yet, correct?

20 A That's correct.

21 Q Do you have a plan to quantify that in the future?

22 A Not necessarily. The costs reflected in the IRP are at
23 cost-effective levels and include many of the
24 improvements that I just spoke of, and so we don't
25 necessarily have plans to quantify that.

1 Q O.K. The next topic I want to talk about is the line-
2 loss factor. So going back to your rebuttal testimony,
3 page 8, toward the top, lines 3 and 4, there was some
4 discussion about using average line losses versus
5 marginal peak losses, and you said that using one over
6 the other would make no material impact on the study
7 outcomes, correct?

8 A Correct.

9 Q And now back to the discovery responses -- I'm sorry to
10 send you back and forth here -- this is CUB's proposed
11 Exhibit 5, which is your response to Request 615. CUB
12 had asked you to explain what you used to support the
13 conclusion that there would be no material impact, and
14 you said that a higher line-loss factor would increase
15 the level of DR megawatts included in the PCA, but said
16 that increased line losses would not have a meaningful
17 impact on cost-effective DR program offerings and
18 enrollments. Did I read that right?

19 A Yes.

20 Q So what calculations did you perform to determine the
21 impact of using the higher line-loss factor?

22 A We looked at the percent of the PCA portfolio that is C&I
23 and residential, and the majority of that portfolio is
24 C&I, 74 percent is C&I; line-loss factors are not
25 calculated for those customers, they are, you know,
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1 system loads, and so that change in line-loss factor
2 would apply only to residential customers, which is a
3 small amount of the PCA.

4 Q So did you -- did you compare the, for residential
5 customers, did you compare the differential between using
6 the higher line-loss factor just for that segment,
7 because that's still a quarter of the program, right?

8 A That's correct.

9 Q O.K. Would it -- so would it be fair to say, though,
10 that using the higher line-loss factor could make a
11 difference on the impact of residential DR?

12 A Yes, it could.

13 Q Do you have any plans to evaluate the impact of the
14 different line-loss factors in the future?

15 A The Company is agreeable to exploring looking at that.

16 Q And do you have a sense of what, on what kind of timeline
17 that exploration might take place?

18 A No, I do not.

19 Q What would be involved in looking at that; is there data
20 you have to gather, math, like --

21 A I don't know.

22 Q O.K. So moving on to another topic, the transmission and
23 distribution, the T&D costs, on page 7 of your rebuttal
24 testimony, at line 18, you said: The Company believes
25 the impact of excluding T&D costs is limited. Is that
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1 right?

2 A Yes.

3 Q And have you performed any calculations to determine that
4 impact, meaning the impact of excluding the T&D costs?

5 A The potential study values demand response by looking at
6 the value that these resources provide through
7 registration with MISO, and so the Company believes that
8 by excluding T&D costs, the impact would be minimal
9 because MISO's market for ancillary services for like the
10 small disaggregated resources that T&D, avoided T&D costs
11 would deliver is small, so the benefit is small.

12 Q O.K. So there may be a benefit, but it would be a small
13 one, right?

14 A Yes.

15 Q And in your response to another discovery request, this
16 is CUB's proposed Exhibit 9, and this was your response
17 to Discovery Request 619, you said: The Company believes
18 the most accurate way to reflect T&D cost savings would
19 be including location-specific cost savings, but
20 maintaining would be a significant undertaking for DR
21 benefit-cost screening. Is that right?

22 A That is right.

23 Q So could you explain why, why is using the location-
24 specific data, why is that the most accurate way to
25 reflect the T&D cost savings?

1 A Because those will reflect real numbers versus the
2 alternative that would be a system-wide average, and an
3 average by nature is less accurate.

4 Q Do you think that using an average is an acceptable
5 alternative if you don't have location-specific data?

6 A I would say it's a potential alternative; whether or not
7 it's acceptable, I can't say.

8 Q What kind of undertaking would it involve to get the
9 location-specific information?

10 A At a high level, it would involve recognizing areas that
11 require a capital infrastructure investment and tracking
12 the levels of demand response deployed at those locations
13 to confirm that a capital investment was in fact
14 deferred.

15 Q And you said that that would be significant for DR
16 benefit-cost screening, right?

17 A I don't think I understand what you mean.

18 Q So are there other reasons besides DR cost screening why
19 you might want to undertake gathering that data, making
20 those investments, whatever this undertaking would be,
21 are there other reasons you might want to do that besides
22 for just the DR benefit-cost screening?

23 A I don't know. My area of expertise is demand response,
24 so I couldn't answer beyond that.

25 Q And also on page 8 of your rebuttal testimony, at line 9,
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1 you said that: The Company's agreeable to exploring the
2 benefits of including avoided T&D costs and marginal line
3 losses in future cases. So what would that exploration
4 involve?

5 A It would require, as I say in my rebuttal testimony on
6 page 8, coordination between the IRP team, as well as
7 distribution planners, the potential study team, and then
8 the team that models, models in Aurora.

9 Q And is that something that the Company is planning to do
10 at this time?

11 A Not necessarily, however, the Company is agreeable to
12 exploring that.

13 Q So what would it take for the Company to agree to explore
14 that?

15 A I can not answer that because it involves cross-
16 functional stakeholders beyond just myself and my team.

17 Q O.K. Fair enough. And last question on this topic
18 really, if you go to your response to CUB's Discovery
19 Request 616, so this is proposed CUB Exhibit 6, CUB asked
20 if conducting this exploration would cover additional
21 value in residential DR programs beyond what's reflected
22 in the current PCA, and you said that it could presumably
23 increase the benefits of residential DR. Do you have any
24 sense of how much those benefits could increase?

25 A It's my expert opinion that it would be minimal. I say
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1 this based on my experience with non-wire alternatives
2 and looking at locations that are good candidates for a
3 non-wire alternative effort, and there are minimal
4 locations.

5 Q So like minimal, you've identified minimal, a minimum
6 number of locations or minimum amount of value that you
7 could get out of locations that you've identified?

8 A A minimal amount of locations.

9 Q O.K. So in addition to the avoided T&D costs and the
10 marginal line losses that we talked about, your rebuttal
11 testimony responds to some other recommendations that
12 Witness Gard made, right?

13 A That's correct.

14 Q And overall, Witness Gard's testimony was that the
15 residential DR projections in the PCA were too
16 conservative, and those were based on this Cadmus Study,
17 correct?

18 A That's correct.

19 Q And Witness Gard said that the Cadmus Study had some
20 limitations that resulted in those projections being too
21 low and recommended some changes to those, to assumptions
22 that were made in the study, right?

23 A Correct.

24 Q And on page 8 of your rebuttal testimony, line 22, you
25 said that any of the changes suggested by Mr. Gard would
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1 only have marginal impacts on the Company's modules. Did
2 you mean any individually, did you mean all of them in
3 the aggregate?

4 A Would you please clarify which assumptions you are
5 referring to, or recommendations rather?

6 Q So I guess I'm actually trying to figure out which ones
7 you were referring to when you said any of the changes he
8 suggested, because he -- we talked about the line-loss
9 factors and the T&D, and then I think if you look at the
10 bottom of page 9 going onto page 10, there are several
11 more, so there's that the study did not estimate the
12 potential for developing technologies and new DR programs
13 after 2030, the study used simplistic assumptions about
14 customer motivations and behaviors for estimating
15 enrollment in DR programs, the study ignored winter DR
16 potential, the study did not fully consider extreme
17 weather, and the study relied on an electric load
18 forecast that was too low. Were those all of them? I
19 think those were all of them.

20 A Yes.

21 Q So when you say any of the changes suggested by Mr. Gard
22 would only have marginal impacts on the Company's models,
23 you're referring to all of those?

24 A Yes.

25 Q O.K. And if we look at CUB's proposed Exhibit 5, which
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1 is your response to CUB's Discovery Request 615, that was
2 your response related to the line losses, correct?

3 A Correct.

4 Q And then CUB's proposed Exhibit 617 -- or CUB 7, which is
5 your response to Discovery Request 617, asked you about
6 this question, does any of the changes suggested by
7 Mr. Gard would only have impact on the Company's models,
8 and you referred back to your response to Discovery
9 Request 615, which just addressed the line levels. So do
10 you have any other basis for your conclusion about all of
11 those other suggested changes?

12 A Yes. I can address them individually if you like. We
13 can start with estimating the potential for developing
14 technologies.

15 Q O.K.

16 A Yeah, so it's important that the resources that the
17 potential study evaluates are known and proven resources
18 since they displace supply side resources. While it's
19 true that there may be additional technologies in the
20 future, they aren't proven and they aren't -- they aren't
21 a given, and the programs that we modeled are the very
22 same programs that are implemented at other utilities
23 across the nation and have been for several years, so we
24 have captured the majority of the, of demand response
25 resources.

1 I can go now to Gard's statement that the
2 study uses simplistic assumptions about customer
3 motivations.

4 Q Let me ask you one quick followup. So the DR programs
5 that exist today, did those exist ten years ago?

6 A Some of them did, some of them did not.

7 Q So it's fair to say that had someone done this same
8 analysis ten years ago, they might have underestimated
9 the potential looking ahead to 2021 if they had only used
10 existing programs from ten years ago, right?

11 A No, I don't think that that is fair to say because DR
12 programs have actually been overestimated in the past
13 because there was limited information, limited
14 experience, and now that there is more experience with
15 the programs, we're more accurately able to predict that
16 load reduction that these programs provide.

17 Q Can you give me an example of that?

18 A Well, in general terms, I can use our first potential
19 study as an example where the Company used preliminary
20 data and benchmarking data to estimate load reduction
21 from its AC cycling program that has not come to bear.

22 Q Do you know why that is?

23 A Because the resource wasn't as effective as estimated.

24 Q When you say effective, do you mean that people aren't
25 using it, or was it a technology issue, was it a

1 promotion marketing rollout issue, like what happened?

2 A I'm trying to think of the best way to explain this on
3 simple terms. It is a capability issue. So it doesn't
4 have to do with how many customers are enrolled or
5 customer adoption, but rather when a demand response
6 event is executed, the load shift isn't as high as
7 predicted in the first IRP, which can be for a number of
8 factors, like, you know, the size of the customer's air
9 conditioner, for example.

10 Q O.K. And I think this actually sort of brings us to our
11 next topic which was some of the assumptions underlying
12 customer enrollment, right?

13 A Uh-huh.

14 Q And I understand you submitted Exhibit A-84, which was an
15 annual report, right?

16 A Yes.

17 Q And that talked about how Consumers exceeded its customer
18 enrollment targets for its smart thermostat program?

19 A Yes.

20 Q And CUB asked you in discovery, this was proposed Exhibit
21 CUB 8, and in your response to CUB's Discovery Request
22 618, CUB asked whether or not Consumers was making
23 adjustments to the methodology that it used to estimate
24 enrollment in future DR programs, understanding that you
25 had exceeded your target in the smart thermostat program,
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1 and you said you don't believe exceeding STP enrollment
2 targets in the future is realistic, right?

3 A That's correct.

4 Q And what was that belief based on?

5 A It was based on those, based on the rationale included
6 actually in that very same discovery response that
7 enrollment rates begin to decline as customers, as
8 customers with the highest propensity to enroll are
9 already enrolled, et cetera.

10 Q So is it fair to say that those, I guess those factors
11 that affected enrollment for this program at this time
12 were unexpected when you were projecting your enrollment
13 numbers, when you were first setting the targets I guess?

14 A Yes, at the time that we established the enrollment
15 targets for the smart thermostat program in 2020, those
16 factors were unknown.

17 Q And that resulted in higher than expected enrollment?

18 A Yes.

19 Q So is there a reason why you don't think that at some
20 point in the future for other programs the same kind of
21 thing would happen? Do you think you need to adjust your
22 methodology at all based on your experience in what you
23 learned about those unexpected factors popping up?

24 A Based on my experience, I do not think that the
25 methodology should be adjusted. I hope that there are
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1 reasons in the future to allow -- you know, that enable
2 us to exceed our enrollment targets, but the opposite
3 could be true and have a detrimental impact on the
4 Company's ability to meet its capacity requirements.

5 Q So what about targets for other types of programs,
6 because I believe you responded to the question as far as
7 exceeding STP enrollment targets in the future; do you
8 intend to change your methodology for any other types of
9 programs?

10 A No.

11 Q O.K. And I think the last question I have about the
12 whole group of changes that Witness Gard suggested is
13 about winter DR potential. On page 11 of your rebuttal
14 testimony, you acknowledge that there's some value in
15 that, right?

16 A Yes.

17 Q And have you performed any calculations to determine how
18 much value?

19 A Those calculations are in progress right now as part of
20 the Company's gas demand response pilots.

21 Q Do you have a sense of how long it will take to complete
22 those?

23 A Likely the end of 2022.

24 Q And any preliminary plans on how you would respond to
25 those once you determine that value?

1 A It is unlikely that those, that that value or those
2 results would have a bearing on the Company's IRP process
3 because the IRP is aimed at addressing the summer peak.

4 Q O.K. So is it fair to characterize your testimony as
5 sometimes acknowledging that some of Witness Gard's
6 suggestions might have some small impact, but that none
7 of those suggestions are significant enough for Consumers
8 to change those assumptions for the purposes of this IRP?

9 A Can you -- I just want to make sure I follow. Can you
10 repeat that back?

11 Q Sorry. Yeah. So like we've reviewed the line-loss
12 factor, and you said that that, you know, could have some
13 impact, but not a meaningful impact; and we looked at the
14 impact of transmission and distribution costs, and you
15 acknowledged that the location-specific cost data would
16 be the most accurate way to evaluate the DR benefit, but
17 that that would be too significant an undertaking; and
18 you acknowledged, you know, that the winter potential
19 would have some value, but that it wouldn't be
20 significant in this context; so is it fair to sort of
21 fair to characterize your testimony as being that these
22 suggested changes don't have enough significance for
23 Consumers to use them in this current IRP?

24 MR. BURGESS: Your Honor, I'm going to
25 object here based on asked and answered. To
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1 Ms. Hillyer's point, we've just gone through each and
2 every one of these specific topics, and the witness has
3 responded to each of these, so to re-summarize these
4 again I believe is a little bit of a waste of time.

5 JUDGE WALLACE: Ms. Hillyer.

6 MS. HILLYER: Your Honor, I just would
7 like to kind of like to bring this together and see that,
8 if that's correct, would the witness agree, though, that
9 sometimes small changes when they're bundled together can
10 have a significant impact in the aggregate.

11 A Is that directed at me or Mr. Burgess? Ian is frozen, so
12 I am unable able to see what he's doing.

13 MR. BURGESS: I can hear, so --

14 MS. HILLYER: Your video locks up every
15 once in a while, your audio seems O.K.

16 JUDGE WALLACE: Yeah, I believe it was
17 directed at you, Ms. McGraw, whether or not a bunch of
18 small changes might make a difference in the DR level
19 that the model spits out in the end.

20 A I think it is possible, but that the potential study was
21 not modeled that way, so it is very difficult for me to
22 estimate what the outcome or the impact might be.

23 MS. HILLYER: O.K. Well, the last thing
24 I'd like to do is, while we have the witness, to move for
25 admission of her discovery responses, and I think we
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1 ended up discussing all of them on the record today, so
2 these are Exhibits CUB-3, -4, -5, -6, -7, -8, and -9, and
3 they all correspond to Discovery Requests 613 through
4 619, and I can say that they haven't been modified in any
5 way other than to add the proposed exhibit number to the
6 header of each document. So I'd like to move for the
7 admission of those exhibits at this time.

8 JUDGE WALLACE: Thank you. Is there any
9 objection to the admission of Exhibits CUB-3 through
10 CUB-9?

11 MR. BURGESS: The Company has no
12 objections, your Honor.

13 JUDGE WALLACE: Thank you. Hearing none,
14 those exhibits are admitted.

15 Mr. Burgess, would you -- actually, we're
16 about due for a break anyway in 39 seconds, so let's take
17 a 10-minute break and then come back if you have any
18 redirect for Ms. McGraw, and then we are moving on to
19 Ms. Prentice after that. So I'll see you all back here
20 in ten minutes. Off the record. Thank you.

21 MS. HILLYER: Thanks, your Honor.
22 Thanks, Ms. McGraw.

23 THE WITNESS: Thank you.

24 (Recess at 3:01 p.m.)

25 - - -

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1 (Back on the record at 3:18 p.m.)

2 JUDGE WALLACE: Mr. Burgess, do you have
3 any redirect for Ms. McGraw?

4 MR. BURGESS: The Company has no
5 redirect, your Honor.

6 JUDGE WALLACE: O.K. Thank you very
7 much, Ms. McGraw, and you are excused.

8 THE WITNESS: Thank you.

9 (The witness was excused.)

10 - - -

11 JUDGE WALLACE: All right. So we're
12 changing to Mr. Gensch, then Mr. Soules.

13 MR. BEACH: Correct, your Honor. There
14 he is, Mr. Gensch.

15 MR. GENSCH: So I'm talking to the
16 witness, and all the internet just went out in the
17 office. So she is trying to connect and working on it
18 right now. But as of now, she can't connect to the
19 Teams.

20 JUDGE WALLACE: O.K. Let's go off the
21 record for a few minutes.

22 (Off the record from 3:19 p.m. to 3:26 p.m.)

23 - - -

24 JUDGE WALLACE: O.K. Ms. Prentice, there
25 were two Teams meeting invitations. The Teams meeting
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1 that you're on right now, and then there's another one --
2 Mr. Soules, do you expect to be going into a confidential
3 hearing?

4 MR. SOULES: Yes, the majority of the
5 examination will be on the confidential record.

6 JUDGE WALLACE: O.K. So you have that
7 meeting invite as well?

8 THE WITNESS: Yes.

9 JUDGE WALLACE: O.K.

10 MR. SOULES: Could I ask another question
11 while we're -- before we get started?

12 JUDGE WALLACE: Yes.

13 MR. SOULES: Ms. Prentice, did you
14 receive an email from the Company's attorneys with a set
15 of confidential hearing exhibits?

16 THE WITNESS: I did.

17 MR. SOULES: O.K. Great. And you also
18 have access to the SharePoint?

19 THE WITNESS: I do.

20 MR. SOULES: Perfect. Great. Nice to
21 meet you, by the way.

22 THE WITNESS: Thank you. You too.

23 JUDGE WALLACE: O.K. All right. So
24 everybody is connected. Everybody is back. Lori, is it
25 you or is it Marie who is going to be -- Marie, is it
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1 you?

2 COURT REPORTER: Yes, it's Marie.

3 JUDGE WALLACE: All right. And you also
4 have the invitation to the confidential session?

5 COURT REPORTER: I do. It takes me a
6 little bit longer than everybody else, but I do.

7 JUDGE WALLACE: Yes. I have to actually
8 physically leave and then go into the other one, so. All
9 right. Well, if everybody is all set to go then, Mr.
10 Gensch, please present your next witness.

11 (Brief discussion with MPSC IT personnel regarding
12 the confidential invite.)

13 MR. WATERS: Hang on one second. Don't
14 say a word.

15 JUDGE WALLACE: Mr. Waters?

16 MR. WATERS: I have not received a
17 confidential invite.

18 JUDGE WALLACE: Oh. Well, hold on one
19 second. I thought that I did send that to you on Sunday,
20 but if I didn't, I will. You should have it.

21 MR. WATERS: You may have. It may be the
22 spam filter, you know, caught it. I'm sorry.

23 JUDGE WALLACE: That's all right.

24 Actually I have two computers going so hold on one second
25 and I will forward it from this one. My work computer is
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1 more reliable.

2 MR. WATERS: O.K. Thank you.

3 JUDGE WALLACE: Mr. Waters, we're not in
4 the confidential session yet, and you should receive
5 that.

6 MR. WATERS: I have received it, your
7 Honor. Thank you.

8 JUDGE WALLACE: All right. So we're all
9 set. We're back on the record in Case No. U-21090. Mr.
10 Gensch, please go ahead.

11 MR. GENSCHE: Yes. Thank you, your Honor.
12 Consumers Energy calls Heather Prentice to the stand.

13 COURT REPORTER: Ms. Prentice, this is
14 the Court Reporter. Raise your right hand, please.

15 - - -

16 H E A T H E R M. P R E N T I C E
17 was called as a witness on behalf of Consumers Energy
18 Company and, having been duly sworn to testify the truth,
19 was examined and testified as follows:

20 JUDGE WALLACE: Ms. Prentice, is there
21 anyone physically present with you in the room?

22 THE WITNESS: No.

23 JUDGE WALLACE: Thank you. And what
24 materials and devices do you have with you?

25 THE WITNESS: Just my computer, my e-mail
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1 is open just so I can switch to the other confidential
2 session when necessary. And then for materials, I have
3 my rebuttal testimony and the documents provided in the
4 email from MEC this morning that Mr. Soules was asking me
5 about.

6 JUDGE WALLACE: O.K. All right. I just
7 want to caution you that there can be no unapproved
8 communication between you and other persons, witnesses,
9 and so forth during cross-examination. And with that, I
10 will go back to Mr. Gensch.

11 MR. GENSCH: Thank you, your Honor.

12 DIRECT EXAMINATION

13 BY MR. GENSCH:

14 Q Ms. Prentice, will you please state your full name for
15 the record?

16 A It's Heather M. Prentice.

17 Q And by whom are you employed?

18 A Consumers Energy.

19 Q And what is your job title with Consumers Energy?

20 A I'm the Director of Environmental Compliance Risk
21 Management and Governance.

22 Q And did you cause to be prepared a document entitled
23 Rebuttal Testimony of Heather M. Prentice on behalf of
24 Consumers Energy Company, which consists of a cover page
25 and six pages of questions and answers?

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1 A I did.

2 Q Are there any changes that you wish to make at this time
3 to your rebuttal testimony?

4 A No, there are not.

5 Q And is this the testimony you are adopting as your own
6 today?

7 A It is.

8 MR. GENSCH: And your Honor, I will note
9 that there is a both a confidential version and redacted
10 version of Ms. Prentice's rebuttal testimony.

11 And at this time the Company moves to
12 bind in the rebuttal testimony of Heather M. Prentice,
13 with the confidential version of Ms. Prentice's testimony
14 bound into the confidential record.

15 JUDGE WALLACE: And there is no exhibits?

16 MR. GENSCH: No exhibits, your Honor.

17 JUDGE WALLACE: All right. Is there any
18 objection to binding in the public and confidential
19 rebuttal testimony of Ms. Prentice? Hearing none, the
20 testimony is bound in.

21 (Public testimony is bound in.)

22 (Confidential testimony will be bound into the
23 Confidential Record.)

24 - - -

25

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of)
CONSUMERS ENERGY COMPANY)
for Approval of an Integrated Resource Plan)
under MCL 460.6t, certain accounting)
approvals, and for other relief.)
_____)

Case No. U-21090

REDACTED
REBUTTAL TESTIMONY
OF
HEATHER M. PRENTICE
ON BEHALF OF
CONSUMERS ENERGY COMPANY

November 2021

HEATHER M. PRENTICE
REBUTTAL TESTIMONY

1 **Q. Please state your full name, title, business address, and by whom you are employed.**

2 A. My name is Heather M. Prentice, and my business address is 1945 W. Parnall Road,
3 Jackson MI 49201. I am employed by Consumers Energy Company (“Consumers Energy”
4 or the “Company”) as the Director of the Environmental Compliance, Risk Management
5 & Governance section of the Environmental and Laboratory Services Department.

6 **Q. Please describe your educational background and work experience.**

7 A. I graduated from Ohio Northern University in 1999 with a Bachelor of Science degree in
8 Civil Engineering with an Environmental Option. I am a Registered Professional Engineer
9 in the states of Michigan and Ohio. My environmental investigation and remediation work
10 experience spans over 20 years and includes a variety of technical and managerial
11 responsibilities as an environmental consultant.

12 After graduating in 1999, I started working for Water Resources & Coastal
13 Engineering, a consulting firm based in Solon, Ohio. As a project engineer, my
14 responsibilities included modification of the facilities planning reports for the City of
15 Cleveland’s four major water treatment plants per review comments, analysis of pump
16 performance for various service levels (pressure zones), and estimation of the construction
17 costs for various projects recommended in the plan. I then worked at Camp, Dresser &
18 McKee in its Cleveland, Ohio office. As project engineer, I managed tasks from multiple
19 projects including odor sampling, soil removal, water treatment, and regional storm-water
20 drainage study projects. Project tasks included developing contract drawings and
21 specifications for the removal of soil stockpiles, interacting with regulatory agencies,
22 preparing construction cost estimates for water treatment equipment, developing public

HEATHER M. PRENTICE
REBUTTAL TESTIMONY

1 education materials, and hydrologic and hydraulic modeling of interjurisdictional
2 watersheds.

3 In October 2001, I accepted a position with NTH Consultants, Ltd. (“NTH”) in
4 Lansing, Michigan. Throughout my career at NTH, I assumed increasing levels of
5 responsibility from staff engineer, to assistant project engineer, and to project engineer on
6 a variety of environmental and civil projects. Projects included due diligence assessments,
7 subsurface explorations, underground storage tank (“UST”) removal and closure, and
8 risk-based contaminant exposure evaluations. More specifically, I managed and performed
9 numerous Phase I Environmental Site Assessments (“ESAs”) in accordance with American
10 Society for Testing and Materials standards and United States Environmental Protection
11 Agency All Appropriate Inquiry. Based on the Phase I ESA results, I planned and
12 completed Phase II ESAs to characterize and delineate the horizontal and vertical extents
13 of contamination. When appropriate, Baseline Environmental Assessments and due-care
14 plans were prepared in accordance with Michigan Department of Environment, Great
15 Lakes and Energy (“EGLE”) guidelines. I have remediated and closed several USTs. I
16 also have extensive construction management experience, including bid specification
17 package development, trade contractor procurement and management, field oversight of
18 construction and demolition projects, and associated documentation and report preparation.

19 After nine years in consulting, I accepted a position at Consumers Energy in August
20 2008. I was initially hired to serve as the project engineer and construction manager for
21 the Little Traverse Bay Environmental Project. In this role, I managed the design and
22 implementation of remedial strategies to address water impacted by cement kiln dust that
23 was entering Little Traverse Bay. Some of the specific responsibilities included managing

HEATHER M. PRENTICE
REBUTTAL TESTIMONY

1 the project reserve, serving as the day-to-day interface with regulators, maintaining
2 compliance with the final agreement with the State of Michigan, and interfacing with the
3 impacted stakeholders. I also held the overall responsibility for project permitting, the
4 adequacy of engineering design, selection of the contractors, project scopes, schedules, and
5 budgets.

6 In January 2014, I became supervisor of the Risk Management group within the
7 Environmental Compliance, Risk Management & Governance section of the
8 Environmental and Laboratory Services Department. In this role, I became familiar with
9 the status of the 23 Manufactured Gas Plant (“MGP”) sites being managed by the
10 Company. I served as the technical resource to the project managers and assisted with
11 aligning the direction of the MGP Program. In January 2015, I became the Director of the
12 Environmental Compliance, Risk Management & Governance section of the
13 Environmental and Laboratory Services Department.

14 **Q. What are your responsibilities as Director of Environmental Compliance, Risk**
15 **Management & Governance?**

16 A. As Director of Environmental Compliance, Risk Management & Governance, I am
17 responsible for Environmental Compliance Assurance (corporate-wide environmental
18 management system implementation), Environmental Risk Management (assessing and
19 mitigating corporate environmental risks), and Environmental Governance to help ensure
20 the Company maintains its strong record of excellent environmental stewardship. An
21 integral part of the Environmental Risk Management function includes planning, directing,
22 and controlling the investigation and remediation/risk management at former MGP sites
23 and Comprehensive Environmental Response, Compensation, and Liability Act sites

HEATHER M. PRENTICE
REBUTTAL TESTIMONY

1 where Consumers Energy is a responsible party. My section also supports the natural gas
2 and electric operating organizations of Consumers Energy regarding the investigation and
3 remediation of environmental contamination. The Risk Management section is also
4 responsible for conducting environmental due diligence assessments for the acquisition,
5 sale, lease, and licensing of Consumers Energy property.

6 **Q. What is the purpose of your rebuttal testimony?**

7 A. The purpose of my rebuttal testimony is to address and rebut the testimony of Michigan
8 Environmental Council, Natural Resources Defense Council, and Sierra Club (collectively
9 “MNS”) witness Douglas B. Jester regarding [CONFIDENTIAL] [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

HEATHER M. PRENTICE
REBUTTAL TESTIMONY

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

HEATHER M. PRENTICE
REBUTTAL TESTIMONY

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED] [END CONFIDENTIAL]

18 **Q. Does this conclude your rebuttal testimony?**

19 **A. Yes, it does.**

1 JUDGE WALLACE: Mr. Soules.

2 MR. SOULES: Thank you, your Honor.

3 CROSS-EXAMINATION

4 BY MR. SOULES:

5 Q Good afternoon, Ms. Prentice. My name is Mike Soules. I
6 represent Sierra Club in this proceeding. How are you
7 doing today?

8 A I'm doing well, thank you. How are you?

9 Q Very well, thank you. I would like to talk to you about
10 a few aspects of your rebuttal testimony. I will -- Let
11 me just preface this part of the discussion, I'm not
12 actually going to mention or ask you any questions about
13 the subject of your rebuttal until we pivot to
14 confidential.

15 A O.K.

16 Q So if I ask a question and you think I'm seeking
17 information related to your rebuttal topics, I'm not.
18 Just honoring the confidentiality. Because this is a
19 virtual hearing, from time to time the audio can get
20 garbled. If at any point you have trouble hearing me,
21 please let me know so that you can, you know, hear my
22 complete question.

23 And then just a few other preliminary
24 points I wanted to walk through. First, if I refer to
25 MEC, NRDC, and Sierra Club collectively as MNS, will you
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1 understand what I mean?

2 A Yes.

3 Q And you have reviewed the direct testimony of MNS witness
4 Douglas Jester; is that correct?

5 A I reviewed portions of his direct testimony.

6 Q O.K. You have reviewed the portions of his direct
7 testimony related to the topic of your rebuttal?

8 A I did.

9 Q And did you also review the exhibits that were attached
10 to his direct testimony that relate to the topic of your
11 rebuttal testimony?

12 A Are those the documents that you provided this morning?

13 Q They are, yes.

14 A I'm going to say yes, I believe I reviewed them, but I
15 would have to open them all to confirm I covered them
16 all.

17 Q Fair enough. Generally speaking, when you were preparing
18 your rebuttal did you familiarize yourself with the
19 exhibits that Mr. Jester was relying upon?

20 A Generally speaking.

21 Q Did you review the direct testimony of MNS witness Tyler
22 Comings?

23 A Brief portions of.

24 Q The portions of his testimony that relate to the topic of
25 your rebuttal; is that fair to say?

1 A Yes.

2 Q Shifting gears a little bit, you're obviously aware that
3 Consumers Energy is proposing to acquire three natural
4 gas plants from CMS Enterprises, correct?

5 A Correct.

6 Q And you are directly employed by Consumers Energy; is
7 that correct?

8 A Also correct.

9 Q If I refer to Consumers Energy as Consumers or the
10 Company, will you understand what I mean?

11 A Yes.

12 Q And in your current role you do not do any work on behalf
13 of CMS Enterprises; is that correct?

14 A Not regularly.

15 Q In your current position with the Company, you manage an
16 Environmental Risk Management department; is that
17 correct?

18 A I do.

19 Q And the department performs environmental due diligence
20 assessments related to the acquisition of properties
21 Consumers Energy is interested in acquiring; is that a
22 fair summary?

23 A That is one of the roles that we perform, yes.

24 Q Has your department been performing environmental due
25 diligence related to the proposed acquisition of the CMS
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1 Enterprise gas plants?

2 A Given the confidential nature of the original project,
3 limited personnel were involved in that due diligence
4 review.

5 Q Can you -- I'm sorry. Can you clarify what you mean by
6 limited?

7 A So when you asked me if the department was doing that, I
8 take that to mean multiple people in our group of the
9 risk management team working on it, and that was not the
10 case. It was limited to a lesser number at the time,
11 primarily myself, and later in the project a couple of
12 specific environmental subject matter experts.

13 Q So with respect to this proposed gas acquisition, you
14 personally did perform some environmental due diligence
15 related to the plants. Is that a fair statement?

16 A Yes.

17 Q And with respect to that proposed acquisition you have
18 not performed any work on behalf of CMS Enterprises; is
19 that correct?

20 A That is also correct.

21 Q Now, the due diligence work that you and, you know, a few
22 of your team members have performed includes the Dearborn
23 Industrial Generation plant, correct?

24 A Yes.

25 Q If I refer to the Dearborn Industrial Generation as DIG,
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1 will you understand what I mean?

2 A Yes.

3 Q Did this due diligence review include reviewing the
4 environmental permits related to the DIG plant?

5 A Yes, the majority of the permits were reviewed.

6 Q Do you know which permits were not reviewed?

7 A I do not.

8 MR. SOULES: O.K. Your Honor, could we
9 go off the record.

10 JUDGE WALLACE: Off the record.

11 (At 3:40 p.m., the testimony continues on the
12 Confidential Record.)

13 - - -

14 (Back on the Public record at 4:00 p.m.)

15 - - -

16 JUDGE WALLACE: Let's take five minutes
17 five minutes off the record to see if there will be any
18 redirect. Or does anybody else have any questions for
19 Ms. Prentice? (No response.) I didn't think so. O.K.
20 Off the record for five minutes, and then we'll come
21 back.

22 JUDGE WALLACE: Back on the record in
23 Case U-21090. Mr. Gensch, do you ever any redirect for
24 Ms. Prentice?

25 MR. GENSCH: No, your Honor.

1 JUDGE WALLACE: Thank you very much,
2 Ms. Prentice. You are excused.

3 THE WITNESS: Thank you.

4 (The witness was excused.)

5 - - -

6 JUDGE WALLACE: And let's go off the
7 record again.

8 (Off the record at 4:05 p.m.)

9 - - -

10 JUDGE WALLACE: Back on the record. Mr.
11 Bzdok.

12 MR. BZDOK: Certainly, your Honor. So I
13 will move at this time -- we conditionally admitted
14 MEC-118 through -120 previously during the exam I believe
15 of Mr. Troyer, subject to preparing those and allowing
16 the Company an opportunity to review, and so I would move
17 at this time to I guess admit them unconditionally, or
18 whatever the term would be.

19 JUDGE WALLACE: O.K. We remove all
20 contingencies from those exhibits. Is there any
21 objection to the admission of Exhibits MEC-118 through
22 MEC-120? (No response.)

23 Hearing none, those exhibits are
24 admitted.

25 MR. BZDOK: Thank you, your Honor. I
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1 would also move at this time to admit into evidence
2 Confidential Exhibit MEC-129C, which was a document
3 discussed on Friday during Mr. Battaglia's
4 cross-examination but prepared over the weekend and
5 provided to all the parties who had signed the NDA.

6 JUDGE WALLACE: Thank you. Is there any
7 objection to the admission of Confidential Exhibit
8 MEC-129C? (No response.)

9 Hearing none, that exhibit is admitted.

10 MR. BZDOK: Thank you, your Honor. I
11 will defer to Mr. Soules for 121.

12 JUDGE WALLACE: Mr. Soules.

13 MR. SOULES: Thank you, your Honor. And
14 MNS would move for the admission of proposed Exhibit
15 MEC-121, which consists of a response to discovery
16 request MEC-CE-612, as well as an accompanying attachment
17 in lieu of cross of Mr. Kapala.

18 JUDGE WALLACE: Thank you, Mr. Soules.
19 Is there any objection to the admission of Exhibit
20 MEC-121? (No response.)

21 Hearing none, the exhibit is admitted.

22 O.K. Are there any other exhibits that
23 are hanging around out there that we need to admit as far
24 as anybody knows right now? (No response.)

25 (A discussion was held off the record.)

1 JUDGE WALLACE: Back on the record very
2 briefly. We had a short discussion off the record about
3 a hearing on the MNS motion; I will send out a scheduling
4 memo to set the hearing for 10:00 a.m. on Wednesday,
5 December 15. The Company will submit its response to the
6 motion Tuesday, December 14, by noon.

7 For tomorrow, we will begin with Mr. --
8 Company Witness Kapala, if need be, if the Biomass Plants
9 have cross for Mr. Kapala, there may be discovery that
10 resolves that, and then we will be starting at 10:00
11 tomorrow, then we'll move on to cross of Mr. Jester, and
12 then the Company will bind in the remainder of its case.
13 And then Wednesday we have Mr. Evans, Mr. Jester, and
14 potentially we have Mr. Feldman scheduled as well,
15 although he may ultimately be waived.

16 So does that sum up what we did when we
17 were off the record?

18 MR. BEACH: I believe it does, your
19 Honor. Nothing to add from the Company.

20 JUDGE WALLACE: O.K. All right. Well, I
21 will get an email or whatever, this updated schedule, out
22 to everybody, and I think that's -- unless anybody else
23 has anything else, speak now.

24 O.K. Then we are adjourned for today.
25 Thank you all very much, and I will see you tomorrow
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1 morning at 10:00 rather than 9:00. So thank you, all.

2 (Collective "Thank you.")

3 (At 4:30 p.m., the hearing was adjourned to Tuesday,
4 December 7, 2021, at 10:00 a.m.)

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C E R T I F I C A T E

We, Marie T. Schroeder and Lori Anne Penn, do hereby certify that we reported in stenotype via Microsoft Teams the proceedings had in the within-entitled matter, that being Case No. U-21090, before Sally Wallace, Administrative Law Judge with MOAHR, for the Michigan Public Service Commission, Lansing, Michigan, on Monday, December 6, 2021; and do further certify that the foregoing transcript, consisting of Public Volume 6, pgs. 1278-1513, is a true and correct transcript of our stenotype notes.

Marie T. Schroeder, CSR-2183

Lori Anne Penn, CSR-1315
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Dated:

- - -

(Confidential transcript begins on Page 1514 of the Confidential Record.)

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