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1 P R O C E E D I N G S

2 (Transcript follows in sequence from Volume
3 3.)

4 CHAIRMAN LA ROSA: All right. If we can get
5 back into our seats and start to get organized here
6 for this stretch -- this final stretch for the day.
7 So just to kind of pick up where we are at,
8 Mr. Aldazabal is here in the witness stand. Sierra
9 Club, you are up. I will toss it to you when you
10 are ready.

11 MS. AMIEL: Thank you.

12 EXAMINATION

13 BY MS. AMIEL:

14 Q Good afternoon, Mr. Aldazabal. I am appearing
15 here on behalf of Sierra Club and I am going to ask you
16 some questions about TECO's coal and gas units and
17 resource planning more generally.

18 So if we are looking first at Polk Unit 1, can
19 you please turn to Sierra Club Hearing Exhibit 21, which
20 is also FC-6399, to TECO's response to Sierra Club
21 Interrogatory No. 9. This should be a spreadsheet.
22 Perfect. Thank you.

23 Can you -- do you see where that spreadsheet
24 shows the plant's capacity factor in 2024 is roughly
25 14.6 percent?

1 A Yes, I see that.

2 Q And in 2025, Polk 1's expected capacity factor
3 decreases all the way down to 2.5 percent; do you see
4 that too?

5 A Yes, I see that.

6 Q And after 2025, as we can see in the exhibit,
7 the projected capacity factor for Polk 1 fluctuates from
8 3.8 percent, at its lowest value, to a maximum value of
9 five percent, right?

10 A Yes, I see that. It's not surprising. It
11 would be a higher heat rate unit compared to other
12 assets, so I would expect the low capacity factor.

13 Q Okay. So even if TECO completes the Polk 1
14 Flexibility project, TECO would operate Polk 1 at only
15 five percent or less of its capacity, right?

16 A Can you repeat that question?

17 Q Sure.

18 So even if TECO undergoes the Polk 1
19 Flexibility project, this plant will still be operated
20 at five percent or less of its capacity, correct?

21 A Not its capacity, capacity factor --

22 Q Yes.

23 A -- of five percent or less, yes.

24 Q Okay. Thank you.

25 Polk 1 has not run on coal or petcoke since

1 2018, correct?

2 A That is correct.

3 Q Instead, Polk 1 has combusted only gas during
4 the past six years?

5 A That is correct.

6 Q And the 3.8 to five percent capacity factor
7 for Polk 1 reflects only gas combustion and not coal or
8 petcoke, correct?

9 A Yes, that is our projection. That's correct.

10 Q So even though Polk 1 hasn't burned coal in
11 six years, the plant has retained, at a cost to
12 ratepayers, integrated gasification equipment that is
13 capable of gasifying coal or petcoke, right?

14 A That is correct.

15 Q Let's say TECO does not go forward with the
16 Polk 1 Flexibility project, would this IG equipment need
17 to be updated before it could be operational again?

18 A So if we did not go forward with the
19 simple-cycle conversion, we would still have to do
20 something with the existing asset. It is a
21 combined-cycle unit right now, and the combustion system
22 on the unit is no longer supported by the OEM, so we
23 would have to replace the combustion system on the unit.
24 So something would have to be done regardless.

25 Q Okay. And that includes the integrated

1 **gasification, or the IG equipment?**

2 A The IG -- the gasification plant portion is on
3 long-term reserve standby right now, it's on, layup as
4 Mr. Collins described, so that would not be utilized in
5 either case.

6 Q Okay. And would it be the same cost and the
7 same time to update the IG equipment whether or not the
8 CT conversion happens?

9 A No. We would not do anything different with
10 the gasification equipment.

11 Q Okay. And this -- the cost of this -- okay.
12 So -- actually, you answered two of my
13 questions at once, which is convenient. So -- that is
14 helpful. Thank you.

15 So, in fact, it would take a whole year to
16 perform this upgrade to Polk 1's IG equipment, correct?

17 A It depends. So we would have to do an
18 engineering assessment. If petcoke prices were to drop
19 for an extended period of time on a forward price curve,
20 where they were cheaper than natural gas, we would do an
21 evaluation at that time of what would be needed to bring
22 the gasification process back on-line.

23 Q Okay. And during that -- during the time that
24 this IG equipment may be updated, it would require TECO
25 to shut down the Polk 1 gas plant in its entirety for

1 multiple periods of time, right?

2 A It depends -- it depends how long it needs to
3 be performed.

4 Q Okay. And for Polk 1 to be capable of burning
5 coal or petcoke again, would TECO need to update not
6 only the gasification equipment, but also Polk 1's steam
7 cycle components and gas turbine components; is that
8 right?

9 A Yes. The HRSG would have to come back, yes.

10 Q Okay. And TECO would need to find new gas
11 combustion hardware because the original equipment
12 manufacturer no longer supports the technology, correct?

13 A So as part of the simple-cycle conversion, we
14 are updating the combustion hardware.

15 Q Okay. And in order to update the IG
16 equipment, TECO would likely need to modify or acquire
17 new environmental permits to run on petcoke, right?

18 A Potentially. But Witness Stryker can better
19 answer that question, what kind of permits would be
20 required.

21 Q Okay. But it's not clear how long the process
22 of acquiring permits would take, right?

23 A That is correct.

24 Q So, in fact, getting the gasifier up and
25 running, if TECO chooses to do so, could take even

1 longer than one year, correct?

2 A No. We wouldn't expect the permit process to
3 take longer than a year. No.

4 Q The engineering assessment, coupled with the
5 construction, coupled with the permitting process, could
6 that take longer than a year?

7 A We don't anticipate it taking longer than a
8 year. No.

9 Q Okay. But you can't guarantee it will take
10 under a year, right?

11 A No.

12 Q In fact, it could take -- it could, in theory,
13 take longer than a year, is that right?

14 MR. MEANS: Objection. Asked and answered.

15 MS. AMIEL: Okay. No problem. I will move on
16 from that.

17 BY MS. AMIEL:

18 Q So -- and you can't guarantee TECO would ever
19 undertake this lengthy upgrade to Polk 1's IGCC
20 equipment, right?

21 A I'm sorry, can you repeat that question?

22 Q You can't guarantee that TECO would undertake
23 this roughly one-year upgrade to Polk 1's IG equipment,
24 right.

25 A If petcoke prices don't drop below natural gas

1 prices, no, we would not do that.

2 Q In fact, there is a high probability TECO
3 would never do so, right?

4 A I don't know.

5 Q Okay. TECO hasn't formally calculated the
6 cost of upgrading these IG components at Polk 1 to make
7 the plant capable of burning petcoke, right?

8 A Can you repeat that question again? I am
9 sorry.

10 Q Yeah. No problem.

11 TECO hasn't formally calculated the cost of
12 upgrading the IG components at Polk 1 in order to make
13 the plant capable of burning petcoke again, is that
14 right?

15 A No, we have not.

16 Q Did you previously estimate it might cost 10
17 to \$12 million to upgrade the IG equipment?

18 A I don't remember that number.

19 Q That's fine. Would you -- I mean, would you
20 agree with that estimate, or estimate a different cost?

21 A No, I can't agree with that estimate. I don't
22 know.

23 Q Do you have any estimate of what it might
24 cost?

25 A No. An engineering assessment would have to

1 be done on the unit to bring it back to perform the
2 gasification process. Again, it hasn't run since 2018,
3 so we would have to do an assessment on what features of
4 the plant, what balance of plant components would have
5 to be replaced, refurbished, so we don't know.

6 **Q Okay. And would the cost of the IG upgrade be**
7 **the same if the CT conversion does not go forward?**

8 A I don't know.

9 **Q Okay. But whatever the cost of this**
10 **conversion, TECO would pass the entire cost onto its**
11 **ratepayers, right?**

12 A The cost of what conversion?

13 **Q Of converting the IG equipment at Polk 1.**

14 A If the cost of petcoke was to drop below
15 natural gas prices, it would be much more economic for
16 customers, we would certainly want to recover the costs
17 associated with the conversion because the fuel savings
18 would exceed the capital cost to do the conversion.

19 **Q Okay. But in order to -- so the cost of**
20 **petcoke, this would be on a forward price estimate**
21 **basis, right?**

22 A That is correct.

23 **Q And the forward prices would have to drop**
24 **below gas for roughly a year or so to justify the**
25 **conversion?**

1 A For an extended period of time, yes.

2 Q Okay. So do you anticipate that the prices of
3 petcoke would -- the forward prices of petcoke would
4 drop below those of gas for an extended period of time?

5 A I don't know.

6 Q Would you say that's unlikely?

7 A That's a better question for Witness Heisey,
8 but I don't know.

9 Q Okay. But today, you can't guarantee that
10 TECO does have concrete plans to run Polk 1 on coal or
11 petcoke ever again, right?

12 A We don't have any plans. No.

13 Q Okay. Thank you.

14 Can you please turn to Sierra Club
15 Interrogatory No. 92, which is C32-3418 -- or actually,
16 apologies. C32-3423, at a later point in the exhibit.
17 Thank you.

18 So would you agree that in 2022, gas did
19 become more costly than coal?

20 A It did for a short period. Absolutely.

21 Q Okay. Can you please read TECO's response to
22 Interrogatory No. 92B, starting with, given the lead
23 time, and ending with, our fuel forecast?

24 A Sure.

25 Q Thank you.

1 A Given the lead time of approximately one year
2 to restore operation on petcoke at Polk Unit 1, the
3 decision needed to be made in 2021. In 2021, natural
4 gas was the economic fuel of choice for Polk Unit 1 in
5 '22, based on our fuel forecast.

6 Q Thank you.

7 So even when gas prices were high, TECO
8 declined to undertake the yearlong upgrade of Polk 1's
9 IG equipment, correct?

10 A Yes. That's correct.

11 Q So would you agree that -- just to make sure I
12 understand -- for this upgrade to be economic, there
13 would have to be a gas price shock that's predicted to
14 last longer than one year with the petcoke prices
15 sufficiently lower than gas to cover the capital cost of
16 the upgrade?

17 A Yes. That's correct. And that's happened in
18 the past.

19 Q Okay. And TECO would need to have the
20 foresight to know beforehand that the gas price shock
21 would last roughly a year, correct?

22 A There is four price curves out there provided
23 by different entities that provide that information.
24 And, again, John Heisey can better answer that question.

25 Q Okay. Thank you.

1 To get a clearer sense of this picture, could
2 you please turn to Sierra Club Exhibit 19, which is
3 F6-386? And this is a response from TECO to an
4 interrogatory from Commission staff. Okay. It would be
5 on -- so it would be on -- oh, apologies. F6-388 is
6 where the actual answer is. Thank you.

7 So do you see where it says -- and I won't
8 make you read this since you are speaking a lot today.
9 But it says: The company also believes the shorter
10 lifespan for Big Bend Unit 4 is consistent with the
11 company's goals of improving reliability and reducing
12 fuel costs, especially since fuel cost projections show
13 that natural gas will remain more economic than coal.

14 A Can you point me to where that is? I am
15 sorry.

16 Q Yeah. It's on F6-388, and I am going to see
17 exactly -- okay, maybe -- it should be in this exhibit.
18 Maybe it's actually on F6-390. Okay. It's actually on
19 F6-390. So thank you for pointing that out.

20 This is in paragraph A -- in paragraph --
21 it's, like, the second paragraph on the page. Do you
22 see that now?

23 A I do. I see it.

24 Q Okay. Thanks. And thanks for correcting the
25 page number.

1 So this projection that natural gas prices
2 will remain lower than coal is actually a key reason
3 that TECO cites for moving Big Bend 4's retirement date
4 from 2045 up to 2040, is that right?

5 A Yes.

6 Q And 2040 is past Polk 1's current planned
7 retirement date of 2036, is that right?

8 A That's correct.

9 Q So TECO projects that throughout the lifespan
10 of Polk 1, gas will remain more cost-effective than
11 coal, is that right?

12 A That's our base expectation. Yes.

13 Q Thank you.

14 Okay. In fact, if you can just quickly -- if
15 we can quickly turn to Sierra Club Interrogatory 89E,
16 which is C32-3325. Sorry for all the switching between
17 pages. I believe it's below. It's part E., the tables
18 below. Thank you.

19 So this shows that TECO's -- or TECO's
20 projections for Polk 1 show the dispatch costs of
21 petcoke would be higher than those of gas for every year
22 from 2024 through 2030, is that right?

23 A I don't see the comparison to gas -- oh, never
24 mind. Next page.

25 Q Oh, yeah. On the next page, there is another

1 chart.

2 A Can you repeat the question?

3 Q Yes. I was about to offer that.

4 So TECO's projections for Polk 1 show the
5 dispatch costs of petcoke would be higher than the
6 dispatch costs of gas for every year from 2024 through
7 2030, is that right?

8 A Yes. That's correct.

9 Q In the meantime, TECO will incur at least some
10 costs to maintain the IG equipment on standby, right?

11 A There will be some costs associated with
12 maintaining the equipment, yes.

13 Q And those maintenance costs would be passed on
14 to ratepayers, right?

15 A Yes.

16 Q And you can't guarantee those maintenance
17 costs won't increase over time, right?

18 A No, we can't guarantee that, but that's not
19 our expectation.

20 Q Okay. And whether or not the Polk 1
21 Flexibility project goes forward, there would be upgrade
22 costs to bring the IG equipment out of standby, correct?

23 A Yes.

24 Q And if I -- if Polk 1's -- if Polk 1's IG
25 equipment is upgraded, would that make its operating and

1 maintenance costs higher than they would be if it
2 remains a simple-cycle unit without using its IG
3 equipment?

4 A Yes, it would.

5 Q Okay. So using or retaining the equipment
6 that burns petcoke or coal will result in higher costs
7 for ratepayers than retiring that equipment, all else
8 equal, right?

9 A No, it would not. It depends. We would not
10 do the conversion unless prices were lower than natural
11 gas. And if that's the case, there would be some
12 significant fuel savings for customers.

13 Q Okay. Has -- okay, I will actually ask a bit
14 more about that.

15 So TECO has not performed a retirement
16 analysis for Polk 1 since 2022, right?

17 A I am not sure of the date when that analysis
18 was performed. Sounds about right.

19 Q Okay, subject to check?

20 A Subject to check.

21 Q The gas price forecasts have changed somewhat
22 since 2022, right?

23 A Sure.

24 Q In that retirement analysis, do you know if
25 TECO -- I guess I should say, TECO analyzed the

1 cost-effectiveness of retiring Polk 1 in 2028, right?

2 Do you know?

3 A Yes.

4 Q Okay. TECO did not consider any retirement
5 years apart from 2028, right?

6 A That's correct.

7 Q In assessing the costs of retiring Polk 1
8 versus keeping the unit operational, TECO did not
9 specifically consider a scenario where it replaces Polk
10 1 with renewable energy and energy storage, is that
11 right?

12 A So that question is a better question for
13 Witness Aponte.

14 Q Okay.

15 A But I do know that we looked at replacing that
16 capacity if we retire the 220 megawatts.

17 Q Okay. I can ask Witness Aponte.

18 And do you know -- and just let me know if you
19 don't know this. In performing this retirement study,
20 TECO -- did TECO consider the cost of acquiring
21 renewable energy, such as battery storage, through an
22 open source RFP process?

23 A As part of the retirement of Polk Unit 1?

24 Q Yeah.

25 A Better question for Witness Aponte.

1 Q Okay. In fact, I may just ask a number of
2 these questions to Witness Aponte. Okay. I will ask
3 the questions about that retirement study to Witness
4 Aponte.

5 Okay. So you stated in your rebuttal
6 testimony that TECO has made of refurbishments to Polk
7 that will re -- that will position the unit for high
8 reliability for its remaining useful life. Does that
9 sound right?

10 A Yes.

11 Q Okay. Do you know how much those
12 refurbishments would cost, or did cost?

13 A It would take me some time to find what the
14 capital costs were.

15 Q Okay. Is there a rough estimate of what they
16 cost?

17 A No. I would have to check.

18 Q How much time would that -- I don't want to
19 ask you to comb through many documents now.

20 A So, you know, a couple things have happened.
21 There was a generator failure that happened, I believe,
22 in 2021, there was some delamination. And then there
23 was a blade liberation that happened in 2022.

24 So the rewinding of the generator is a very
25 rare type situation, so the generator should last to the

1 end of life for that asset. And the blade liberation
2 also was a significant issue --

3 **Q Okay.**

4 A -- that's been completely refurbished. So our
5 expectation is that unit is in pretty good shape to last
6 end of life.

7 **Q Okay. That's fine. I won't ask you to look
8 up those numbers since it's evening.**

9 **But I will ask you -- you can't guarantee Polk
10 1 won't incur more future costs due to refurbishments or
11 other upgrades, right?**

12 A One of the reasons we are converting that unit
13 from combined-cycle to simple-cycle, there is a lot less
14 moving parts, and our expectation that that asset will
15 be available for our customers through the end of its
16 life, 2036.

17 **Q Okay. But it's very possible it will have
18 future refurbishments and upgrades that will be needed,
19 right?**

20 A That's possible for every one of our assets.
21 Yes.

22 **Q Okay. TECO is planning to retire Polk 1 by
23 2036, correct?**

24 A Yes.

25 **Q So the Polk 1 Flexibility and Fuel Diversity**

1 projects will only be utilized for about a decade at
2 maximum, right?

3 A That is the retirement date, assuming that
4 date is not extended.

5 Q Okay. Well, fuel oil has fuel costs, right?

6 A Can you repeat that question?

7 Q Yeah.

8 Fuel oil is not without fuel -- like, it has
9 fuel costs, right?

10 A Yes. That's correct.

11 Q Okay. So if TECO retires Polk 1 instead of
12 undertaking these -- this Polk 1 Flexibility and Fuel
13 Diversity project, replacing it with clean energy, then
14 TECO could generate fuel diversity with a generation
15 resource that doesn't have fuel costs, right?

16 A So we already have existing infrastructure out
17 there at Polk. We have some fuel tanks. We feel very
18 confident we can add some additional storage at Polk,
19 thereby, creating some fuel diversity -- cheaper fuel
20 diversity than the alternative.

21 Q Is this storage anywhere in the record, or is
22 this hypothetically additional storage?

23 A Battery storage?

24 Q Yeah. The storage project you are talking
25 about, is that in the record for this rate case?

1 A Well, the fuel diversity is part of this.
2 What I meant was fuel storage tanks. I am sorry --

3 **Q Oh, okay.**

4 A -- fuel storage.

5 **Q I thought you said battery storage.**

6 A No. Liquid fuel.

7 **Q Okay.**

8 A Sorry.

9 **Q Okay. But the Fuel Diversity project would**
10 **cost \$53.9 million, right?**

11 A That's our preliminary estimate.

12 **Q Okay. So ratepayers are paying to add this**
13 **degree of fuel diversity, right?**

14 A So, yes, but we are highly reliant on natural
15 gas. In 2023, 87 percent of our generation was via
16 natural gas. We don't have a lot of fuel diversity in
17 our generation mix. Adding liquid fuel capability at
18 Polk Power Station gives us a risk mitigation that we
19 don't currently have.

20 **Q Okay. But adding, for example, energy storage**
21 **instead of fuel oil would also increase fuel diversity,**
22 **right?**

23 A For very short periods of time. If you have a
24 pipeline disruption, or an issue with a natural gas
25 pipeline, fuel -- Polk Power Station is only served by

1 one single natural gas pipeline. It's different than
2 our Bayside and Big Bend stations, which have multiple
3 gas lines to them. So we already have liquid fuel
4 capability up to the CTs out there. Adding liquid fuel
5 capability at the three remaining CTs at a station that
6 only has a single pipeline makes very good sense.

7 **Q Okay. But battery energy storage doesn't**
8 **require a pipeline, right?**

9 A It does not, but it also only provides two- or
10 four-hour capacity; whereas, liquid fuel storage can
11 provide capacity and fuel flexibility for an extended
12 duration of time.

13 **Q Okay. I may ask about this a bit more.**

14 **So -- okay. So you -- so -- just a moment,**
15 **please. Okay. So you stated in your rebuttal testimony**
16 **that retaining -- actually, this leads well into my**
17 **question.**

18 **So you stated in your rebuttal that retaining**
19 **the existing solid fuel assets of Polk Unit 1 is**
20 **important to provide fuel diversity options and help**
21 **mitigate the potential volatility of natural gas prices.**
22 **Does that sound right?**

23 A Yes.

24 **Q And the purpose of fuel diversity is to access**
25 **the benefits of that diversity during an event that**

1 restricts the supply of one particular fuel, right?

2 A Yes.

3 Q So -- but Polk 1 has not burned solid fuel,
4 coal or petcoke, since 2018, right?

5 A That's correct.

6 Q Yet, there are having gas price and supply
7 shocks since 2018, right?

8 A There have been spikes in natural gas, yes.

9 Q Including Winter Storm Uri?

10 A Yes.

11 Q And including high natural gas prices in 2022
12 and, more recently, a four-day gas price spike in
13 January 2024?

14 A In January '24 for a few days, yes.

15 Q But Polk Unit 1 did not burn coal or petcoke
16 during any of these gas price shocks, right?

17 A No. That's correct.

18 Q So in the time since 2018, where fuel
19 diversity was needed, Polk's IG components were not able
20 to provide it, right?

21 A Not for a short duration, no.

22 Q Okay. Polk had a high equivalent forced
23 outage rate in the past five years, even reaching as
24 high as 67 percent in 2021, right?

25 A Yes, and it's due to the two outages that I

1 described earlier, the delamination issue with the
2 generator and the blade liberation in 2022.

3 **Q Okay. One moment -- and when there are**
4 **outages that impedes TECO's ability to provide fuel,**
5 **right, or to provide power -- or to provide fuel**
6 **diversity, is that right?**

7 A It depends on the outage. It's a natural gas
8 unit that's unavailable, it doesn't necessarily impact
9 us on fuel diversity. Fuel diversity is more of a
10 disruption in the natural gas supply or an alert day
11 from FGT, or Gulfstream, or one of our pipelines. But
12 John Heisey can get into that detail much better than I
13 could.

14 **Q Okay. That's fair.**

15 **So looking at fuel diversity more generally,**
16 **there is also fuel diversity from solar, right?**

17 A Certainly.

18 **Q And from energy storage?**

19 A Yes.

20 **Q And from energy efficiency and demand response**
21 **measures?**

22 A Which we utilize, yes.

23 **Q So if there were a gas supply issue, TECO**
24 **would still not have enough coal to make up for the gas**
25 **capacity on its system, right?**

1 A It depends.

2 Q Okay. I can ask a -- I think I skipped a
3 question.

4 So currently, coal supplies about 3.8 percent
5 of the power on TECO's system, right?

6 A Coal generation in 2023 was about 3.8 percent
7 of our generation mix. Yes.

8 Q Okay. And gas was, you said, about -- was it
9 89?

10 A 87.

11 Q 87 percent. Okay. Thanks.

12 So if there were a gas supply issue, TECO
13 would not have sufficient quantity of coal to make up
14 for the full gas capacity on its system, right?

15 A It depends. If there is a pipeline
16 disruption, we have, like I said earlier, Bayside and
17 Big Bend are served by multiple pipelines. If one of
18 them has an interruption, we may be able to use the
19 other pipeline to serve it. If there is an interruption
20 at Polk Power Station, we only have a single pipeline
21 there, so that, yes, we would be in a difficult
22 situation.

23 Q Okay. And you are aware that many utilities
24 around the country have already retired all their coal
25 assets. Does that sound right?

1 A I am aware of that. Yes.

2 Q So you would agree that fuel sources other
3 than coal can contribute to fuel diversity, right?

4 A Yes.

5 Q Okay. And Polk 1, even -- and we are almost
6 done with Polk 1. This is the last two questions.

7 So Polk 1, even if it's upgraded through the
8 Flexibility project, would still predominantly run on
9 gas, right?

10 A Yes.

11 Q Okay. So even though TECO is concerned about
12 fuel diversity, it's still investing millions of dollars
13 in converting one form of gas generation to another
14 form, right?

15 A For a simple-cycle conversion, yes, it will
16 provide -- it makes that unit much more flexible,
17 provides significant fuel benefits for our customers by
18 doing that conversion. And we are also proposing a fuel
19 diversity project to add liquid fuel to Polk 1, as well
20 as Polk Units 2 through 5.

21 Q Okay. But the Polk 1 Flexibility project is
22 converting one type of gas plant to another type of gas
23 plant, right?

24 A It's converting it from combined-cycle to
25 simple-cycle.

1 Q Yeah.

2 A Yes.

3 Q Okay. Thank you. Thanks.

4 Now, I am going to ask a few questions about
5 Big Bend 4, the last remaining coal plant at TECO's Big
6 Bend Power Station. So can you please turn to Sierra
7 Club Interrogatory No. 1, question one? This is
8 C32-3196. Thanks.

9 Okay. So this page number would be a few
10 pages further down. Apologies. It's just question one.
11 So let me see if I can easily find the proper page
12 number for that. This would be -- this would be page
13 C32-3201. Thank you.

14 Okay. So, do you see -- let me just make
15 sure. Okay. Do you see halfway through one of the
16 answer where it says: Tampa Electric uses forward fuel
17 curve projections?

18 A I do.

19 Q Okay. So can you please read it from that
20 first part to where it says: Remaining useful life? So
21 basically just the second chunk of that paragraph.

22 A Sure.

23 Q Thanks.

24 A Tampa Electric uses forward fuel curve
25 projections to indicate which fuel would be the most

1 beneficial to customers to provide continued, reliable
2 and economic generation. Tampa Electric has not
3 performed an analysis related to continued reliance on
4 Big Bend 4, as that asset has numerous years of
5 remaining useful life.

6 Q Thank you.

7 So TECO has not conducted a retirement study
8 for Big Bend 4, correct?

9 A That's correct.

10 Q In other words, TECO has not performed an
11 analysis to evaluate whether it would save ratepayers
12 money to retire Big Bend 4 before its current 2040
13 retirement date, right?

14 A That is correct.

15 Q And TECO has not compared the relative costs
16 of continuing to operate this older unit with the costs
17 of acquiring the same generation from newer energy
18 sources such as renewables and storage, is that right?

19 A You have an existing asset -- no. We have an
20 existing asset that's functional. So retiring it early,
21 while it's still useful to customers, and replacing with
22 additional capacity or other generation would not be
23 economic. We don't have to do an economic analysis to
24 make that assertion.

25 Q Okay. There would be no technological

1 impediment to running Big Bend 4 only on gas until its
2 current planned 2040 retirement date, right?

3 A I am sorry, can you repeat that question?

4 Q Yeah.

5 There would be no technological impediment to
6 running Big Bend 4 only on gas until its current planned
7 2040 retirement date, is that right?

8 A No. It would contribute to the reliance on
9 natural gas and we would probably have to secure some
10 firm transportation, which Archie described earlier, for
11 that unit.

12 Q Okay. But -- oh, are you --

13 A No.

14 Q Sorry.

15 But you stated in your rebuttal testimony that
16 TECO projects coal to make up less than one percent of
17 the company's generation mix going forward, right?

18 A That's correct.

19 Q Okay. So the plant will be powered, the vast
20 majority of power will be coming from gas regardless at
21 that plant?

22 A It would, but we have the option to switch to
23 gas -- to nat -- I am sorry -- to switch to coal. If we
24 were running that unit exclusively on natural gas, we
25 would have to secure firm transport, natural gas from

1 transport. And I want to say that the number that
2 Archie quoted, the 27 million, was extremely
3 conservative. It likely would cost a lot more than
4 that.

5 Q Okay. And do you know where in the record
6 that number is?

7 A I think it's in my rebuttal testimony.

8 Q Okay. And do you know if there is an analysis
9 backing that number in the record?

10 A It is. It's 60,000 MMBtu days -- MMBtus per
11 day times \$1.20, which is the current price of FGT times
12 365 days.

13 Q Okay. Thanks.

14 So this does feed into my next question. So
15 would you agree that TECO would consider running Big
16 Bend 4 on coal in the event of a gas price shock?

17 A Yes, we would, and we have.

18 Q I figured.

19 So Big Bend 4's current coal supply contract
20 is terminating on December 31st, 2024, right?

21 A That's a better question for Mr. Heisey. I am
22 not sure.

23 Q Mr. Heisey. Okay.

24 Do you know if TECO is planning to enter into
25 a new contract for coal supply after that contract

1 terminates?

2 A That isn't -- that's currently not our plan.
3 No.

4 Q Okay. And, likewise, there are no agreements
5 to procure coal or a petcoke for Polk 1, right?

6 A That is correct.

7 Q Okay. So if there is a gas price increase and
8 TECO prefers to burn coal instead, TECO will be subject
9 to the price of coal in the spot market, right?

10 A Yes.

11 Q And TECO would essentially be competing in the
12 spot market with any other power supplier that's buying
13 coal in the face of high gas prices, right?

14 A Yes, we would.

15 Q And if the gas supply decreases and TECO burns
16 coal instead, TECO will still be subject to the coal
17 price in the spot market, right?

18 A Yes.

19 Q But generally, TECO plans to burn only minimal
20 amounts of coal at Big Bend 4 in the future, right?

21 A That is our plan, unless it's economic to do
22 -- to burn coal instead of gas, which it has been as
23 recently as you mentioned earlier, January of this year.

24 Q Okay. So if TECO permanently stops burning
25 coal at Big Bend 4, would you agree there are multiple

1 **assets that could be retired at Big Bend 4?**

2 A Yes.

3 **Q Including coal crushing equipment and mills?**

4 A Yes.

5 **Q As well as other forms of equipment, right?**

6 A Yes.

7 **Q And there are costs associated with**
8 **maintaining these assets, right?**

9 A There is costs associated with maintaining
10 those assets. But again, having that dual fuel
11 capability results in significant fuel savings for our
12 customers. And we have already experienced that earlier
13 this year. We saw it in 2022, and we are going to
14 continue to see it as we see spikes in natural gas
15 prices.

16 **Q But you haven't conducted an analysis**
17 **comparing the costs of, say, replacing this capacity**
18 **with renewables or storage, you haven't compared that**
19 **with the cost of continuing to operate them to maintain**
20 **fuel diversity, right?**

21 A We --

22 MR. MEANS: Objection. Asked and answered.

23 CHAIRMAN LA ROSA: Sustained.

24 MS. AMIEL: That's fine.

25 BY MS. AMIEL:

1 Q Okay. So I will jump -- I will go to another
2 topic. And we are getting closer to -- we are making
3 good progress here, so thank you.

4 Can you please turn to page 25 of your direct
5 testimony, line 22?

6 A Okay, I am there.

7 Q Thank you.

8 Can you please read the part starting with
9 absent and ending with storage capacity? Just to the
10 end of the page, it should be, at least.

11 A Oh, sure.

12 Q Thank you.

13 A Absent and unforeseen change, the economic
14 viability of coal for generating electricity --
15 generating electricity will continue to erode while the
16 future will remain bright for renewable energy resources
17 and storage capacity.

18 Q Thank you.

19 And you would agree that many coal plants
20 around the country have retired in recent years, right?

21 A Yes, I would.

22 Q And at least some of these coal plants have
23 retired earlier than planned, correct?

24 A Agree. Yes.

25 Q In fact, TECO, itself, has retired other coal

1 units earlier than their planned retirement dates,
2 right?

3 A Yes. That's correct, as part of the Big Bend
4 Modernization project.

5 Q TECO has drastically reduced its coal
6 combustion by 92 percent since 2013, right?

7 A Subject to check, yes.

8 Q Okay, subject to check. It's just in your
9 direct testimony.

10 So comparing coal to, say, solar, the variable
11 operating costs of an existing coal plant are higher
12 than those of existing solar units, right?

13 A Yes.

14 Q And TECO can also obtain federal Inflation
15 Reduction Act tax credits for installing solar, whereas,
16 it cannot acquire those for coal, right?

17 A That is correct.

18 Q Retiring TECO's older coal plants has improved
19 reliability, because those plants are more likely than
20 newer plants to experience outages, correct?

21 A What was the first part of your question?

22 Q No problem.

23 Retiring TECO's older coal plants has improved
24 reliability, because those plants are more likely than
25 newer plants to experience outages, correct?

1 A It has helped with the reliability by retiring
2 those coal assets, yes.

3 Q **Okay. And it has improved efficiency, right?**

4 A Our heat rate has improved, yes.

5 Q **And retiring coal plants earlier has also
6 reduced costs to customers, right?**

7 A Those units -- the units that we retired were
8 re -- one was repowered to a natural gas combined-cycle
9 asset. And the economics of retiring that -- those
10 assets and replacing it with the Big Bend Modernization
11 project was beneficial for customers.

12 Q **Okay. Just a moment.**

13 **Okay. So -- and it's possible that a new
14 environmental regulation could impose limits on carbon
15 emissions, right?**

16 A That's possible.

17 Q **And this could happen at the state or federal
18 level, right?**

19 A That's possible.

20 Q **So TECO might very well have to make future
21 environmental compliance upgrades at Big Bend and Polk
22 in order to take those plants to their -- to -- in order
23 to take those plants up to their currently planned
24 retirement dates, right?**

25 A Assuming new environmental regulations are

1 enacted, yes.

2 Q Okay. So, Mr. Aldazabal, I have some
3 questions about TECO's costs under the effluent
4 limitation guidelines, or the ELG rule. I will give you
5 an option. Should I ask these to you, or is it better
6 to save these for my colleague to ask Mr. Stryker and
7 then you may be off the hook for today?

8 A Those are much better questions for Mr.
9 Stryker.

10 Q Okay. Yeah. I am sure he appreciates that.
11 Thank you.

12 So in that case, I believe I don't have --
13 yeah, no further questions. Thank you.

14 A Thank you.

15 CHAIRMAN LA ROSA: Thank you.

16 Florida Retail.

17 MR. WRIGHT: Thank you, Mr. Chairman. I don't
18 have any cross for Mr. Aldazabal.

19 CHAIRMAN LA ROSA: Thank you.

20 Walmart.

21 MS. EATON: I don't have any cross. Thank
22 you.

23 CHAIRMAN LA ROSA: Staff.

24 MR. SPARKS: Yes, Mr. Chair. I have just a
25 handful of questions for Mr. Aldazabal.

1 EXAMINATION

2 BY MR. SPARKS:

3 Q Good evening, Mr. Aldazabal.

4 A Good evening.

5 Q I have just a few questions for you about the
6 customer experience teams. I would like to direct your
7 attention to TECO's response to staff's 12th set of
8 interrogatories. This is on master page E8211. And I
9 would like to ask you to read the final sentence of that
10 answer out loud. I believe it starts with: By using
11 the Ybor location.

12 A Sure.

13 By using the Ybor location, several customer
14 experience teams will be able to be consolidated and
15 operate in a single location.

16 Q Can you please explain why TECO does not plan
17 to consolidate all of the customer experience teams
18 operations to the new corporate headquarters?

19 A Yes. So I believe 140 team members from the
20 customer experience team are going to be moving out to
21 the Ybor Data Center. They are going to be members of
22 the IT group that currently reside in the Ybor Data
23 Center that are going to be moving to the corporate
24 location, to the new Midtown location. So we are moving
25 some customer experience folks over to Ybor Data, and we

1 are pulling the IT folks over to the Midtown location.

2 Q Thank you.

3 Are there any operational benefits to keeping
4 the teams at the Ybor location rather than relocating
5 them to the new headquarters?

6 A One of the benefits of moving the existing
7 customer experience teams from the TECO Plaza to the
8 Ybor Data center is the benefits that you just
9 described, the operational benefits of having them all
10 work together at a single location.

11 Q Okay. What about financial benefits? Are
12 there any financial savings, or any other financial
13 benefits to moving the teams?

14 A I don't know if there is financial benefits.
15 I am sure working closer together is much more
16 efficient, but as far as financial benefits, I don't
17 know.

18 Q Okay. Thank you.

19 I would now like to ask you to look at TECO's
20 response to staff's second set of interrogatories, and
21 this is on master E5478. And that's also listed in the
22 CEL, Exhibit 194. And I would like you to please read
23 the third sentence out loud. I believe it's starts
24 with, the Ybor Data Center.

25 A Sure.

1 The Ybor Data Center will continue to be used
2 for employee work offices, so the Ybor Data Center lease
3 costs are included as part of the company's revenue
4 requirement calculation.

5 **Q I was actually -- maybe I miscounted. I am**
6 **sorry. The sentence before that.**

7 A Oh.

8 **Q I didn't realize they both started the same.**

9 A Okay. The Ybor Data Center has a continuing
10 lease of \$181,687 per year, with a scheduled CPI
11 adjustment every five years.

12 **Q And do you have any idea, is this amount more**
13 **or less than what TECO could pay to lease additional**
14 **floors in the new corporate headquarters to house the**
15 **customer experience teams?**

16 A Oh, that's a lot less. This is -- this lease
17 is below market, the Ybor Data Center lease at 181,000.
18 So it's a very economic lease for us, which -- one of
19 the reasons we want to maintain the Ybor Data Center.

20 **Q All right. Thank you.**

21 MR. SPARKS: If I could just have one second?

22 CHAIRMAN LA ROSA: Sure.

23 MR. SPARKS: That's all the questions staff
24 has for this witness. Thank you, Mr. Chair, and
25 thank you, Mr. Aldazabal.

1 CHAIRMAN LA ROSA: Great. Thank you.

2 Commissioners, any questions?

3 Seeing none, I will throw it back to TECO for
4 redirect.

5 MR. MEANS: Thank you, Mr. Chairman.

6 I would like to call up master page number
7 C3-230, which is Mr. Aldazabal's exhibit to his
8 direct testimony.

9 FURTHER EXAMINATION

10 BY MR. MEANS:

11 Q Okay. Mr. Aldazabal, do you remember being
12 asked some questions by Counsel for LULAC about this
13 document?

14 A Yes, I do.

15 Q And did you testify earlier that this
16 scorecard represents how a team of directors scored the
17 options?

18 A Yes.

19 Q Did that team of directors make the final
20 decision on the headquarters?

21 A No. This --

22 Q Then what does this document represent?

23 A This document was just a preliminary analysis
24 by this team of directors. They brought this document
25 over to the senior leadership team, Tampa Electric, and

1 then we factored in this assessment along with the
2 cost-effectiveness.

3 Q Thank you.

4 Do you recall being asked some questions about
5 the MacDill Air Force Base project?

6 A I do.

7 Q What is the total capacity of the generation
8 that's being installed in MacDill Air Force Base?

9 A The four recip engines roughly represent 75
10 megawatts.

11 Q Okay. Now, I would like to call up master
12 page number F3.6-25883, which is FLL-309, if that's
13 easier. Oh, that works. Thank you.

14 Do you see the line there that refers to the
15 MacDill Air Force Base project?

16 A Give me -- yes, I do. 196. Yes.

17 Q And what is the capacity listed there for that
18 project?

19 A 57 megawatts.

20 Q Is that correct?

21 A No. That could be a transposition. It should
22 be 75 megawatts.

23 Q If it was 75 megawatts, what effect would that
24 have on the cost per capacity?

25 A It would reduce that cost per capacity.

1 Q Thank you.

2 And I don't want to reopen the confidential
3 folder, but do you recall being asked about FLL-303C,
4 the EIO agreement?

5 A I do.

6 Q Do you recall the discussion of a validated
7 threat, that concept?

8 A Yes.

9 Q When there is no validated threat, how will
10 the assets at MacDill Air Force Base be utilized?

11 A They will be utilized to serve all our
12 customers.

13 Q Thank you.

14 Do you recall being asked some questions about
15 the costs of maintaining the coal equipment at Big Bend
16 Unit 4?

17 A Yes.

18 Q What is the current estimated retirement date
19 of Big Bend Unit 4?

20 A 2040.

21 Q Are there costs associated with retiring an
22 asset that has remaining useful life?

23 A Absolutely.

24 Q Do you know what the undepreciated net book
25 value of the coal assets at Big Bend Unit 4 is?

1 A It's significant, but I don't know the value.

2 Q Okay. I think that's all I have. Thank you.

3 CHAIRMAN LA ROSA: Great. Thank you.

4 Let's go ahead and move exhibits into the
5 records, if needed. Start with TECO.

6 MR. MEANS: Yes. We would like to move
7 Exhibits 18 and 142 into the record.

8 CHAIRMAN LA ROSA: Okay. Is there objection?
9 Seeing none, show them entered into the record.

10 (Whereupon, Exhibit Nos. 18 & 142 were
11 received into evidence.)

12 CHAIRMAN LA ROSA: Do any of the other parties
13 have any exhibits to enter into the record? OPC?

14 MS. LOCHAN: Yes. Florida Rising and LULAC
15 would like to move Comprehensive Exhibits 224, 618,
16 621, 643, 644, 652, 654, 707, 763, 769 and 776 into
17 the record.

18 CHAIRMAN LA ROSA: I will let that digest for
19 a second. Is there objections to that? Seeing
20 none, show them entered into the record.

21 (Whereupon, Exhibit Nos. 224, 618, 621, 643,
22 644, 652, 654, 707, 763, 769 & 776 were received into
23 evidence.)

24 CHAIRMAN LA ROSA: Any other exhibits? Sierra
25 Club?

1 MS. AMIEL: Sorry. Yes. Thank you.

2 Sierra Club would like to add two exhibits
3 into the record, Sierra Club Exhibits 19 and 21,
4 which are 806 and 808.

5 CHAIRMAN LA ROSA: Is there objections?
6 Seeing none, then show them entered into the
7 record.

8 (Whereupon, Exhibit Nos. 806 & 808 were
9 received into evidence.)

10 CHAIRMAN LA ROSA: Any other exhibits?

11 Okay. Mr. Aldazabal, you are excused.

12 (Witness excused.)

13 CHAIRMAN LA ROSA: All right. It is 6:00 p.m.
14 I think we can obviously continue to get rolling
15 here.

16 TECO, you can --

17 MR. MEANS: Thank you, Mr. Chairman.

18 CHAIRMAN LA ROSA: -- call the next witness.

19 MR. MEANS: -- Tampa Electric calls Kris
20 Stryker.

21 CHAIRMAN LA ROSA: Mr. Stryker, I do not
22 believe you have been administered the oath yet.
23 Do you mind just please standing, raise your right
24 hand?

25 Whereupon,

1 KRIS STRYKER
2 was called as a witness, having been first duly sworn to
3 speak the truth, the whole truth, and nothing but the
4 truth, was examined and testified as follows:

5 THE WITNESS: I do.

6 Thereupon:

7 CHAIRMAN LA ROSA: Thank you.

8 Feel free to have a seat and get settled in.

9 We are ready once you feel you are ready.

10 EXAMINATION

11 BY MR. MEANS:

12 Q Good evening, Mr. Stryker. Can you please
13 state your full name for the record?

14 A Yes. It's Christopher Stryker.

15 Q And you were just sworn in, correct?

16 A Yes, sir.

17 Q Who is your current employer, and what is your
18 business address?

19 A Tampa Electric is my current employer, located
20 at 702 North Franklin Street in Tampa, Florida.

21 Q Did you prepare and cause to be filed in this
22 docket, on April 2nd, 2024, prepared direct testimony
23 consisting of 38 pages?

24 A Yes, I did.

25 Q And did you prepare and cause to be filed in

1 **this docket, on July 2nd, 2024, prepared rebuttal**
2 **testimony consisting of nine pages?**

3 A Yes, I did.

4 Q Do you have any additions or corrections to
5 your prepared direct or rebuttal testimony?

6 A I have a couple.

7 The first correction is on page 28 of my
8 direct testimony, in which I refer to the South Tampa
9 Energy Capacity Storage project. There has been both a
10 change in the location and the in-service date of that
11 project, as was discussed during my deposition. That
12 project is being relocated to our Bayside Power Station,
13 which is going to cause a nine-month delay in the
14 in-service date, from April 2025 until December of 2025.

15 The other change is on page 30. There is a
16 statement made in my testimony, in my direct testimony,
17 about not adjusting our, our filing for the Lake Mabel
18 in-service date, where there was a disconnect between my
19 testimony and our financial filings. That is no longer
20 true, because that was corrected when the company filed
21 a revised revenue requirement statement.

22 Q Thank you.

23 Other than those -- other than those changes,
24 if I were to ask you the questions contained in your
25 prepared direct and rebuttal testimony today, would your

1 **answers be the same?**

2 A Yes, they would.

3 MR. MEANS: Mr. Chairman, Tampa Electric
4 requests that the prepared direct and rebuttal
5 testimony of Mr. Stryker be inserted into the
6 record as though read.

7 COMMISSIONER GRAHAM: We will insert those
8 into the record as though read.

9 MR. MEANS: Thank you.

10 (Whereupon, prefiled direct testimony of Kris
11 Stryker was inserted.)

12

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1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **PREPARED DIRECT TESTIMONY**

3 **OF**

4 **KRIS STRYKER**

5
6 **Q.** Please state your name, address, occupation, and employer.

7
8 **A.** My name is Kris Stryker. My business address is 702 N.
9 Franklin Street, Tampa, Florida 33602. I am employed by
10 Tampa Electric Company ("Tampa Electric" or the "company")
11 as Vice President Clean Energy and Emerging Technology.

12
13 **Q.** Please describe your duties and responsibilities in that
14 position.

15
16 **A.** As Vice President of Clean Energy and Emerging Technology,
17 I report to the Vice President of Energy Supply. I am
18 responsible for the planning and implementation of our
19 utility scale solar projects, energy storage capacity
20 projects, our investigative work into the application of
21 emerging technologies, and oversight of our environmental
22 department. My team, including myself, currently consists
23 of seventy (70) team members.

24
25 **Q.** Please provide a brief outline of your educational

1 background and business experience.

2

3 **A.** I graduated from the University of Florida with a
4 bachelor's degree in mechanical engineering, and I am a
5 licensed professional engineer in the State of Florida.

6

7 I have more than 25 years of experience in the energy
8 industry. Prior to becoming the Vice President Clean Energy
9 and Emerging Technology, I held various positions within
10 the company including Senior Director of Decarbonization
11 and Major Projects and as Project Manager and Engineering
12 Manager for various Tampa Electric power generating
13 facilities. I was promoted to my current role in 2023.

14

15 **Q.** What are the purposes of your direct testimony?

16

17 **A.** The purposes of my prepared direct testimony are to: (1)
18 explain the company's plan to build 488.7 megawatts ("MW")
19 of solar photovoltaic ("PV") generating facilities (the
20 "Future Solar Projects") to serve its customers; (2)
21 explain the company's plan to build 115 MW of energy
22 storage capacity (the "Future Energy Storage Capacity
23 Projects"); (3) provide the projected installed costs for
24 the projects; (4) explain Tampa Electric's investigative
25 work for future environmental compliance; and (5) describe

1 the company's planned emerging technology research and
2 development ("R&D") projects.

3

4 **Q.** Have you prepared an exhibit to support your direct
5 testimony?

6

7 **A.** Yes. Exhibit No. KS-1 was prepared under my direction and
8 supervision. The contents of my exhibit were derived from
9 the business records of the company and are true and
10 correct to the best of my information and belief. It
11 consists of fourteen documents, as follows:

12

13 Document No. 1 List of Minimum Filing Requirement
14 Schedules Sponsored or Co-Sponsored by
15 Kris Stryker

16 Document No. 2 English Creek Solar Project
17 Specifications and Projected Costs

18 Document No. 3 Bullfrog Creek Solar Project
19 Specifications and Projected Costs

20 Document No. 4 Duette Solar Project Specifications
21 and Projected Costs

22 Document No. 5 Cottonmouth Solar Project
23 Specifications and Projected Costs

24 Document No. 6 Big Four Solar Project Specifications
25 and Projected Costs

- 1 Document No. 7 Farmland Solar Project Specifications
2 and Projected Costs
- 3 Document No. 8 Brewster Solar Project Specifications
4 and Projected Costs
- 5 Document No. 9 Wimauma 3 Solar Project Specifications
6 and Projected Costs
- 7 Document No. 10 Dover Energy Storage Capacity Project
8 Specifications and Projected Costs
- 9 Document No. 11 Lake Mabel Energy Storage Capacity
10 Project Specifications and Projected
11 Costs
- 12 Document No. 12 Wimauma Energy Storage Capacity
13 Project Specifications and Projected
14 Costs
- 15 Document No. 13 South Tampa Energy Storage Capacity
16 Project Specifications and Projected
17 Costs
- 18 Document No. 14 Clean Energy Capital Expense Summary
19 2022-2025

21 **Q.** Are you sponsoring any sections of Tampa Electric's
22 Minimum Filing Requirement ("MFR") Schedules?

23

24 **A.** Yes. I am sponsoring or co-sponsoring the MFR Schedules
25 listed in Document No. 1 of my exhibit. The contents of

1 these MFR Schedules were derived from the business records
2 of the company and are true and correct to the best of my
3 information and belief. MFR Schedules B-11 and B-13
4 reflect the Future Solar Projects and Future Energy
5 Storage Capacity Projects described in my testimony.

6

7 **Q.** How does your prepared direct testimony relate to the
8 prepared direct testimony of the company's other
9 witnesses?

10

11 **A.** My direct testimony describes the utility-scale solar and
12 energy storage capacity projects for which cost recovery
13 is requested, as well as the projected in-service dates
14 and installed costs. My testimony further discusses the
15 company's exploration into future environmental
16 compliance and the company's emerging technology R&D
17 projects. These costs are incorporated in the 2025 revenue
18 requirement and subsequent year adjustment amounts
19 requested for 2026 and 2027, as described in the direct
20 testimony of Tampa Electric witness Richard Latta, the
21 cost-effectiveness analysis presented by Tampa Electric
22 witness Jose Aponte, and the proposed customer rates and
23 miscellaneous charges submitted by Tampa Electric witness
24 Jordan Williams.

25

1 **FUTURE SOLAR PROJECTS**

2 **Q.** Please describe the company's plan to install 488.7 MW of
3 Future Solar Projects.

4
5 **A.** As part of our strategy of transitioning to a generating
6 portfolio with less exposure to volatile fuel prices,
7 Tampa Electric plans to add eight new solar PV projects
8 across its service territory in West Central Florida
9 through 2026. This amounts to a total of 488.7 MW of cost-
10 effective solar PV energy, which means when the projects
11 are complete, about 18 percent of Tampa Electric's energy
12 will come from the sun.

13
14 These solar additions are a continuation of Tampa
15 Electric's long-standing commitment to solar energy. The
16 company has long believed in the promise of solar energy
17 because it plays an important role in our energy future
18 and reduces our customers' exposure to volatile fuel
19 prices. These solar projects will also further the public
20 policy of the state to promote the development of
21 renewable energy resources, to diversify the types of
22 fuels used to generate electricity, and to improve
23 environmental conditions.

24
25 The additional 488.7 MW of cost-effective solar PV will

1 be added to the company's generating fleet over a three-
2 year period as detailed below.

3	English Creek Solar	December 2024
4	Bullfrog Creek Solar	December 2024
5	Duette Solar	December 2025
6	Cottonmouth Ranch Solar	December 2025
7	Big Four Solar	May 2026
8	Farmland Solar	December 2026
9	Brewster Solar	December 2026
10	Wimauma 3 Solar	December 2026

11
12 **Q.** Why are the Future Solar Projects needed?

13
14 **A.** The Future Solar Projects are needed to provide the
15 company's growing customer base with cost-effective solar
16 energy that is not exposed to volatile fuel prices.

17
18 **Q.** You mentioned that the Future Solar Projects are needed to
19 provide cost-effective energy. Please explain why Tampa
20 Electric is building it now.

21
22 **A.** The company is building additional solar energy now because
23 it is a cost-effective way to serve increased customer load
24 while reducing the impact of fuel price volatility on our
25 customers' bills. Tampa Electric has assembled a strong

1 team of dedicated employees and contractors that have the
2 experience to construct these projects efficiently and
3 safely. Any delay in solar project construction would
4 increase future costs since this expertise would have to
5 be regained.

6
7 In addition, with the passage of the Inflation Reduction
8 Act ("IRA"), the federal government is providing tax
9 incentives that benefit customers. Should the company delay
10 building the solar projects, the customers would not
11 receive the benefit of the additional tax incentives until
12 later in time.

13
14 **Q.** What is the total capital investment for the Future Solar
15 Projects?

16
17 **A.** Tampa Electric plans to invest approximately \$786.4 million
18 for the Future Solar Projects. This amount consists of
19 \$724.4 million in construction costs, \$54.0 million in
20 contingency, \$6 million in land held for future solar
21 construction and \$2 million in spare solar PV panels.

22
23 **Q.** What steps is the company taking to ensure that the Future
24 Solar Projects are built at the lowest reasonable cost?

25

1 **A.** Tampa Electric uses a competitive bidding process for the
2 major equipment associated with the projects as well as
3 for the Engineering, Procurement, and Construction (“EPC”)
4 contracts to perform the detailed design, procurement, and
5 construction of the projects. The bid requirement ensures
6 the lowest cost that meets the reliability and performance
7 requirements. In addition, Tampa Electric directly
8 contracts for the major equipment such as solar panels,
9 tracking systems, inverters, and transformers, which
10 eliminates any costs associated with contractor markups if
11 outsourced as part of the EPC contract.

12
13 **Q.** Why are the costs per kW_{ac} higher for the Future Solar
14 Projects included in this filing as compared to earlier
15 solar projects?

16
17 **A.** The costs have increased per kW_{ac} as compared to earlier
18 solar projects primarily due to inflation related to both
19 materials and labor. The increased costs are also a result
20 of (1) a rise in the cost of land due to more competition
21 for land in the company’s service territory; (2) a decrease
22 in the availability of land in proximity to existing
23 interconnections which results in higher interconnection
24 costs; and (3) a constrained supply chain for solar project
25 equipment, which means price increases for this specialized

1 equipment are outpacing the typically reported consumer
2 price index ("CPI").

3
4 These cost increases and the additional tax credits made
5 available under the IRA were included in the solar project
6 cost-effectiveness evaluations, and these projects still
7 provide net savings to our customers.

8
9 **Q.** Please describe the process the company uses to screen
10 and select sites for Future Solar Projects.

11
12 **A.** Tampa Electric's site selection and due diligence process
13 includes geotechnical studies, environmental surveys, and
14 wetland delineation. The sites were evaluated and
15 selected after considering environmental assessments, the
16 size of the project, proximity to Tampa Electric
17 transmission facilities, cost of land, suitability of the
18 site for solar PV construction, and whether the site is
19 located within the company's service territory.

20
21 **Q.** Please describe the English Creek Solar Project.

22
23 **A.** The English Creek Solar Project ("English Creek Solar")
24 is a 23 MW project located in Hillsborough County, Florida
25 on approximately 244 acres of land. This project uses a

1 single axis tracking system and is designed to optimize
2 energy output for the site's conditions. Document No. 2
3 of my exhibit contains project specifics, a general
4 arrangement drawing, and projected installed costs in
5 total and by category for the project.

6

7 **Q.** When does the company expect English Creek Solar to begin
8 commercial service?

9

10 **A.** Based on the current engineering, permitting,
11 procurement, and construction schedules, the company
12 expects this project to be complete and in service on or
13 before December 1, 2024.

14

15 **Q.** What arrangements has the company made to design and build
16 English Creek Solar?

17

18 **A.** Tampa Electric used a competitive process to review
19 qualifications, experience, and cost to identify and
20 select a full-service solar developer, followed by
21 contract negotiations. At the end of the process, Tampa
22 Electric selected Black & Veatch to provide project
23 development and EPC services for English Creek Solar.

24

25 In addition, Tampa Electric contracted for all the major

1 equipment necessary to construct the project including PV
2 modules, single axis tracking systems, inverters, and
3 step-up transformers.

4
5 **Q.** Please describe the Bullfrog Creek Solar Project.

6
7 **A.** The Bullfrog Creek Solar Project ("Bullfrog Creek Solar")
8 is a 74.5 MW project located in Hillsborough County,
9 Florida on approximately 485 acres of land. The project
10 uses a single axis tracking system and is designed to
11 optimize energy output for the site's conditions.
12 Document No. 3 of my exhibit contains project specifics,
13 a general arrangement drawing, and projected installed
14 costs in total and by category for the project.

15
16 **Q.** When does the company expect Bullfrog Creek Solar to begin
17 commercial service?

18
19 **A.** Based on the current engineering, permitting,
20 procurement, and construction schedules, the company
21 expects the projects to be complete and in service on or
22 before December 1, 2024.

23
24 **Q.** What arrangements has the company made to design and build
25 Bullfrog Creek Solar?

1 **A.** The company used a competitive process to review
2 qualifications, experience, and cost to identify and
3 select a full-service solar developer, followed by
4 contract negotiations. At the end of the process, Tampa
5 Electric selected Black & Veatch to provide project
6 development and EPC services for Bullfrog Creek Solar.

7
8 In addition, Tampa Electric has contracted for all the
9 major equipment necessary to construct the project
10 including PV modules, single axis tracking systems,
11 inverters, and step-up transformers.

12
13 **Q.** Please describe the Duette Solar Project.

14
15 **A.** The Duette Solar Project ("Duette Solar"), formerly known
16 as FFD Solar Project, is a 74.5 MW project located in
17 Manatee County, Florida on approximately 641 acres of
18 land. The project uses a single axis tracking system and
19 is designed to optimize energy output for the site's
20 conditions. Document No. 4 of my exhibit contains project
21 specifics, a general arrangement drawing, and projected
22 installed costs in total and by category for the project.

23
24 **Q.** When does the company expect Duette Solar to begin
25 commercial service?

1 **A.** Based on the current engineering, permitting,
2 procurement, and construction schedules, the company
3 expects the project to be complete and in service on or
4 before December 1, 2025.

5
6 **Q.** What arrangements has the company made to design and build
7 Duette Solar?

8
9 **A.** Duette Solar will be designed and built using the same
10 general contractual arrangements and processes and
11 competitive bid process that I described for the previous
12 projects. The EPC selection process began in 2024 to
13 support the project schedule.

14
15 Tampa Electric contracted for all the major equipment
16 necessary to construct the project including PV modules,
17 single axis tracking systems, inverters, and step-up
18 transformers.

19
20 **Q.** Please describe the Cottonmouth Ranch Solar Project.

21
22 **A.** The Cottonmouth Ranch Solar Project ("Cottonmouth Solar")
23 is a 74.5 MW project located in Hillsborough County,
24 Florida on approximately 458 acres of land. The project
25 uses a single axis tracking system and is designed to

1 optimize energy output for the site's conditions.
2 Document No. 5 of my exhibit contains project specifics,
3 a general arrangement drawing, and projected installed
4 costs in total and by category for the project.

5
6 **Q.** When does the company expect Cottonmouth Solar to begin
7 commercial service?

8
9 **A.** Based on the current engineering, permitting,
10 procurement, and construction schedules, the company
11 expects the project to be complete and in service on or
12 before December 1, 2025.

13
14 **Q.** What arrangements has the company made to design and build
15 Cottonmouth Solar?

16
17 **A.** Cottonmouth Solar will be designed and built using the
18 same general contractual arrangements and processes and
19 competitive bid process that I described for the previous
20 projects. The EPC selection process began in 2024 to
21 support the project schedule.

22
23 Tampa Electric contracted for all the major equipment
24 necessary to construct the project including PV modules,
25 single axis tracking systems, inverters, and step-up

1 transformers.

2

3 **Q.** Please describe the Big Four Solar Project.

4

5 **A.** The Big Four Solar Project ("Big Four Solar") is a 74.5
6 MW project located in Polk County, Florida on
7 approximately 680 acres of land. The project uses a single
8 axis tracking system and is designed to optimize energy
9 output for the site's conditions. Document No. 6 of my
10 exhibit contains project specifics, a general arrangement
11 drawing, and projected installed costs in total and by
12 category for the project.

13

14 **Q.** When does the company expect Big Four Solar to begin
15 commercial service?

16

17 **A.** Based on the current engineering, permitting,
18 procurement, and construction schedules, the company
19 expects the project to be complete and in service on or
20 before May 1, 2026.

21

22 **Q.** What arrangements has the company made to design and build
23 Big Four Solar?

24

25 **A.** Big Four Solar will be designed and built using the same

1 general contractual arrangements and processes and
2 competitive bid process that I described for the previous
3 projects. The EPC selection process began in 2024 to
4 support the project schedule.

5
6 Tampa Electric has contracted for all the major equipment
7 necessary to construct the project including PV modules,
8 single axis tracking systems, inverters, and step-up
9 transformers.

10

11 **Q.** Please describe the Farmland Solar Project.

12

13 **A.** The Farmland Solar Project ("Farmland Solar") is a 54.4
14 MW project located in Hillsborough County, Florida on
15 approximately 383 acres of land. The project uses a single
16 axis tracking system and is designed to optimize energy
17 output for the site's conditions. Document No. 7 of my
18 exhibit contains project specifics, a general arrangement
19 drawing, and projected installed costs in total and by
20 category for the project.

21

22 **Q.** When does the company expect Farmland Solar to begin
23 commercial service?

24

25 **A.** Based on the current engineering, permitting,

1 procurement, and construction schedules, the company
2 expects the project to be complete and in service on or
3 before December 1, 2026.

4
5 **Q.** What arrangements has the company made to design and build
6 Farmland Solar?

7
8 **A.** Farmland Solar will be designed and built using the same
9 general contractual arrangements and processes and
10 competitive bid process that I described for the previous
11 projects. The EPC selection process will begin in early
12 2025 to support the project schedule.

13
14 Tampa Electric contracted for all the major equipment
15 necessary to construct the project including PV modules,
16 single axis tracking systems, inverters, and step-up
17 transformers.

18
19 **Q.** Please describe the Brewster Solar Project.

20
21 **A.** The Brewster Solar Project ("Brewster Solar"), formerly
22 known as Solvay Solar Project, is a 38.8 MW project
23 located in Polk County, Florida on approximately 191 acres
24 of land. The project uses a single axis tracking system
25 and is designed to optimize energy output for the site's

1 conditions. Document No. 8 of my exhibit contains project
2 specifics, a general arrangement drawing, and projected
3 installed costs in total and by category for the project.
4

5 **Q.** When does the company expect Brewster Solar to begin
6 commercial service?
7

8 **A.** Based on the current engineering, permitting,
9 procurement, and construction schedules, the company
10 expects the project to be complete and in service on or
11 before December 1, 2026.
12

13 **Q.** What arrangements has the company made to design and build
14 Brewster Solar?
15

16 **A.** Brewster Solar will be designed and built using the same
17 general contractual arrangements and processes and
18 competitive bid process that I described for the previous
19 projects. The EPC selection process will begin in early
20 2025 to support the project schedule.
21

22 Tampa Electric is actively negotiating the PV module
23 supply contract to support this project and will perform
24 a competitive bid process for the remaining major
25 equipment to support the project schedule.

1 Q. Please describe the Wimauma 3 Solar Project.

2

3 A. The Wimauma 3 Solar Project ("Wimauma 3 Solar"), formerly
4 known as FRP Solar Project, is a 74.5 MW project located
5 in Hillsborough County, Florida on approximately 500
6 acres of land. The project uses a single axis tracking
7 system and is designed to optimize energy output for the
8 site's conditions. Document No. 9 of my exhibit contains
9 project specifics, a general arrangement drawing, and
10 projected installed costs in total and by category for
11 the project.

12

13 Q. When does the company expect Wimauma 3 Solar to begin
14 commercial service?

15

16 A. Based on the current engineering, permitting,
17 procurement, and construction schedules, the company
18 expects the project to be complete and in service on or
19 before December 1, 2026.

20

21 Q. What arrangements has the company made to design and build
22 Wimauma 3 Solar?

23

24 A. Wimauma 3 Solar will be designed and built using the same
25 general contractual arrangements and processes and

1 competitive bid process that I described for the previous
2 projects. The EPC selection process will begin in early
3 2025 to support the project schedule.

4
5 Tampa Electric is actively negotiating the PV module
6 supply contract to support this project and will perform
7 a competitive bid process for the remaining major
8 equipment to support the project schedule.

9
10 **Q.** What safety protocols are in place for contractors
11 involved in constructing the Future Solar Projects?

12
13 **A.** The company uses its Contractor Safety Management Program
14 to manage contractor safety at the project sites. Before
15 the project begins, a senior management level meeting is
16 held with the EPC to set expectations for successful
17 implementation of the Health, Safety, and Environmental
18 program. This meeting is followed by safety orientations
19 and review of all EPC safety documentation. Tampa Electric
20 uses an online contractor and supplier management
21 platform to ensure the EPC is maintaining the company's
22 minimum safety requirements. This includes analysis of
23 (1) Days Away / Restricted or Transfer rate ("DART"); (2)
24 Total Recordable Incident Rate ("TRIR"); (3) active
25 insurance; and (4) effective written safety programs.

1 Tampa Electric assigns safety professionals to each solar
2 site to assist Construction Supervisors in monitoring
3 project activities for compliance of both Tampa
4 Electric's and the EPC's Health, Safety, and
5 Environmental programs.

6

7 **Q.** Has the company procured the land necessary for the Future
8 Solar Projects?

9

10 **A.** The company procured land for seven of the eight Future
11 Solar Projects. The status of land procurement for each
12 project is shown below. The list below summarizes the
13 status of land procurement for each project, as well as
14 whether the land is already owned by Tampa Electric or
15 will be leased or purchased.

16	English Creek	Owned
17	Bullfrog Creek	Under long-term lease
18	Duette	Under contract to purchase
19	Cottonmouth	Lease option to be exercised
20	Big Four	Negotiating with landowner
21	Farmland	Under contract to purchase
22	Brewster	Under contract to purchase
23	Wimauma 3	Lease option to be exercised

24

25 **Q.** What is the status of project engineering, design, and

1 permitting for the Future Solar Projects?

2

3 **A.** The engineering and design for English Creek Solar and
4 Bullfrog Creek Solar is underway. Engineering and design
5 for the remaining six projects will be completed on time
6 to support each project schedule.

7

8 English Creek Solar received an environmental resource
9 permit in December 2017, and the county permit was
10 received in November 2023. The site work for this project
11 began in January 2024.

12

13 Bullfrog Creek received an environmental resource permit
14 in October 2023, and the county permit was received in
15 January 2024. The site work began in February 2024.

16

17 **Q.** Has the company purchased PV modules necessary to
18 construct the projects?

19

20 **A.** Yes. Tampa Electric solicited pricing from several module
21 manufacturers and determined First Solar to be the best
22 value for most of the projects based on pricing,
23 demonstrated performance, and reduced risk of tariff
24 exposure. Tampa Electric purchased enough First Solar
25 Series 6 Plus modules to support 85 percent of the Future

1 Solar Project needs.

2

3 For the remaining 15 percent, which will not be needed
4 until 2026, Tampa Electric is negotiating to purchase
5 modules from Canadian Solar due to improved pricing,
6 performance, and reduced tariff exposure compared to
7 previous years. These panels will be the latest technology
8 available at the time of shipment.

9

10 **Q.** What are the projected installed costs for the Future
11 Solar Projects?

12

13 **A.** The projected installed costs of the Future Solar Projects
14 with land are as follows. Lease costs and AFUDC are not
15 included in these figures.

16	English Creek	\$40.4M or \$1,754 per kW _{ac}
17	Bullfrog Creek	\$104.5M or \$1,402 per kW _{ac}
18	Duette	\$109.2M or \$1,466 per kW _{ac}
19	Cottonmouth	\$105.1M or \$1,410 per kW _{ac}
20	Big Four	\$99.2M or \$1,332 per kW _{ac}
21	Farmland	\$89.3M or \$1,641 per kW _{ac}
22	Brewster	\$54.7M or \$1,411 per kW _{ac}
23	Wimauma 3	\$122.0M or \$1,637 per kW _{ac}

24

25 **Q.** What costs were included in these projections for the

1 Future Solar Projects?

2

3 **A.** The projected total installed costs broken down by major
4 category for the Future Solar Projects are shown on
5 Document Nos. 2 through 9 of my exhibit.

6

7 **Q.** How were the projected cost amounts in your exhibit
8 developed?

9

10 **A.** Tampa Electric used a combination of our recently
11 completed project EPC costs, combined with updated major
12 equipment pricing from suppliers and anticipated project
13 specific land and interconnect costs to determine the all-
14 in costs for the projects. This included negotiating and
15 executing agreements directly with manufacturers and
16 suppliers for PV modules, inverters, single axis
17 trackers, and Generator Step-up ("GSU") transformers. The
18 fixed O&M amounts were developed by Tampa Electric's solar
19 operations group based on experience operating our
20 existing solar fleet.

21

22 **Q.** How is the cost of land used in the calculation of each
23 Future Solar Project's estimated installed cost?

24

25 **A.** The Bullfrog Creek, Cottonmouth, Big Four Solar, and

1 Wimauma 3 projects are located on leased land, so land
2 costs are not included in the projected installed cost.
3 However, the land lease costs were included in project
4 cost-effectiveness analysis by Mr. Aponte. English Creek
5 Solar is being constructed on land previously purchased
6 by the company, and included in rate base, as referenced
7 in MFR Schedule B-15. The company is currently under
8 contract to purchase the land for the Duette, Farmland,
9 and Brewster Solar projects, and these land costs are
10 included in the estimated installed cost.

11

12 **Q.** What other benchmarks demonstrate that the costs of the
13 Future Solar Projects are reasonable?

14

15 **A.** A September 2023 National Renewable Energy Laboratory
16 ("NREL") report that benchmarks US solar costs, "U.S.
17 Solar Photovoltaic System and Energy Storage Cost
18 Benchmarks, With Minimum Sustainable Price Analysis: Q1
19 2023" shows a 74.6 MW utility scale PV system with single
20 axis tracking costs an average of \$1,556 per kW_{ac} excluding
21 land costs (when converted from a direct current basis to
22 the more commonly used alternating current basis). Tampa
23 Electric's Future Solar Projects costs, excluding land,
24 average \$1,428 per kW_{ac}, or eight percent less than the
25 average cost.

1 Q. Are Allowance for Funds Used During Construction
2 ("AFUDC") costs included in your cost estimates?
3

4 A. No. Mr. Aponte added AFUDC to the Future Solar Projects
5 costs I provided and used the total cost, including AFUDC,
6 when analyzing each project's cost-effectiveness.
7

8 Q. Are the Future Solar Project costs reasonable?
9

10 A. Yes. Tampa Electric based the projected Future Solar
11 Project costs on actual contracted costs for the projects
12 combined with recent construction costs and major
13 equipment purchases for previous projects adjusted for
14 inflation. Tampa Electric controls project costs using
15 competitive bidding processes; diligent oversight of EPC
16 contractors; negotiation of cost-effective equipment
17 purchases for PV modules, inverters, and tracking
18 systems; and project management to ensure the projects
19 remain on time and on budget. As previously discussed,
20 these project costs are below recent benchmark prices.
21

22 **FUTURE ENERGY STORAGE CAPACITY PROJECTS**

23 Q. Please describe the Future Energy Storage Capacity
24 Projects.
25

1 **A.** Tampa Electric is building 115 MW of energy storage
2 capacity to include (1) the 15 MW Dover Energy Storage
3 Capacity Project ("Dover"); (2) the 40 MW Lake Mabel
4 Energy Storage Capacity Project ("Lake Mabel"); (3) the
5 40 MW Wimauma Energy Storage Capacity Project
6 ("Wimauma"); and (4) the 20 MW South Tampa Energy Storage
7 Capacity Project ("South Tampa"), collectively, the
8 "Future Energy Storage Capacity Projects." These projects
9 are part of the company's ongoing efforts to improve the
10 efficiency, sufficiency, and adequacy of facilities. All
11 four projects use the latest Lithium Iron Phosphate
12 ("LFP") technology and provide two hours of storage at
13 the design capacity. The Dover, Lake Mabel, and Wimauma
14 Energy storage capacity projects are located on existing
15 solar sites to reduce costs. The South Tampa energy
16 storage capacity project is located on the ~~MacDill Air~~
17 ~~Force Base~~, which is described in greater detail in the
18 direct testimony of Tampa Electric witness Carlos
19 Aldazabal.

20
21 **Q.** Please explain why the Future Energy Storage Capacity
22 Projects are needed.

23
24 **A.** The Future Energy Storage Capacity Projects are needed to
25 help the company maintain the required winter capacity

1 reserve margin as peak load grows with increased
2 customers. Additionally, these projects will provide the
3 ability to shift generation from the time it is generated
4 to times when customer demands are highest. This shift in
5 timing will also provide fuel savings for customers by
6 storing lower cost off-peak generation and delivering it
7 during peak times. The Lake Mabel project has the added
8 benefit of eliminating an otherwise necessary
9 transmission upgrade by locating an energy source close
10 to a high load area, as referenced in Mr. Aponte's direct
11 testimony.

12
13 **Q.** What is the total capital investment for the Future Energy
14 Storage Capacity Projects?

15
16 **A.** The company will invest approximately \$156.1 million for
17 the Future Energy Storage Capacity Projects. This amount
18 consists of \$136.8 million in construction costs and \$19.3
19 million in contingency.

20
21 **Q.** When does the company expect the Future Energy Storage
22 Capacity Projects to begin commercial service?

23
24 **A.** Based on the current engineering, permitting,
25 procurement, and construction schedules, Tampa Electric

1 expects the projects to be complete and in service on or
2 before the dates shown below.

3	Dover	September 2024
4	Lake Mabel	January 2025
5	Wimauma	February 2025
6	South Tampa	April 2025

7

8 **Q.** Were any changes made to in-service dates after the budget
9 and MFR Schedules were completed?

10

11 **A.** Yes, one such change occurred, and the correct in-service
12 date is shown in the list above. For the Lake Mabel
13 project, the in-service date used in the budget and our
14 financial data for this rate case was based on an April
15 2025 in-service date. We corrected the date in my
16 testimony but have not adjusted our filing to increase
17 the revenue requirement to reflect the earlier in-service
18 date.

19

20 **Q.** What arrangements has the company made to design and build
21 the Future Energy Storage Capacity Projects?

22

23 **A.** Tampa Electric completed a competitive bidding process
24 and entered into contracts for the major equipment,
25 engineering, and construction services for all four of

1 the projects. The major equipment includes the battery
2 cells and electrical switchgear.

3

4 **Q.** What safety protocols are in place for contractors
5 involved in constructing the Future Energy Storage
6 Capacity Projects?

7

8 **A.** The safety protocols are identical to those discussed
9 previously in my testimony for the Future Solar Projects.
10 The construction work oversight will be provided by the
11 same team of professionals that monitors the company's
12 solar projects.

13

14 **Q.** What are the projected installed costs for the Future
15 Energy Storage Capacity Projects?

16

17 **A.** The projected installed costs of the Future Energy Storage
18 Capacity Projects are as follows.

19	Dover	\$18.5M or \$1,232/kW
20	Lake Mabel	\$48.6M or \$1,215/kW
21	Wimauma	\$42.7M or \$1,067/kW
22	South Tampa	\$27.0M or \$1,351/kW

23

24 **Q.** Did you include the same types of costs and use the same
25 cost estimation techniques for Future Solar Projects?

1 **A.** Yes, however, since most of the costs for the Future
2 Energy Storage Capacity Projects are already under fixed
3 priced contracts, the company was able to use these values
4 instead of estimates. The specifications and projected
5 total installed costs broken down by major category for
6 the Future Energy Storage Projects are shown on Document
7 Nos. 10 through 13 of my exhibit.

8

9 **Q.** What other benchmarks demonstrate that the costs of these
10 projects are reasonable?

11

12 **A.** As I previously mentioned, the NREL Annual Technology
13 Baseline provides benchmark costs for various renewable
14 energy technologies, including utility scale energy
15 storage capacity. The 2023 update to this benchmark
16 reports an installed system capital cost of \$1,074 per kW
17 in 2021 dollars for a 60MW-120MWh project. When adjusted
18 for inflation through 2024, the benchmark is \$1,300 per
19 kW. Tampa Electric's project cost is \$1,189 per kW or 8
20 percent lower.

21

22 **FUTURE ENVIRONMENTAL COMPLIANCE PROJECT**

23 **Q.** Is Tampa Electric exploring technologies to promote the
24 long-term viability of its generating units?

25

1 **A.** Yes, Tampa Electric is actively monitoring and exploring
2 developments in technologies that may promote the long-
3 term viability of its fossil fuel generation units,
4 including carbon capture and storage ("CCS").

5
6 **Q.** Please describe CCS.

7
8 **A.** CCS employs a well-proven technology in which carbon
9 dioxide is absorbed from the exhaust gas of the power plant
10 and then concentrated and compressed for safe, permanent
11 storage deep in the earth. The technology can remove
12 greater than 90 percent of the carbon emissions from a
13 power plant. This technology has been applied to chemical
14 processing and natural gas treatment plants and
15 successfully used at two power generation facilities in
16 North America.

17
18 **Q.** Please describe Tampa Electric's CCS evaluation.

19
20 **A.** Tampa Electric's CCS evaluation includes (1) performing
21 detailed front-end engineering and design ("FEED")
22 studies; (2) developing and submitting permit
23 applications; and (3) preparing community benefits plans.
24 Additionally, the company will conduct detailed geological
25 characterizations to confirm the feasibility of CCS

1 technology at its Polk Power Station ("Polk"). This work
2 also supports the development of an accurate cost estimate
3 to use CCS technology at Polk. This evaluation is a prudent
4 step to ensure the continued beneficial use of Polk in the
5 future.

6
7 **Q.** Why is the company evaluating CCS technology now?

8
9 **A.** The company is evaluating CCS technology now primarily
10 because of (1) a proposed rule announced by the United
11 States' Environmental Protection Agency ("EPA") to impose
12 standards for greenhouse gas emissions; and (2) the
13 availability of federal financial support.

14
15 On May 23, 2023, the EPA announced a proposed rule to
16 impose standards for greenhouse gas emissions for certain
17 fossil fuel-fired electric generating units. Tampa
18 Electric could not prudently ignore the possibility that
19 limits on greenhouse gas emissions would soon be imposed
20 on the company's fossil fuel generation units. In addition,
21 the proposed rule compliance schedule meant that unless
22 Tampa Electric began studying technologies for greenhouse
23 gas emissions reductions, certain options, as well as the
24 federal grants associated with them, would no longer be
25 available or feasible to achieve compliance by the

1 deadlines set in the rule.

2

3 **Q.** Please describe the DOE funding awarded to Tampa Electric.

4

5 **A.** The value of the DOE funding is approximately \$98.4
6 million. The awards constitute cooperative agreements
7 where the DOE provides a percentage cost share of 80
8 percent on two awards and 50 percent on the third. The
9 total cost of the CCS evaluation is an estimated \$126.5
10 million, and Tampa Electric's portion of the total cost is
11 approximately \$28.1 million. These awards provided Tampa
12 Electric the opportunity to evaluate CCS technology at a
13 significantly reduced cost to customers.

14

15 **Q.** Have there been any new developments related to the
16 company's evaluation of CCS technology to comply with the
17 proposed EPA rules?

18

19 **A.** On February 29, 2024, the EPA announced that existing
20 natural gas-based units will no longer be covered by the
21 proposed rule; the EPA stated a separate rule limiting
22 emissions from existing natural gas-fired units will be
23 issued. These emissions limits likely will have strict
24 compliance deadlines that would be difficult for the
25 company to achieve in a timely and cost-effective manner

1 without completing the ongoing prudent evaluation to
2 determine its compliance options.

3

4 Tampa Electric made a prudent decision to evaluate CCS
5 technology and is acting prudently by continuing its
6 evaluation of compliance options now while the federal
7 funding remains available and significantly offsets the
8 evaluation cost.

9

10 **Q.** When will the evaluation be completed?

11

12 **A.** Tampa Electric expects to complete the evaluation by the
13 end of 2025.

14

15 **Q.** What part of the evaluation costs are requested for
16 recovery in this proceeding?

17

18 **A.** The total cost of the CCS evaluation is an estimated \$126.5
19 million. Of this amount, the company anticipates receiving
20 \$98.4 million in federal funding from the DOE. Thus, the
21 company will be responsible for approximately \$28.1 million
22 of the total cost. Of that amount, \$18.2 million is capital
23 included in the 2025 test year.

24

25

1 **EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT**

2 **Q.** Is Tampa Electric exploring any research and development
3 ("R&D") projects in your area?

4
5 **A.** Yes, the company is actively working on two R&D projects
6 in my area. One is a long duration energy storage project,
7 and the other is a microgrid at our Florida Conservation
8 and Technology Center ("FCTC"). These are both emerging
9 technologies that will likely be used in the future as the
10 grid evolves to enable higher levels of customer owned
11 distributed energy resources as discussed in the testimony
12 of Tampa Electric witness Chip Whitworth.

13
14 **Q.** Are the costs associated with these R&D projects prudent?

15
16 **A.** Yes, the approximately \$7.1 million in costs associated
17 with these R&D projects are prudent to better understand
18 the possibilities and limitations of these technologies
19 before it is necessary to implement them on a larger scale.

20
21 **SUMMARY**

22 **Q.** Please summarize your direct testimony.

23
24 **A.** Tampa Electric is building 488.7 MW of additional
25 renewable capacity over eight new Future Solar Projects.

1 The projects have in-service dates ranging from December
2 2024 through December 2026.

3
4 Additionally, Tampa Electric is building 115 MW of Future
5 Energy Storage Capacity Projects over four projects.
6 These projects include Dover, Lake Mabel, Wimauma, and
7 South Tampa.

8
9 Tampa Electric controls project costs using competitive
10 bidding processes, diligent oversight of EPC contractors,
11 negotiation of cost-effective equipment purchases, and
12 project management to ensure the projects remain on time
13 and on budget. The costs of these projects are reasonable,
14 prudent, and competitive with external benchmarks and
15 should be approved for cost recovery in the company's base
16 rates.

17
18 The company's proposal to evaluate CCS technology and its
19 two R&D projects are reasonable and prudent and should be
20 approved for cost recovery in the company's base rates.

21

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

23

24 **A.** Yes, it does.

25

1 (Whereupon, prefiled rebuttal testimony of
2 Kris Stryker was inserted.)

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BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20240026-EI

PETITION FOR RATE INCREASE
BY TAMPA ELECTRIC COMPANY

REBUTTAL TESTIMONY AND EXHIBIT
OF
KRIS STRYKER

1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **REBUTTAL TESTIMONY**

3 **OF**

4 **KRIS STRYKER**

5
6 **Q.** Please state your name, address, occupation and employer.

7
8 **A.** My name is Kris Stryker. My business address is 702 North
9 Franklin Street, Tampa, Florida 33602. I am employed by
10 Tampa Electric Company ("Tampa Electric" or the
11 "company") as Vice President Clean Energy and Emerging
12 Technology.

13
14 **Q.** Are you the same Kris Stryker who filed direct testimony
15 in this proceeding?

16
17 **A.** Yes.

18
19 **Q.** Have your title and duties and responsibilities changed
20 since the company filed your prepared direct testimony on
21 April 2, 2024?

22
23 **A.** No.

24
25 **Q.** What are the purposes of your rebuttal testimony?

1 **A.** My rebuttal testimony serves two general purposes.

2

3 First, I will address the recommendations included in the
4 direct testimony of Jonathan Ly, filed on behalf of the
5 Florida Industrial Power Users Group, related to the
6 company's proposed solar generation projects.

7

8 Second, I will address the portion of the direct testimony
9 of Devi Glick, filed on behalf of the Sierra Club, which
10 addresses the potential of Carbon Capture and
11 Sequestration ("CCS") at Tampa Electric's Polk Power
12 Station Unit 1 ("Polk Unit 1") generating facility.

13

14 **Q.** Have you prepared an exhibit supporting your rebuttal
15 testimony?

16

17 **A.** Yes. Rebuttal Exhibit No. KS-2, entitled "Rebuttal
18 Exhibit of Kris Stryker," was prepared by me or under my
19 direction and supervision. The contents of this exhibit
20 were derived from the business records of the company and
21 are true and correct to the best of my information and
22 belief. My rebuttal exhibit consists of one document,
23 identified as Document No. 1, which is "NREL: Best
24 Practices Handbook for the Collection and Use of Solar
25 Resource Data for Solar Energy Applications: Second

1 Edition.”

2
3 **I. TAMPA ELECTRIC'S PROPOSED SOLAR PROJECTS ARE COST-**
4 **EFFECTIVE, AND NO COST CAPS OR PERFORMANCE STANDARDS FOR**
5 **THOSE PROJECTS ARE NECESSARY**

6 **Q.** On page 12 of his direct testimony, Mr. Ly recommends
7 that the Commission impose a portfolio cost cap of \$1,609
8 per kW for Tampa Electric's proposed Future Solar
9 Projects. Do you agree that this cost cap is necessary?

10
11 **A.** No. The Future Solar Projects are cost-effective at our
12 current estimated cost and in our sensitivity analyses as
13 stated in Tampa Electric witness, Jose Aponte's
14 testimony. The \$1,609 per kW figure presented by Mr. Ly
15 is calculated by dividing the company's full \$786.4
16 million investment in the Future Solar Projects, as
17 referenced on page eight of my direct testimony, by the
18 nameplate capacity of those units. This \$786.4 million
19 investment also represents the investment included in the
20 company's revenue requirement requests for the Future
21 Solar Projects. The amount the company can recover for
22 the Future Solar Projects portfolio if the Commission
23 approves cost recovery for the projects in this case is
24 limited to the revenue requirement increases that are
25 based on the \$786.4 million investment included in the

1 calculation of the revenue requirement requests. If the
2 actual costs of individual Future Solar Projects exceed
3 what is included in this case, the company would need to
4 request recovery for those costs in a future rate case.
5 Therefore, the cost cap proposed by Mr. Ly is unnecessary.

6
7 **Q.** On pages 13-14 of his direct testimony, Mr. Ly recommends
8 that the Commission impose a performance standard of 26
9 percent average annual net capacity factor. Do you agree
10 that this performance standard is necessary?

11
12 **A.** No. It is true that Tampa Electric projects that the
13 Future Solar units will have, on average, an annual net
14 capacity factor of 26 percent. It is also true that the
15 company will design, operate, and maintain the units in
16 a manner to achieve the highest possible capacity factor.
17 The reality, however, is that the company does not have
18 as much control on whether a solar unit's projected
19 capacity factor is achieved as it would with traditional
20 fossil-fueled generating units. This is because the main
21 factor affecting solar unit capacity factor is the solar
22 irradiance in any given year. This factor is highly
23 variable and fully outside of the company's control. The
24 National Renewable Energy Laboratory ("NREL") published
25 a report, titled "Best Practices Handbook for the

1 Collection and Use of Solar Resource Data for Solar Energy
2 Applications," which states that in the United States the
3 inter-annual variability of solar irradiance is 8 to 10
4 percent, which will have a direct impact on annual
5 capacity factor variability. This report is included in
6 my Rebuttal Exhibit No. KS-2, Document No. 1.

7
8 Furthermore, the company already has an incentive to
9 maximize solar asset performance. The company's revenue
10 requirement assumes that these units will achieve their
11 projected capacity factors and thereby achieve the
12 projected level of performance tax credits ("PTC"). The
13 PTC lowers the company's income tax expense. Since the
14 company is not proposing a true-up mechanism for the
15 volume of PTC, failure to achieve the projected level of
16 unit performance would result in a higher level of income
17 tax expense than what is budgeted in the projected test
18 year. This creates an additional incentive to maximize
19 solar unit performance.

20
21 Finally, I believe it is inappropriate to apply a
22 performance standard to a subset of one utility's
23 generating assets. The Commission already has a long-
24 established regulatory tool called the Generation
25 Performance Incentive Factor ("GPIF"), under which the

1 Commission can reward or penalize companies based on the
2 heat rate and unit availability factors of their fossil-
3 fueled generating units. If Mr. Ly believes that the
4 Commission should impose performance standards on solar
5 units, and the Commission agrees, the Commission should
6 develop a performance standard mechanism applicable to
7 all Florida public electric utilities through rulemaking
8 but should not do so in a rate case for one utility.
9

10 **II. PLANS FOR CCS AT POLK UNIT 1**

11 **Q.** On page 27 of her direct testimony, Ms. Glick asserts
12 that the company has only performed a "surface-level"
13 evaluation of the potential of CCS at Polk Unit 1, and
14 that the company's CCS plans do not justify keeping Polk
15 Unit 1 in service. Do you agree with this assessment?
16

17 **A.** No. It is important to note at the outset that Tampa
18 Electric is not seeking cost recovery for installation of
19 CCS at Polk Unit 1 in this rate case. Furthermore, as
20 discussed on page 45 of the direct testimony of Tampa
21 Electric witness, Carlos Aldazabal, the company's main
22 rationale for maintaining the Polk Unit 1 gasification
23 assets is fuel diversity, not the potential of a future
24 CCS project at that unit. Ms. Glick's comments and
25 arguments are misplaced.

1 That being said, the company has conducted preliminary
2 evaluations of CCS at Polk Unit 1. While the company's
3 investigation into CCS on Polk Unit 1 is in the
4 feasibility stage, I disagree that it is only "surface-
5 level."

6
7 **Q.** On page 28 of her testimony, Ms. Glick asserts that Tampa
8 Electric "could be facing hundreds of millions to even
9 billions of dollars of potential overages" if it attempts
10 to install CCS at Polk Unit 1. Do you agree with this
11 assessment?

12
13 **A.** No. It is not reasonable to compare a retrofit project at
14 an existing mature facility to a greenfield construction
15 project of a large-scale new generation facility using
16 new technology. In addition, Tampa Electric already has
17 experience building and operating a slip steam CCS
18 facility on Polk Unit 1 during the Warm Gas Clean-up
19 Demonstration Project sponsored by the Department of
20 Energy ("DOE"). This demonstration project successfully
21 treated approximately 20 percent of Polk Unit 1's total
22 syngas flow with carbon capture technology. This project
23 was completed in 2015, is still in place and owned by the
24 company, and was completed on budget.

25

1 In 2023, Tampa Electric hired a consultant to perform a
2 feasibility study for potential installation of CCS at
3 Polk Unit 1 in the future. The estimated cost for the
4 project, included as part of this study, was approximately
5 \$300 million, demonstrating that a cost overrun in the
6 billions of dollars is improbable.

7
8 **Q.** On pages 28 to 29, Ms. Glick asserts that Polk Unit 1 is
9 "the type of facility that is the least well-suited to
10 CCS" due to the "energy penalty" of operating CCS and the
11 unit's "low" capacity factor. Do you agree with this
12 characterization of Polk Unit 1?

13
14 **A.** No. The type of CCS technology that Tampa Electric would
15 deploy on Polk Unit 1 is commonly referred to as pre-
16 combustion carbon capture, which is the same technology
17 used in the DOE-sponsored demonstration project I
18 previously discussed. This technology separates carbon
19 from fuel before burning it. This allows the separation
20 to happen when the carbon concentration is much higher,
21 resulting in a lower energy penalty. Furthermore, the
22 economics of Polk Unit 1 would improve if the unit was
23 generating the Section 45(Q) tax credits referenced in
24 Ms. Glick's testimony, which in turn would result in a
25 high-capacity factor for the unit.

1 **III. SUMMARY**

2 **Q.** Please summarize your rebuttal testimony.

3

4 **A.** Tampa Electric's proposed Future Solar Projects are cost-
5 effective, and the company already has incentives to
6 complete those projects on budget and to construct,
7 operate, and maintain those projects in a manner that
8 will maximize their generating capacity. As a result, the
9 Commission should reject Mr. Ly's proposed cost cap and
10 performance standards for those projects. Furthermore,
11 Tampa Electric is not seeking cost recovery for
12 installation of CCS at Polk Unit 1 in this proceeding and
13 did not determine that Polk Unit 1 should remain in
14 service based on the possible economic benefits of
15 installing CCS there. Tampa Electric's work to evaluate
16 the feasibility of CCS at Polk Unit 1 is ongoing and
17 considers the economics of potential tax credits as well
18 as operational metrics. The company's work to date
19 illustrates that Ms. Glick's arguments regarding the
20 feasibility and cost of CCS at Polk Unit 1 miss the mark.

21

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

23

24 **A.** Yes, it does.

25

1 BY MR. MEANS:

2 Q Mr. Stryker, did you also prepare and cause to
3 be filed with your prepared direct testimony an exhibit
4 marked KS-1, consisting of 14 documents?

5 A Yes, I did.

6 Q Did you also prepare and cause to be filed
7 with your rebuttal testimony an exhibit marked KS-2,
8 consisting of one document?

9 A Yes, I did.

10 MR. MEANS: Mr. Chairman -- or Commissioner,
11 Tampa Electric would note for the record that
12 Exhibits KS-1 and 2 have been identified on the
13 Comprehensive Exhibit List as Exhibits 19 and 143.

14 COMMISSIONER GRAHAM: Duly noted.

15 BY MR. MEANS:

16 Q Mr. Stryker, did you prepare a summary of your
17 prepared direct and rebuttal testimony?

18 A I did.

19 Q Can you please give that summary?

20 A Sure I can.

21 Good evening, Commissioners. My direct
22 testimony describes the company's plans for solar
23 generation, energy storage, future environmental
24 compliance and emerging technology research and
25 development.

1 First, I describe Tampa Electric's plans to
2 add eight new solar PV generating projects with a total
3 capacity of nearly 490 megawatts from December of 2024
4 to December of 2026, and how the company will complete
5 these projects safely, on schedule, on budget and at a
6 reasonable cost; and how they will qualify for tax
7 incentives under the Inflation Reduction Act.

8 Second, I will describe Tampa Electric's plans
9 to install 115 megawatts of energy storage capacity at
10 four sites. As with the solar projects, my testimony
11 explains how the company's estimated costs for these
12 projects are reasonable, and how the company will
13 complete these projects at a reasonable cost.

14 My direct testimony also describes Tampa
15 Electric's carbon capture and storage project at Polk
16 Unit 2. The project includes preliminary work to
17 evaluate the feasibility of installing CCS at Polk, and
18 to develop an accurate cost estimate for such a project.

19 Tampa Electric is competing -- completing this
20 work now for two reasons:

21 First, the EPA has announced proposed rules to
22 impose emission standards for fossil fuel units with
23 regards to greenhouse gas emissions.

24 Second, the Department of Energy has awarded
25 Tampa Electric nearly \$100 million in funding, which

1 comprises over three-fourths of the total cost of the
2 evaluation.

3 Based on these factors, the company concluded
4 that it is prudent to evaluate carbon capture technology
5 now while the federal funding remains available, rather
6 than waiting until a final federal environmental mandate
7 is in place.

8 Finally, my testimony describes two research
9 and development projects. These include a long duration
10 energy storage project and a microgrid at the Florida
11 Conservation and Technology Center. These projects will
12 allow the company to understand the capacities and
13 limitations of these technologies.

14 My rebuttal testimony also explains why the
15 proposed cost caps and performance standards recommended
16 by the FIPUG's witness are unnecessary, and addresses
17 Sierra Club's critiques of the potential viability of
18 CCS at Polk.

19 This concludes my summary. Thank you.

20 **Q Thank you.**

21 MR. MEANS: We tender the witness for
22 cross-examination.

23 COMMISSIONER GRAHAM: Thank you.

24 Mr. Stryker, welcome.

25 THE WITNESS: Thank you.

1 COMMISSIONER GRAHAM: OPC.

2 MS. WESSLING: Thank you, Commissioner.

3 EXAMINATION

4 BY MS. WESSLING:

5 Q And good afternoon, Mr. Stryker.

6 A Good afternoon.

7 Q I don't think we have had the chance to meet
8 yet.

9 A No.

10 Q I understand you are the VP of Clean Energy
11 and Emerging Technology for Tampa Electric?

12 A Yes, ma'am, I am.

13 Q And how long have you been in that role?

14 A I have been in that role for almost two years.

15 Q Okay. And I have a few questions for you. We
16 will start off with, Tampa Electric has included
17 projected revenue requirements for eight new solar
18 facilities in TECO's petition for a rate increase,
19 correct?

20 A That's correct.

21 Q And those different facilities are expected to
22 be operational starting at various times over the next
23 few years, is that right?

24 A That is correct.

25 Q If the Commission approves the revenue

1 requirements in this case, you would agree that Tampa
2 Electric will begin to collect this amount from
3 customers starting on January 1st of 2025?

4 A That is correct.

5 Q And just because this revenue requirement is
6 collected from customers does not guarantee that these
7 solar facilities will actually be in service on the
8 schedule laid out in your testimony, is that accurate?

9 A That is not -- yeah, you are correct. It's
10 not a guarantee. But our performance has been
11 historically to bring projects in on schedule.

12 Q And although there may be that history that
13 you just mentioned, it is possible that one or more
14 solar facility projects could be delayed, or potentially
15 even canceled down the road, a possibility?

16 A There is definitely a possibility for delay.
17 I think cancellation is highly unlikely, because that
18 would be a conscious decision by the company.

19 Q And in the instance of the battery storage
20 projects, since filing your original testimony, I
21 believe you just referenced this in your summary -- or
22 in the correction section, but you have -- the company
23 has already moved the in-service date of the South Tampa
24 Battery Storage project from what it was originally
25 filed. It was expected to go into service April of

1 2025, and now I believe you said it's December of 2025?

2 A That's correct. And we have filed revised
3 revenue requirements associated with that change.

4 Q So that's just the sort of change in service
5 life that I was referring to. It's possible that
6 service lives of -- we will talk about the solar and
7 battery projects -- can change?

8 A I believe you mean in-service dates?

9 Q Yes.

10 A Yes.

11 Q Okay.

12 A I would agree, they can change.

13 Q All right. And Tampa Electric had several
14 solar facilities that were put into service pursuant to
15 the 2021 Settlement Agreement, would you agree?

16 A That is correct.

17 Q And those different solar facilities were
18 installed pursuant to the parameters of what are known
19 as solar-based rate adjustments, or SoBRAs. Are you
20 familiar with that term?

21 A Could you repeat the question again?

22 Q Sure. So that 2021 Settlement Agreement, that
23 agreement laid out parameters for the installation of
24 those different solar facilities?

25 A Yes. I am not extremely familiar with that

1 settlement agreement. It was before my time --

2 **Q Okay.**

3 A -- in the role, but I was aware that the
4 company negotiated, as part of that settlement, step
5 increases in revenue requirements each year associated
6 with new facilities going into service. I just don't
7 know if it was called a SoBRA or not.

8 **Q Have you heard that term before?**

9 A I have heard that term. I know our initial
10 solar projects were built under that term.

11 **Q Okay. All right. Fair enough.**

12 **And I guess those ones that -- those SoBRAs**
13 **you are familiar with in those initial solar projects,**
14 **that was also through a settlement agreement, correct?**

15 A I am not sure.

16 **Q All right. Fair enough.**

17 **You would agree that Tampa Electric cannot**
18 **control certain variables like supply chain, and there**
19 **are other variables like that that are outside of Tampa**
20 **Electric's control when it comes to putting facilities**
21 **into service, correct?**

22 A That is correct. To some extent, there are
23 things that we cannot control. However, we take all
24 steps we can to manage those risks, such as negotiating
25 strong contracts with liquidated damages, and ordering

1 equipment well in advance of the necessary delivery
2 time.

3 Q You would agree that Tampa Electric has more
4 control than Tampa Electric's customers over whether or
5 not these facilities are put into service on time?

6 A I would say that's a fair assumption, yes.

7 CHAIRMAN LA ROSA: You can ignore that light.

8 THE WITNESS: Sorry. It started flashing red
9 at me. I am like, am I doing something wrong?

10 BY MS. WESSLING:

11 Q If the Commission were to approve the rate
12 increase that's been requested as-is, without any
13 changes, and then if any of the solar projects were
14 delayed or even potentially canceled -- although, I know
15 that's unlikely, in your words -- customers would still
16 pay the full amount for these solar projects as if they
17 went into service at the time projected, correct?

18 A I believe that's a correct statement.

19 Q Also, if the solar facilities were to
20 ultimately cost less than what has been projected, Tampa
21 Electric is not under any requirement to flow that back
22 to customers, is that correct?

23 A I believe that is the way it would work. I
24 wouldn't -- I would probably defer that question to
25 Witness Chronister. He is more familiar with the

1 mechanics of the revenue requirement calculation.

2 Q Would you agree that it would be more fair for
3 Tampa Electric to bear the risk of those projects being
4 delayed or canceled rather than Tampa Electric's
5 customers?

6 A I don't know that it would be more fair. I
7 think the fairest scenario would be that the, you know,
8 ask of the customers is based on the in-service date of
9 the projects.

10 Q But if there -- if there were a delay in one
11 of -- one or more of these projects, and customers were
12 paying for them whether they were in service yet or not,
13 wouldn't it be more appropriate for the company to bear
14 the risk since the company has more control over whether
15 or not these projects go into service than the customers
16 do?

17 A I think it would depend on the reason why the
18 projects were not in service as planned.

19 Q And I -- we haven't asked this question yet in
20 the hearing, but it's come up before. But you are not
21 an attorney, correct?

22 A No, ma'am.

23 Q Okay. Now, you may or may not be able to
24 answer this question. It's not intended to be a legal
25 question, or elicit a legal interpretation, but would

1 you agree that the Commission has the authority to
2 modify the rate request so that the company, Tampa
3 Electric, would bear more of the risk for these projects
4 going into service on time?

5 A I am sorry, I do not know the answer to that.

6 Q That's fine.

7 All right. Recently, the company filed an
8 update to the revenue requirement pertaining to the
9 service life of battery assets -- the battery energy --
10 excuse me -- battery storage assets. Are you familiar
11 with that update?

12 A Yes, I am.

13 Q Okay. And you are aware that the company is
14 now using a 20-year life for the battery, and are --
15 excuse me, the energy storage assets rather than the
16 originally -- the original use of 10 years, is that
17 accurate?

18 A That's correct.

19 Q Okay. And when it comes to the solar assets,
20 when this rate increase was -- rate increase request was
21 filed on April 2nd of 2024, Tampa Electric, the day
22 before had filed what's known as a Ten-Year Site Plan?

23 A That sounds -- that sounds correct. Yes.

24 Q Okay. And there was a revised Ten-Year Site
25 Plan filed on April 3rd, so two days after the original.

1 Are you familiar with that?

2 A I am not. I am sorry.

3 Q Okay. Are you familiar with the Ten-Year Site
4 Plan in general?

5 A In general I am, yes.

6 Q Okay. I would like to identify OPC 183,
7 please, which I believe is CEL Exhibit 408.

8 All right. And as the Vice-President for
9 Clean Energy and Emerging Technologies, I imagine that
10 you have spent a lot of time and effort researching the
11 ins and outs of solar generation, would that be fair to
12 say?

13 A I have spent a fair amount of time, yes.

14 Q Okay. And within Tampa Electric's requested
15 rate increase petition, Tampa Electric has used a
16 30-year life for solar assets when calculating
17 depreciation rates, is that -- are you familiar with
18 that?

19 A I believe that's correct, but I am not the
20 expert on that.

21 Q Okay. Mr. Allis would be --

22 A I believe that's correct.

23 Q -- more -- okay. But you are aware of that
24 30-year life that was used for depreciation purposes?

25 A I believe that's correct.

1 Q Okay. Looking at this Ten-Year Site Plan -- I
2 thought I had -- I think it's internal page number -- if
3 you could -- it's 66, but I am not sure what the master
4 Case Center number is.

5 Do you see this page, it's about the English
6 Creek Solar facility?

7 A I did, but it just went black.

8 Q Oh.

9 A It's, like, on the screen saver mode now.
10 Okay, now I can see it.

11 Q Great. Okay.

12 If you could scroll down, there is a section
13 that lists -- or it says, book life, parentheses, years.
14 Do you see that line?

15 A I do.

16 Q Okay. And do you see that it says 35 there?

17 A It does.

18 Q Okay. So as far as you know, and we can go
19 through others if you would like, but for the solar
20 facilities at issue in this case, would you agree that
21 within the 2024 Ten-Year Site Plan, Tampa Electric has
22 listed the service life of each of those eight
23 facilities as 35 years?

24 A Assuming they all say this same numbers, this
25 particular project, I would agree that's what the

1 Ten-Year Site Plan says.

2 Q Okay. And we can just look at the next one
3 just briefly. Bullfrog -- it's on the next page, if you
4 just scroll down. Bullfrog Creek Solar, looking at that
5 same line, book life says 35 years. Do you see that?

6 A I do.

7 Q And of these eight proposed solar facilities,
8 four of them are expected to be located on land that is
9 leased by Tampa Electric Company, is that accurate?

10 A That sounds correct, yes.

11 Q And the leased land would include the Bullfrog
12 Creek facility, the Cottonmouth facility, and I am going
13 to mispronounce this, the Wimauma?

14 A Wimauma.

15 Q Okay. But it's also been renamed Keen Branch,
16 I believe?

17 A That's correct.

18 Q I am going to use that name going forward if
19 that's okay. And the Big Four, those four facilities
20 are all -- are the four leased properties, correct?

21 A That's correct.

22 Q All right. And if we could -- if I could
23 identify OPC Exhibit 75, please, which I believe is CEL
24 Exhibit 300.

25 All right. This is a copy of interrogatory --

1 oh, if you could scroll down to the page that ends in
2 5863. So it's Interrogatory 66, please. There we go.
3 Thank you.

4 Is this an interrogatory that you sponsored?

5 A I believe -- yes, it is.

6 Q Okay. And within this interrogatory, you
7 indicate that the lease for all of the solar facilities
8 that we were just discussing, each of those leases is
9 for 35 years, is that accurate?

10 A That's correct.

11 Q Would you agree that it does not make sense
12 for the service life for these very same solar
13 facilities to be listed as 30 years in one place and 35
14 years in another?

15 A I would suggest maybe that question for
16 Witness Allis as well. I can -- I can agree that the
17 numbers do not match up. I would defer to him to
18 explain why he may think 30 years is more reasonable.

19 Q And to that end, your rebuttal testimony does
20 not address this discrepancy, correct?

21 A No, it does not.

22 Q All right. Just -- and this is just a
23 question. If you don't know the answer, that's fine,
24 just let me know. But are you familiar with the concept
25 of depreciation expense?

1 A I am an engineer, not an accountant.

2 Q Okay. Fair enough.

3 A Nor a lawyer.

4 Q Lucky you.

5 All right. So if we could go back to, this
6 would be OPC Exhibit 83, the Case Center page number is
7 F2.2-7705.

8 Can you see that on your screen there, or is
9 it difficult to look at?

10 A I can't. I got to rotate it.

11 Q If you click on view, you can both rotate it
12 and zoom out or zoom in if you need to.

13 A I got it.

14 Q Okay. All right. Have you -- are you
15 familiar with this page of the Ten-Year Site Plan?

16 A I am.

17 Q And this page lists, among other things, all
18 of the solar facilities that are in existence within
19 Tampa Electric, is that correct?

20 A Sorry. I think I broke it. I was just trying
21 to make it so I could see. There we go. Thank you.

22 All right. Now I can see it.

23 Q Okay. So this particular page shows, among
24 other things, all of the solar assets that are in
25 existence for Tampa Electric Company, would you agree?

1 A I would.

2 Q And this page identifies that Tampa Electric
3 currently has 1,252 megawatts of solar generating
4 capacity, do you see that?

5 A That's correct.

6 Q And not -- there is a column on this page that
7 indicates the capacity of each of these facilities,
8 correct?

9 A Yes, there is.

10 Q And not all of these 25 -- not all of these 25
11 solar generating facilities have the same generating
12 capacity, correct?

13 A There is a range of generating capacity. I
14 would agree with that.

15 Q It ranges from as low as one megawatt, up to
16 74.5 megawatts, correct?

17 A That's correct.

18 Q And none of Tampa Electric's solar sites are
19 capable of generating more than 74.5 megawatts, correct?

20 A No, they are not.

21 Q And none of the proposed solar facilities in
22 this rate case are anticipated or being designed to
23 generate more than 74.5 megawatts each, correct?

24 A That's correct.

25 Q I would like to talk about that 74.5 megawatt

1 number for just a second.

2 Are you familiar with the Power Plant Siting
3 Act, which is also known as the Florida Statute 403.501
4 through 518?

5 A I am generally familiar with it. Yes.

6 Q Generally, okay. And again, I am not asking
7 you for legal opinions.

8 Would you agree that the Power Plant Siting
9 Act requires certification for any steam or solar plant
10 generating 75 megawatts or more?

11 A I would agree with that.

12 Q The Bullfrog Creek, Cottonmouth Ranch and Keen
13 Branch solar facilities are each 74.5 megawatts,
14 correct?

15 A That's correct.

16 Q And they are each intended to be located on
17 approximately 500 acres?

18 A More or less, yeah.

19 Q And they are all to be leased from the same
20 landowner?

21 A That's correct.

22 Q And are these parcels of 500 acres each
23 contiguous?

24 A They are.

25 Q And they are each expected to go into service

1 on December 1st of 2024, 2025 and 2026, correct?

2 A That's correct.

3 Q So ultimately, Tampa Electric expects to have
4 223.5 megawatts on approximately 15 acres of land on
5 December 1st of 2026?

6 A On 1,500 acres of land? That's correct.

7 Q And Tampa Electric has not sought a power
8 plant siting certification for this -- for this
9 combination of three solar facilities, correct?

10 A No, we have not. Based on our experience in
11 coordinating with the Florida Department of
12 Environmental Protection, who, it's my understanding,
13 manages the certification process, sites are
14 independently connected to the grid, and the in-service
15 dates are more than -- are a year apart, therefore, they
16 are considered individual units under their Power Plant
17 Siting Act.

18 Q One of the facilities mentioned in your direct
19 testimony is the Duette Solar facility?

20 A That's correct.

21 Q And that has -- the name for that facility has
22 since been changed to Long Branch, is that right?

23 A That's right.

24 Q And that particular facility is located in
25 Manatee County, correct?

1 A Yes, it is, just south of the Hillsborough
2 County border.

3 Q Okay. And Manatee County is not within Tampa
4 Electric's service territory, would you agree?

5 A I would agree.

6 Q There is a confidential exhibit, OPC Exhibit
7 232, I would like to identify. I apologize. I don't
8 know the CEL number. Okay. Thank you. I believe it's
9 CEL Exhibit 457.

10 Do you see that red binder in front of you?

11 A I do.

12 Q Okay. If you could open it up and set the
13 folders to the side, and then look for OPC Exhibit 232,
14 please.

15 A 232?

16 Q Yes.

17 MS. WESSLING: And just for purposes of the
18 record, I could be wrong, but I don't believe this
19 is one that has been previously entered, so --
20 there has been a lot, but I am pretty sure it
21 hasn't been.

22 BY MS. WESSLING:

23 Q All right. Looking at this first page here --
24 and again, this is a confidential exhibit, so we are
25 going to be very mindful of not verbalizing things that

1 can't be verbalized.

2 So I just wanted to ask, are you at all
3 familiar with this particular slide deck?

4 A It looks familiar, but I am not sure if it's
5 this particular one or similar versions of it.

6 Q Okay. That's fair.

7 If we could turn to what's Bates page 5428,
8 please.

9 A Okay.

10 Q All right. And I really just want to ask you
11 whether or not you agree with a certain statement that's
12 in here.

13 If you look on the left-hand side, there is
14 basically -- there is a title, and then there is three
15 columns of information, and the column on the left has
16 -- one, two three -- five bullet points. Do you see
17 that?

18 A I do.

19 Q Okay. Looking at specifically the fourth
20 bullet point, would you take a moment and read that
21 particular bullet point to yourself, and then let me
22 know once you have finished reading?

23 A Yes. Moving forward --

24 Q No. No. Sorry. Read it to yourself.

25 A Oh, all right. Sorry. I --

1 Q Yeah. Like, just read it -- take a second,
2 read it, and then let me know when you are done reading.

3 A I am done.

4 Q Oh, you are done. I am sorry. Okay.

5 Would you agree with the concept that is
6 presented within that particular bullet point as it
7 relates to solar facilities that are potentially outside
8 of Tampa Electric's service territory?

9 A In general --

10 Q In general.

11 A -- I would. I am not sure I necessarily --
12 no. I generally agree with it.

13 Q Okay.

14 MS. WESSLING: If I could just have one
15 moment?

16 CHAIRMAN LA ROSA: Sure.

17 MS. WESSLING: Nothing further from OPC.

18 Thank you. And thank you, Mr. Stryker.

19 THE WITNESS: Thank you.

20 CHAIRMAN LA ROSA: Great. Thank you.

21 Let's move to Florida Rising/LULAC.

22 MR. LUEBKEMANN: Thank you, Mr. Chairman.

23 EXAMINATION

24 BY MR. LUEBKEMANN:

25 Q Good evening, Mr. Stryker.

1 A Good evening.

2 Q We have also not had the pleasure. Nice to
3 meet you.

4 A Nice to meet you.

5 Q In this case, TECO plans to complete -- or as
6 part of the things being recovered in this case, TECO
7 plans to complete an evaluation of carbon capture and
8 storage, which we will call CCS, at Polk by the end of
9 2025?

10 A That's correct. It may roll over a little.
11 There is some work planned that will be in 2026, but in
12 general, that's a correct statement.

13 Q Okay. Could you elaborate on which parts will
14 be in 2026?

15 A The geological evaluation work will likely
16 carry over by the time all the permitting is completed.

17 Q And when you just -- when you referred to
18 geological work, that's the well boring?

19 A It -- correct.

20 Q Could you just describe what those are for?

21 A Yeah. So the geological work that we plan to
22 perform includes seismic surveying, as well as
23 construction of a stratigraphic test well down to 8,000
24 feet of depth.

25 Q And the purpose of this well would be to

1 **evaluate the capacity for the geology below the Polk**
2 **unit to store carbon?**

3 A To further confirm what we already know about
4 the geology of the area based on our existing
5 underground wastewater injection wells in the area, and
6 to confirm that it's consistent within the vicinity of
7 the power station.

8 Q Okay. Thank you.

9 And TECO decided to evaluate the feasibility
10 of CCS at Polk after the EPA announced a proposed rule
11 that would not cover natural gas power generation?

12 A We were actually already well underway with
13 this work before that rule came out. It started with
14 the -- TECO has been looking at carbon capture
15 technology at Polk for over a decade now in evaluating
16 the geology.

17 When the Inflation Reduction Act was passed
18 with the enhanced 45Q tax credits, we really decided to
19 take another look at it, because we recognize there may
20 be significant benefits to customers via those tax
21 credits, which are quite large in size. Then combined,
22 based on that and the infrastructure bill, we had the
23 opportunity to apply to the Department of Energy to
24 perform a front-end engineering and design study, which
25 we applied for and were successful for the D -- so the

1 federal government is covering 80 percent of the initial
2 engineering design work on the project.

3 **Q And I think with that robust answer, you**
4 **anticipated where I was going next. But as we sit here**
5 **today, that EPA rule is not presently in effect?**

6 A Not for existing natural gas, it is not.

7 **Q Do you know when or if it will go into effect?**

8 A What we've heard from the EPA is that they
9 plan to issue a more comprehensive rule covering
10 existing natural gas that will cover greenhouse gases,
11 along with other priority pollutants, is what they have
12 publicly stated.

13 **Q And do you have any -- recognizing that these**
14 **things can move, do you have any sense of what the**
15 **timeline is forecast to be?**

16 A I believe they mentioned it will be some time
17 next year.

18 **Q Regarding the planned CCS project for Polk 1,**
19 **TECO is responsible for 28.1 million of the total cost**
20 **of this evaluation project?**

21 A That's correct. That is our cost share over
22 the three discrete DOE awards we have received.

23 And I believe you said Polk 1, and I just want
24 to clarify. The awards from the DOE and the work we are
25 doing is centered around Polk 2.

1 Q I did misspeak. I meant -- thank you -- Polk
2 2.

3 And 18.2 million of that -- of TECO's share is
4 included in the 2025 test year?

5 A That's correct. And that's not a revenue
6 requirements number. That's total CapEx spend through
7 the end of 2025, so the revenue requirement is probably
8 less.

9 Q Thank you.

10 TECO provided an energy-based estimate of the
11 bill impacts related to the 98.4 million DOE award that
12 was approved for the CCS evaluation phase?

13 A A rate impact?

14 Q An estimate -- an energy-based estimate of the
15 bill impacts that are related to the award.

16 A I am sorry. I am not sure I understand the
17 question.

18 Q A document might be helpful here. Could we go
19 to master number E6043? And this is from CEL Exhibit
20 199.

21 Okay. Are you there at Interrogatory 73?

22 A I am.

23 Q Did you sponsor the answer to this
24 interrogatory?

25 A I likely did. It's been a while. Yes, this

1 is my response.

2 **Q Okay. And so in the answer here --**

3 **A** So let me just clarify what I said.

4 The first part was definitely my response.

5 The last paragraph was probably supplemented by Witness
6 Williams about, you know, rate impact.

7 **Q Okay. If we could move on to master number**
8 **3.3-4011. It's Comprehensive Exhibit 616, or Florida --**
9 **FLL-156. And this is going to be the attachment to that**
10 **interrogatory.**

11 **A** Okay. I see it there.

12 **Q Great.**

13 **So looking at this first page, under this**
14 **estimate -- under this estimate, the revenue requirement**
15 **for the CCS project is about 9.7 million for 2025?**

16 **A** Well, that would be -- it appears to be
17 calculated on the 98 million, which is the DOE funded
18 portion of the costs. So I guess that would be a
19 revenue requirement that would occur if we proceeded
20 with the same amount of work but did not receive any
21 federal funding.

22 **Q Thank you for the clarification.**

23 **The primary activity and cost of this -- I**
24 **referred to this earlier, but the primary activity and**
25 **cost of this 28 million -- of the \$28 million share that**

1 is TECO's responsibility is in the geological testing
2 those wells?

3 A That's correct.

4 Q Which, again, is to evaluate the capacity for
5 CO2 injection and storage?

6 A That's correct.

7 Q And those wells do not and will never
8 contribute to the overall generating capacity at the
9 Polk station?

10 A They would not commit -- contribute to the
11 generating capacity at the Polk station, but they would
12 be suitable to -- for conversion in the future. If
13 there becomes a environmental mandate to do a carbon
14 capture project, or if it's determined that it is in the
15 economic interest of customers to do so because of the
16 tax credits, there would be a reduction in the cost of
17 the project because we would already have wells that
18 were significantly funded by the federal government
19 already installed.

20 Q I could appreciate that. My question, though,
21 is about, if you look at the nameplate generating
22 capacity at Polk, these wells will not increase the
23 energy output of the units?

24 A No, they will not.

25 Q In fact, would you agree that CCS technology

1 of any stripe actually comes with an energy penalty?

2 A Yes, it does.

3 Q And could you explain what an energy penalty
4 is?

5 A So carbon tech -- capture technology requires
6 an energy input to drive the process. It's typically on
7 the order of 15 percent of a generating unit's capacity.
8 That's referred to as the energy penalty.

9 Q And so that 15 percent is whatever the max
10 generating capacity of the unit might be at any given
11 time, you are going to take 15 percent off the top just
12 to run the CCS?

13 A That's correct.

14 Q Okay. So if implemented, CCS actually lowers
15 the capacity of any unit with which it's associated?

16 A In general, yes. But the way we have designed
17 our project, working through the feed study, would be to
18 combine it with a combustion turbine enhancement such
19 that it would net to basically a zero impact on the
20 generating capacity of the unit. So there would be
21 offsetting increases and decreases as part of the
22 project.

23 Q Fair enough.

24 Fair to say that if you are combining it with
25 another turbine, that would have its own required fuel

1 **inputs?**

2 A These would be performance improvements of the
3 existing turbines, or also known as an uprate.

4 Q And if we scroll to the next page here. This
5 is a -- this is an evaluation of the revenue requirement
6 looking at a cost of service allocation. It should be
7 the page ending in 4012.

8 A Yeah. This one is not updating. Oh, sorry.
9 Okay.

10 Q I think they are trying to run us off.

11 A What's that?

12 Q I think they are trying to run us off.
13 So this shows a CCS allocation scenario?

14 A Yes. It appears to be broken down by rate
15 class.

16 Q Right. And the allocation method that's used
17 here is 4CP?

18 A That's what it appears to say, yes.

19 Q Okay. You would agree that CCS operations
20 would vary with the unit's fuel use? And I can explain
21 what I mean with that.

22 A Yeah. Could you explain that a little more?

23 Q Sure.

24 The idea being, with CCS, you are capturing
25 the carbon that is ultimately associated with the fuel

1 **input of the unit, is that fair to say?**

2 A That's fair.

3 Q **So if the unit is off, it's not running?**

4 A That's correct.

5 Q **And the more you run the unit, the more the
6 CCS technology is used to capture that increasing
7 carbon?**

8 A I mean, there is obviously a significant fixed
9 investment associated with it, but the incremental costs
10 would be proportional to how much you are running the
11 unit.

12 Q **Sure. But I guess the purpose that would
13 drive installing the CCS technology has to do with a
14 fuel input rather than a capacity input, is that fair to
15 say?**

16 A It would be the fuel input that generates the
17 CO2 emissions, it's -- capturing those would generate
18 the tax credits. So that would be -- absent an
19 environmental mandate, that would be the economic driver
20 for a project.

21 Q **Sure.**

22 **And really where I am going with this,
23 recognizing that you are not the cost of service person,
24 for cost causation purposes, fuel related costs are
25 generally categorized as an energy cost rather than a**

1 capacity cost?

2 A Okay.

3 Q Would -- do you agree with that general
4 principle?

5 A That makes sense to me.

6 Q I will accept that.

7 Moving on, if we could go to master number
8 3.3-5988. This is Exhibit 646, or FLL-186.

9 A I am ready.

10 Q Great. Are you familiar with this document?

11 A I am.

12 Q And what is it showing?

13 A It's showing the estimated cost for the two
14 research and development projects that are included in
15 my direct testimony.

16 Q And so TECO is working on two R&D projects, as
17 you note?

18 A That's correct.

19 Q And those are, respectively, a long duration
20 energy storage battery that -- this is the Big Bend or
21 BB flow battery?

22 A That's correct.

23 Q And the other one is a microgrid at the
24 Florida Conservation and Technology Center?

25 A That's correct as well.

1 Q Okay. The Florida Conservation and Technology
2 Center, FCTC, right?

3 A Uh-huh.

4 Q So the FCTC microgrid project costs for the
5 25-year -- '25 test year are about \$2.8 million?

6 A That's correct.

7 Q And the Big Bend Flow Battery project costs
8 for the '25 test year, about 1.6 million?

9 A That's correct.

10 Q So the total cost of these projects, all
11 tolled, across the '22 to '26 and '21 to '25 year spends
12 totals about 10 million?

13 A Just under, it looks like. Yes.

14 Q Yeah. Just under, but roughly?

15 A Yes.

16 Q And do you characterize these projects as
17 emerging technologies in your testimony?

18 A They are relatively new technologies. Yeah.

19 Q And that is to say that you -- or TECO does
20 not fully understand the potential and limitations of
21 these technologies?

22 A That's correct. That was one of the
23 justifications for the projects.

24 Q And that also these technologies cannot
25 currently be implemented on a larger scale?

1 A They are currently, yes, not cost-effective on
2 the large scale.

3 **Q But TECO is requesting about 7.1 million in**
4 **cost recovery for these projects as part of this rate**
5 **case?**

6 A That's not entirely correct, because both of
7 these projects will qualify for significant tax credits
8 under the IRA, including the energy community bonus,
9 because they are located adjacent to Big Bend, which is
10 defined as an energy community because of the previous
11 coal unit retirements in previous years. So there is
12 about a 40-percent investment tax credit on a large
13 portion of these costs.

14 **Q Okay. So the -- what would your estimate be**
15 **on the rate impact, then, after that?**

16 A I can -- I can say what would wind up being in
17 rate base after the tax credits is probably 30 percent
18 less than what you are seeing there.

19 **Q Okay. And your rebuttal testimony also refers**
20 **to a previous demonstration project that TECO -- that**
21 **TECO worked on at Polk? I can, again, elaborate. This**
22 **is -- you worked on this with DOE at Polk Unit 1?**

23 A Okay. Are you referring to the warm gas
24 cleanup?

25 **Q I am.**

1 A Yes.

2 Q Yeah. In fact, if we could go -- we have got
3 a document for this. Could we go to F3.4-6964, which is
4 Exhibit 677, or FLL-217?

5 Is this document a technical report about that
6 demonstration project?

7 A Yes, it is.

8 Q Okay. And in that project, TECO worked with
9 DOE to create a slipstream CCS for the warm syngas flow
10 for Polk 1?

11 A TECO's role in the project was contributing
12 the site, and access to the site, and operations at the
13 facility. The main recipient of the DOE award was a
14 company called RTI, or Research Triangle Institute.

15 Q And then they actually constructed the unit
16 itself?

17 A Correct.

18 Q Okay. And that unit was able to treat about
19 20 percent of the gas flow of that unit?

20 A That's about -- right around 20 percent.

21 Q Okay. That's all for that doc. Could we go
22 to F3.5-20495? This is Exhibit 711, or FLL-251.

23 So this document -- can you see it?

24 A It will probably have a better reading on
25 there, because this is --

1 Q Okay. I am not going to make us go too far
2 through the numbers.

3 A All right. Thank you.

4 Q Generally speaking, this document shows the
5 calculations for the PTCs associated with the solar wave
6 two projects?

7 A I believe that's correct. I am not sure.

8 Q If you've got it on your computer, you should
9 actually be able to pinch zoom. I found the zoom in and
10 out buttons to be a little lagging.

11 A All right. There we go. Yep.

12 That appears to be the case. The reason I was
13 hesitating is I have seen a similar document that
14 compared PTCs versus ITCs, in which --

15 Q Okay. I will represent that this one has PTCs
16 in the title --

17 A Okay.

18 Q -- and it's not a trap.

19 The amount of the credit here is 27-and-a-half
20 dollars per megawatt hour of solar generation?

21 A That's correct.

22 Q And that's -- units are eligible for that for
23 the first 10 years after their in-service date?

24 A Yes. If they entered in service after January
25 2022, I believe.

1 Q And everything on this chart will be entering
2 service after 2022?

3 A That's correct.

4 Q And on the following page, it begins a catalog
5 of federal funding opportunities to support the
6 development of renewables and other sustainability
7 related activities?

8 A That's correct.

9 Q Okay. Are all of the -- it's a substantial
10 list. Are all of the opportunities, the grants and
11 other awards listed here, to your knowledge, are these
12 things for which TECO has applied?

13 A Oh, no.

14 Q Just a catalog?

15 A Yeah. We were responding to an interrogatory
16 question about what actions the company has taken to
17 maximize benefits under the IRA and IIJA, and this --
18 this is an excerpt of a document from a consultant that
19 we have that keeps us updated whenever there is a new
20 opportunity released by the federal government.

21 Q Okay. So not all that -- not all
22 opportunities TECO has applied to, but it's safe to say
23 you have applied to some?

24 A We have applied to five or six in total, I
25 believe.

1 **Q Okay. Would you recall off the top of your**
2 **head which those are?**

3 A So three of them would be associated with the
4 carbon capture work that we already talked about. A
5 fourth was another carbon capture opportunity that we
6 were unsuccessful on. And the fifth was associated with
7 a grid resilience opportunity -- I believe it's called
8 GRIP in DOE parlance, and we were unsuccessful in that
9 application as well.

10 **Q Okay. And the -- just very briefly. The**
11 **other carbon capture opportunity, what plant was that**
12 **associated with?**

13 A It was also with Polk. It was an earlier
14 stage of what's called the Carbon Safe Program, which we
15 were ultimately successful for in a subsequent stage,
16 so...

17 **Q Okay. So --**

18 A The geological work we are doing is the
19 follow-on to what we were unsuccessful in.

20 **Q Got it. So essentially, the work you intended**
21 **to do with the earlier grant is being done with a**
22 **different award?**

23 A Yes.

24 **Q Okay. Thank you.**

25 **If we could go to 3.4-7161, which is 678 on**

1 the comprehensive list, and it's FLL-218. And this is
2 just the first page of the document. We are actually
3 going to scroll down -- it might be easier to give you
4 the number. It's 7174.

5 A You said 7174?

6 Q Correct.

7 CHAIRMAN LA ROSA: While he finds his place,
8 let's kind of just take a quick poll on just
9 questioning-wise. What do -- what does it look
10 like as far as questions and timing that we can
11 kind of start planning the rest of the evening?

12 MR. LUEBKEMANN: I am optimistic we have got
13 less than five minutes.

14 CHAIRMAN LA ROSA: Okay. How do the other
15 parties sound or look?

16 MR. SHRINATH: We could have up to an hour.

17 CHAIRMAN LA ROSA: Okay.

18 MR. WRIGHT: We don't have any questions for
19 Mr. Stryker. Thanks, Mr. Chairman.

20 CAPTAIN GEORGE: FEA doesn't have any
21 questions either, Mr. Chairman.

22 MS. EATON: We don't have any questions.

23 CHAIRMAN LA ROSA: FIPUG does not either?

24 MR. MOYLE: FIPUG has some questions, but not
25 extensive.

1 CHAIRMAN LA ROSA: Okay. All right. Let's
2 continue.

3 MR. LUEBKEMANN: Thank you, Mr. Chairman.

4 BY MR. LUEBKEMANN:

5 Q So you are looking at the same page, Polk 2
6 Carbon Capture Business Case Analysis Comparison?

7 A Yes.

8 Q And are you familiar with this graph?

9 A I am.

10 Q What is it showing?

11 A It's showing the revenue requirement impact
12 for various scenarios of a carbon capture project based
13 on a very preliminary model that we plan to update once
14 we complete our work with the DOE. There is various
15 scenarios under whether there is a 45Q tax credit or
16 not; whether there is additional DOE funding through the
17 infrastructure bill or not; and then different -- and
18 then scenarios, whether there is a future cost of carbon
19 or not.

20 Q And so in this diagram, green numbers
21 represent cost-effective outcomes?

22 A The green numbers reflect a negative revenue
23 requirement relative to the base case, which would be a
24 scenario without the project.

25 Q Thank you.

1 **So in this diagram, TECO will stay on budget**
2 **for the expected CapEx to construct the CCS system?**

3 A As I said, this is a very preliminary
4 analysis. It assumes that the CapEx spend is as
5 modeled.

6 Q Okay. And so staying in the green requires
7 that TECO get the 45Q tax incentive, and either receive
8 the 270 million DOE funding, or the -- or that there is
9 a carbon price implemented? If you want to take a
10 minute to look at that, that's totally fine. I am
11 trying to synthesize for time.

12 A That's generally true, depending on which
13 in-service life you assume. So the three different
14 columns represent different assumptions for the
15 in-service life of the facility. And the 45Q is not --
16 like, whether you get it or not, you get it. That's not
17 an application process. It's like PTCs.

18 But the third column, it's -- the tax credits
19 are only offered for 12 years currently. So that's why
20 with the model, the third column at least, is probably
21 the most representative of a potential project. You
22 wouldn't run it longer than 12 years if the tax credit
23 runs out and there is, at the end of the tax credit, no
24 mandate for you to continue to operate it.

25 Q That's fair.

1 **Okay. So to your knowledge, is there any**
2 **likelihood of that being extended?**

3 A There is lots of discussion about it, and it's
4 been extended in the past and the magnitude of it
5 raised, so I don't have a crystal ball, but there is --
6 there is discussion around it.

7 Q **Sure. It is possible, but it -- there is --**
8 **nothing has been decided?**

9 A Correct.

10 Q **And on the next page -- and just let me know**
11 **when you are ready.**

12 A Yeah. I am there.

13 Q **Okay. This shows the same chart, but now this**
14 **is a sort of high capacity cost for the construction --**
15 **or sorry, high capital cost for the construction?**

16 A So I think this was a sensitivity, where the
17 capital cost was artificially just increased by the 50
18 percent --

19 Q **Okay.**

20 A -- just to show sensitivity.

21 Q **So it is the 50-percent higher CapEx than the**
22 **last slide?**

23 A Yes.

24 Q **And on this chart, to be in the money, medium**
25 **carbon costs would have to be imposed?**

1 A That appears to be the case, yeah.

2 Q Or put differently, the cost-effectiveness
3 under this scenario is really driven by the avoided cost
4 of carbon pricing?

5 A In this scenario, based on this CapEx.

6 Q Are you aware of any carbon price in effect at
7 the federal level?

8 A No, there is not.

9 Q Are you aware of any pending carbon pricing
10 that's proposed at the federal level?

11 A No, I am not.

12 Q And are you aware of any carbon price in
13 effect or proposed for the state of Florida?

14 A No, I am not.

15 Q Just a few more questions.

16 A Sure.

17 Q Your testimony -- we are going to turn to
18 solar now.

19 Now, your testimony introduces and explains
20 the solar plants which TECO is seeking recovery in this
21 proceeding?

22 A Yes, it does.

23 Q As you indicated earlier, it's about 490
24 megawatts, roughly?

25 A That's correct.

1 Q And do you know how much firm capacity this
2 additional solar would add to the grid at the time of
3 the winter peak?

4 A Can you define what you mean by firm capacity?

5 Q Sure. For all of the solar that TECO is
6 adding to these systems, say that it's all built today,
7 at the time of the winter peak, how much of that solar
8 nameplate capacity is TECO counting on being able to
9 serve load to the grid?

10 A At the time of the winter peak, zero.

11 Q And would you know how much firm capacity the
12 solar adds at the time of TECO's summer peak, or would
13 you likely defer that to Mr. Aponte?

14 A Mr. Aponte is better. I know that it -- it's
15 not a fixed number. It varies as the years go on.

16 Q And when you say it varies, is it your general
17 understanding that the firm capacity decreases as more
18 solar comes on the grid?

19 A The contribution of solar at the time of
20 system peak decreases over time.

21 Q And the function that causes it to decrease is
22 the addition of more solar?

23 A That's correct.

24 Q Okay. In general, would you agree that the
25 value to TECO's customers of these solar adds is their

1 **generation -- or it's their contributions to energy**
2 **generation rather than to peak capacity?**

3 A The cost-effectiveness that Witness Aponte can
4 detail further into when he comes up after me, I believe
5 is driven most significantly by the fuel savings.

6 Q Okay. Which, again, is an energy concept, per
7 our earlier conversation?

8 A Yes. The fuel savings are derived from
9 needing less energy from natural gas-fired units.

10 Q Okay. So fair to say that these solar
11 additions to the grid are not providing customers value
12 in their capacity additions, but really their energy
13 contributions?

14 A There is some capacity contribution, but in --
15 my knowledge is the majority of it comes from the fuel
16 savings.

17 Q Okay. And to your knowledge, is there
18 anything in your testimony about the capacity value of
19 the solar that you are supporting?

20 A I don't believe there is.

21 Q Okay. That's all my questions. Thank you
22 very much.

23 A Thank you.

24 CHAIRMAN LA ROSA: Thank you.

25 FIPUG.

1 **Q** And particularly with respect to consumer
2 protections, you would agree that the Commission has
3 broad authority to fashion and impose consumer
4 protections as they see fit?

5 A I honestly don't know, but I will take your
6 word for it.

7 **Q** You are aware that FIPUG has a witness who has
8 filed some testimony with respect to consumer
9 protections that he suggests should be put in place with
10 respect to your solar projects, correct?

11 A I am familiar with the testimony that was
12 filed by Witness Lee or Ly, if that's what you are
13 referring to.

14 **Q** Ly.

15 A Ly. Yes, that's right.

16 **Q** Tell me, if you would, your understanding of
17 the consumer protections that he is recommending this
18 commission adopt?

19 A I believe there was two of them. One of them
20 was a cost cap on the future solar projects of certain
21 dollars per kilowatt. And the other was a performance
22 standard of -- the capacity factor had to achieve the
23 assumed capacity factor.

24 **Q** And do you have an understanding that both of
25 those were derived from information that you put forward

1 and said, here's what we are going to do, a
2 representation and testimony that you all made with
3 respect to the cost cap per megawatt hour?

4 A I do. And I believe in my rebuttal testimony,
5 I referred to that cost cap as, in my opinion,
6 unnecessary because it was equivalent to the full
7 projected cost of the projects, which, if the company
8 were to --

9 Q I will let you -- I will let your lawyer get
10 you -- get you there on stuff. I am just --

11 A Okay.

12 Q -- I am just trying to establish that his
13 recommendation came from your information that you said,
14 here are the projects that we are going to do, and you
15 listed the projects, correct?

16 A I did.

17 Q And then you set forth the megawatt hour costs
18 for each project, correct?

19 A Correct.

20 Q And then he just took those and totaled them
21 up and did the math and said, the average is 16.09 per
22 hour, isn't that right?

23 A Per kilowatt, yes.

24 Q Per kilowatt.

25 And TECO has experience, and has lived with

1 **cost caps before in solar projects, have they not?**

2 A We did under the SoBRA agreement for solar
3 wave one.

4 Q **Did it go okay?**

5 A As far as I know. It was before my time in
6 the role.

7 Q **Don't you think it's appropriate to balance
8 the risk of these projects between the utilities and the
9 consumers?**

10 A I do, and that was why I made the position I
11 did in my rebuttal testimony, that that balance is
12 already there.

13 Q **Well, with respect to a cost cap of 16.09,
14 it's not there unless the Commission says, let's put
15 that cost cap in there, correct?**

16 A Well, the point I made in my rebuttal
17 testimony was that --

18 Q **If you just give me a yes or no on that, I
19 mean, and then you can explain on -- to your lawyer on
20 redirect.**

21 A The 16 -- the 16.09 is not there. No.

22 Q **And for it to be there, the Commission would
23 have to act to put the 16.09 cap in place, which is what
24 your average is of all your projects that you have put
25 forward, correct?**

1 A Correct.

2 **Q Let's talk about the second recommendation,**
3 **capacity factor protection. What's your understanding**
4 **of that?**

5 A That the FIPUG witness proposed a performance
6 standard on the solar projects to achieve at 26 percent
7 capacity factor.

8 **Q And isn't that the capacity factor that you**
9 **are proposing for these units?**

10 A That's the design nameplate capacity factor of
11 the units. I believe Witness Aponte will testify that
12 the actual modeled average capacity factor over the life
13 is closer to 24 percent, taking into account
14 degradation.

15 **Q So would it be acceptable to you for the**
16 **Commission to impose a capacity factor of 24 percent on**
17 **these solar projects?**

18 A No, it would not.

19 **Q And have you had other situations where you've**
20 **had to live with measurements and consumer protections**
21 **for how units perform?**

22 A Yes. I believe in my rebuttal testimony I
23 referenced the GPIF program, which is a long-established
24 Commission program.

25 **Q And do you think that's a fair and good**

1 program to measure utilities on their performance of
2 generating units?

3 A I have limited experience with it, but the
4 concept seems like it's a fair and reasonable approach.

5 Q Right. And that GPIF, generation performance
6 measure, that looks at heat rate and unit -- and the
7 unit availability, is that right?

8 A I believe that's correct.

9 Q Right. And obviously, we don't have heat rate
10 in a solar project, so that doesn't work?

11 A That's correct.

12 Q Right. But the Commission, if it was
13 inclined, could go ahead and put in a provision that
14 says, well, here's what you said you are going to do,
15 let's appropriate the risk, and balance the risk a
16 little bit more by putting some consumer protections in
17 place with respect to the performance?

18 A They could, but as I pointed out in my
19 testimony, the challenge with solar is that the fuel
20 source is highly variable from year to year. So it
21 would have to be very well thought out on how to do
22 that, and I don't know the answer.

23 Q Well, how about if you put a bandwidth? You
24 say, you got to get this number, but we will give you,
25 you know, two percentage points, you know, on it. I

1 mean, the Commission can fashion something if they are
2 inclined to do something like they do with the GPIF, can
3 they not?

4 A They can, but it would have to be a
5 significant bandwidth because, as I testified, the
6 variability can be eight to nine percent year-over-year
7 change in the solar irradiance, so it's a big variable.

8 Q And why is it -- why is that? I mean, the sun
9 is shining pretty regularly in Florida, doesn't it?

10 A It's just the year-over-year weather
11 variability, and I supplied the document from the
12 National Renewable Energy Lab supporting that.

13 Q In your rebuttal testimony, you suggest that
14 FIPUG ought to just file a rule petition to have a
15 policy made, is that right?

16 A I don't think I said that. I think I said, if
17 the Commission believed that this -- performance
18 standards such as this were appropriate, it would be
19 unfair, in my opinion, to apply it to one subset of one
20 utility's solar facilities. That it would be more
21 appropriate to be similar to GPIF, where it applied more
22 universally.

23 Q Yeah. Notwithstanding the fact that the
24 Commission has previously ordered that these similar
25 performance measures be applied to your utility in and

1 of itself, correct?

2 A I am not familiar with what you are referring
3 to, sir.

4 Q Okay. Are you -- do you have any information
5 with respect to the Commission's actions last week, and
6 do you know if they put in, in their approval of a
7 settlement agreement, performance requirements for solar
8 facilities in the Duke case?

9 A I do not.

10 MR. MEANS: I am going to object to relevancy
11 of questions about the Duke settlement, just like
12 we did yesterday.

13 CHAIRMAN LA ROSA: Sustained.

14 MR. MOYLE: Those are all my questions.

15 CHAIRMAN LA ROSA: FEA.

16 CAPTAIN GEORGE: No questions, Mr. Chairman.

17 CHAIRMAN LA ROSA: Thank you.

18 Sierra Club.

19 MR. SHRINATH: I have quite a few questions,
20 Mr. Chairman. Should I get started tonight?

21 CHAIRMAN LA ROSA: Yeah. Let's go ahead and
22 get going.

23 MR. SHRINATH: All right.

24 EXAMINATION

25 BY MR. SHRINATH:

1 Q Good evening, Mr. Stryker. Good to see you.
2 How are you doing today?

3 A Good. How are you?

4 Q You stated in your rebuttal testimony that the
5 company has conducted preliminary evaluations of CCS at
6 Polk Unit 1, is that correct?

7 A Could you refer to me my testimony where it
8 is?

9 Q Yeah. Sorry. It's page seven of your
10 rebuttal testimony.

11 A Could you repeat the question now?

12 Q You state that the company has conducted
13 preliminary evaluations of CCS at Polk 1?

14 A Yes. That's correct.

15 Q The project that TECO is assessing would
16 convert the feedstock for the gasifier, is that right?

17 A That's correct.

18 Q And TECO is exploring converting the feedstock
19 for that system to hydrogen, is that right?

20 A No. We -- the project we evaluated would
21 convert the feedstock to natural gas, which, coupled
22 with carbon capture technology, would produce hydrogen
23 for consumption in the combustion turbine.

24 Q Okay. Thank you for that clarification.

25 And so can you explain again, how would carbon

1 capture and storage factor into the project? It would
2 -- could you just repeat that again?

3 A So on a unit as Polk Unit 1, as was discussed
4 much earlier, is an integrated gasification
5 combined-cycle unit. The gasifier could be repurposed
6 to basically become a -- what is referred to as a blue
7 hydrogen producing unit, which is combining natural
8 gas-based hydrogen production with carbon capture.

9 Q Okay. And so an output of the unit would be
10 hydrogen, is that right?

11 A No. We would burn the hydrogen in the
12 combustion turbine. We didn't evaluate potential
13 scenarios where the hydrogen could be a, you know, a
14 product that was sold as a commodity, or further
15 converted to ammonia for sales into the local fertilizer
16 industry.

17 Q Okay. And am I correct that this project --
18 or this potential project would utilize Polk 1's steam
19 turbine, is that right?

20 A It would use a steam turbine, whether it's the
21 exact one that's currently there at Polk 1, or some
22 modified version of it, yes.

23 Q And under Polk -- under TECO's proposed Polk 1
24 Flexibility project the steam turbine would no longer be
25 necessary after conversion to a simple-cycle combustion

1 turbine, is that correct?

2 A It would be placed in reserve -- long-term
3 reserve layup, is my understanding.

4 Q Okay. And so this potential CCS project would
5 occur after TECO plans to spend, you know, 80 plus
6 million to convert Polk 1 to a simple-cycle combustion
7 turbine, is that correct?

8 A That's correct.

9 Q And so in order to implement this project,
10 TECO would then have to bring the then in standby steam
11 turbine back out of standby for this hydrogen CCS
12 project, is that correct?

13 A Yes, along with a, you know, significant other
14 number of modifications. That would be a small portion
15 of a project like this.

16 Q Okay. And you are in the preliminary
17 feasibility stage of assessing this project, I think you
18 said that on page seven of your rebuttal testimony?

19 A Yeah. We -- you know, took this on to
20 evaluate what are potential future opportunities for
21 that unit, particularly to the standpoint that they can
22 generate tax credits and benefit customers.

23 Q Great. And when might this project occur?
24 How many years out from now?

25 A We haven't even considered what the timeline

1 is, but, you know, if I had to take a guess, we would be
2 talking into the decade at the earliest.

3 Q Okay. Is this future hydrogen play why TECO
4 is keeping Polk 1 on-line?

5 A No, it's not.

6 Q Is it part of why TECO is keeping its gasifier
7 on-line -- or in long-term standby? Sorry.

8 A No, it's not.

9 Q Why isn't TECO assessing the future viability
10 of replacement load, such as demand response or solar
11 and storage, at Polk 1?

12 A That's a better question for Witness Aponte.

13 Q Okay. Converting Polk 1 to a CT, or a
14 simple-cycle combustion turbine, would reduce its
15 efficiency and, therefore, its capacity, is that right?

16 A It would slightly reduce the efficiency of the
17 -- of the unit. But the capacity of the turbine -- the
18 combustion turbine itself goes up. The capacity of the
19 combined-cycle unit, I think, net goes down 20 megawatts
20 because the steam turbine being put in layup.

21 Q Okay. Great.

22 And on top of that, CCS has an energy penalty,
23 correct? It takes energy to run the CCS itself, so it
24 reduces plant output, is that right?

25 A Yes, it does.

1 Q So Polk 1 would have a lower output than its
2 current 2020 megawatt capacity if retrofitted with CCS,
3 is that right?

4 A I don't necessarily believe -- I don't know
5 the answer to that. We haven't gotten that far enough
6 along. That 220-megawatt output number was, I believe,
7 the output when it was operating on syngas.

8 Q Okay. Well, how about once the CCS project
9 was implemented, if implemented, it would reduce Polk
10 1's output, is that right?

11 A We haven't gotten far enough along to know
12 that.

13 Q Given the same volume, hydrogen produces less
14 power than natural gas, is that right?

15 A Same vol -- hydrogen has a lower energy
16 capacity per volume -- by volume metric basis. That's
17 correct.

18 Q And so -- and, you know, I don't 100 percent
19 understand this project, so apologies if I am not
20 understanding this right, but -- so running Polk 1 on
21 hydrogen with CCS would then additionally reduce its
22 capacity, is that correct?

23 A No. You just need a higher volume with the
24 same mass.

25 Q Polk 1's planned retirement date is 2036, is

1 **that correct?**

2 A I believe that's correct.

3 **Q And so this potential CCS project would pay**
4 **dividends to TECO ratepayers for how long, just a few**
5 **years, if --**

6 A If we did all of this work, it would extend
7 the retirement, the life of the unit. I mean, it would
8 be a major modification of the unit.

9 **Q Okay. So TECO is exploring a potential**
10 **extension of the retirement date for Polk 1 through this**
11 **study?**

12 A Yes. That's correct. But just to clarify for
13 the record, the company is not asking for anything in
14 this rate case associated with this project.

15 **Q On page eight of your rebuttal testimony, you**
16 **note that TECO hired a consultant that estimated that**
17 **retrofitting Polk 1 with CCS would cost about \$300**
18 **million, is that correct?**

19 A That's correct.

20 **Q And to confirm, the company has not performed**
21 **a cost-effectiveness analysis comparing implementing CCS**
22 **on Polk Unit 1 with the avoided costs of retiring the**
23 **unit earlier than 2036, is that right?**

24 A That's correct.

25 **Q Okay. Great.**

1 Are you familiar, Mr. Stryker, with the EPA's
2 effluent limitation guidelines, or ELG rule, you are,
3 right?

4 A I am. And I am much more familiar now.

5 Q That's great.

6 The rule finalizes zero discharge requirements
7 for flue gas desulfurization, bottom ash transport water
8 and combustion residual leachate, is that right?

9 A That's correct.

10 Q Can you please refer to FL -- the CEL Exhibit
11 114, Bates number C32-3221, paragraph two, under TECO's
12 answer? And can you please read to yourself the section
13 from the ELG rule regulates to subject to the ELG rule?
14 In the answer -- the second paragraph of the answer.

15 A The answer to 14, the entire thing?

16 Q Yeah, just to yourself.

17 A Okay.

18 Q And just the second paragraph, if you didn't
19 hear that.

20 A Oh, all right.

21 Q So your position is that neither Polk 1 nor
22 Big Bend 4 would be subject to the ELG rule beginning in
23 the 2028, is that right?

24 A Our position is they are not subject to the
25 ELG rule currently.

1 Q And Polk 1 produces one of the wastewaters
2 regulated by the ELG rule, combustion residual leachate
3 when it burns coal, correct?

4 A That's correct.

5 Q And Big Bend 4 produces flue gas
6 desulfurization, or FSD, when it burns coal, correct?

7 A Correct.

8 Q In response to another Sierra Club
9 interrogatory, No. 14, which is on the same document on
10 the next page, which is C32-3222, I believe. At the
11 start of your answer you stated: Tampa Electric will
12 comply with the ELG rule by avoiding surface water
13 discharges from the applicable operations by use of
14 currently operating underground injection control wells
15 at each of the subject facilities. Is that statement
16 correct?

17 A Yes.

18 Q And can you please now refer to Exhibit 799,
19 pages F6-207 and F6-208?

20 CHAIRMAN LA ROSA: That's -- I'm looking at
21 the time. So it's 7:20, and I didn't want to
22 interrupt you in the middle, but let's just kind of
23 call it a night. And game plan, I think, for
24 tomorrow is an eight o'clock start. We will
25 obviously pick up with Mr. Stryker, and we will

1 allow you to continue with your questions.

2 Any questions or housekeeping items we need to
3 clean up?

4 Tomorrow, similar schedule. I just mentioned,
5 obviously, start at 8:00. We will break at noon
6 for lunch. Try to have breaks in between.

7 I am going to say I would love to get out by
8 7:00, but looking at the pace that we are going I
9 am concerned. So I just want to kind of hold that
10 thought until tomorrow, and tomorrow, we just may
11 have to go a little bit later. So until then,
12 let's just, I guess, adjourn for today, and we will
13 meet up tomorrow at eight o'clock.

14 Thanks.

15 (Transcript continues in sequence in Volume
16 5.)

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CERTIFICATE OF REPORTER


STATE OF FLORIDA)
COUNTY OF LEON)

I, DEBRA KRICK, Court Reporter, do hereby certify that the foregoing proceeding was heard at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 28th day of September, 2024.


DEBRA R. KRICK
NOTARY PUBLIC
COMMISSION #HH575054
EXPIRES AUGUST 13, 2028