BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In the Matter of:

Petition for rate increase by Tampa Electric Company.
DOCKET NO. 20240026-EI

Petition for approval of 2023 depreciation and dismantlement study, by Tampa Electric Company.
DOCKET NO. 20230139-EI

In re: Petition to implement 2024 generation base rate adjustment provisions in paragraph 4 of the 2021 stipulation and settlement agreement, by Tampa Electric Company.
DOCKET NO. 20230090-EI

VOLUME 5 - PAGES 924 - 1090

PROCEEDINGS:	HEARING
COMMISSIONERS PARTICIPATING:	CHAIRMAN MIKE LA ROSA COMMISSIONER ART GRAHAM COMMISSIONER GARY F. CLARK COMMISSIONER ANDREW GILES FAY COMMISSIONER GABRIELLA PASSIDOMO
DATE:	Wednesday, August 28, 2024
TIME:	Commenced: 8:00 a.m. Concluded: 9:15 p.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
TRANSCRIBED BY:	DEBRA R. KRICK Court Reporter and Notary Public in and for the State of Florida at Large
APPEARANCES:	(As heretofore noted.)

I N D E X

EXHIBITS

NUMBER:		ID	ADMITTED
19	As identified in the CEL		955
142	As identified in the CEL		955
300	As identified in the CEL		955
408	As identified in the CEL		955
457	As identified in the CEL		955
616	As identified in the CEL		956
646	As identified in the CEL		956
677-678	As identified in the CEL		956
711	As identified in the CEL		956
120-121	As identified in the CEL		956
794-795	As identified in the CEL		956
799	As identified in the CEL		956
711	As identified in the CEL		956
20	As identified in the CEL		1086
144	As identified in the CEL		1086
226	As identified in the CEL		1087
230	As identified in the CEL		1087
545	As identified in the CEL		1087
552	As identified in the CEL		1087
557	As identified in the CEL		1087
582-589	As identified in the CEL		1087
591	As identified in the CEL		1087
605	As identified in the CEL		1087

EXHIBITS CONTINUED

NUMBER:		ID	ADMITTED
605	As identified in the CEL		1087
633	As identified in the CEL		1087
637	As identified in the CEL		1087
707	As identified in the CEL		1087
804	As identified in the CEL		1088

P R O C E E D I N G S

(Transcript follows in sequence from Volume 4.)

CHAIRMAN LA ROSA: All right. We are going to go ahead and get started here this morning.

So just to kind of recap a little bit of maybe what today or where we left off yesterday and what kind of today will look like, so it's eight o'clock now. I'm going to trying to stay consistent with the break every two hours, more or less, depending on whether to break in the questioning. 12 o'clock we will break for lunch. We may go late today, I was kind of alluding to that yesterday, so I want to plan for maybe a nine o'clock finish, if we need that much time this evening. And then we will have a break at some point, maybe as kind of a dinner break of sort that we will maybe chat a little bit about around the lunch hour to kind of figure out when the right time for that would be.

So if we are good with that, let's go ahead and pick up where we left off. Mr. Stryker is here in the witness box, still under oath, of course. The Sierra Club was in question, so I will kick it back over to you to continue. Thank you.

MR. SHRINATH: Great. Thank you, Mr.

Chairman.

Whereupon,

KRIS STRYKER

was recalled as a witness, having been previously duly sworn to speak the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

EXAMINATION continued

BY MR. SHRINATH:

Q Good morning, Mr. Stryker.

A Good morning.

Q If you recall yesterday, we were discussing EPA's Effluent Limitation Guidelines and your and TECO's contention that at Big Bend 4 and Polk 1, TECO will comply with the ELG rule by discharging wastewaters with underground injection wells, is that correct?

A That's correct.

Q Can you please refer to CEL Exhibit 799, page -- pages F6-207 and then F6-208, please?

So just staying on 206 -- or, sorry, 207 -- TECO spent about 33.3 million to build underground injection wells at Big Bend, correct?

A That's correct.

Q And then moving on to the next page, TECO spent another $30 million to build underground injection wells at Polk, correct?

A That is not correct. The total cost of the wells is about $30 million, but 50 percent of one of the wells was funded by SFWMD.

Q Okay. So to map that out, that would be about 15 million, and then half, so about --

A Yes, so about seven-and-a-half million was funded by the water management district.

Q Okay. Sorry, you said 22.5 million, is that what you said?

A 7.5.

Q Okay, 7.5. Okay. So in total, about 22.5 million at Polk, correct?

A Correct.

Q Okay. And so that's about somewhere around 55 million total spent on underground injection wells in total?

A That sounds about right.

Q And were these wells built to comply with the ELG rule, which was proposed last year and adopted earlier this year?

A They were built for multiple purposes. The primary purpose of the Polk wells was part of the reclaiming water initiative to allow the site to reduce its groundwater withdrawal and consume more reclaimed water from the City of Lakeland. And the injection

wells were part of the treatment process. The wells at Big Bend were also built for multiple reasons, one of which was compliance with the ELG rule are. The other reason was just an additional way to manage stormwater on the site.

Q Okay. Can you please now refer to CEL Exhibit 794, starting on F6-106? So this is Big Bend's revised National Pollutant Discharge Elimination System, or NPDES, permit application. Are you familiar with it?

A I am somewhat familiar with it. Yes.

Q And this -- this application -- this revised application was submitted in February 2024, is that right?

A It was originally submitted in 2016, I believe. But the renewal process has been delayed, and my understanding is the agency asked us for an updated application because so much has changed since the time the application was originally submitted.

Q Right. And so the update was submitted in February of this year, is that right?

A I believe that's correct.

Q Okay. Great.

And this application generally governs TECO's water discharges at Big Bend and their compliance with the Clean Water Act, is that right?

A That's correct.

Q And can you please refer to page 10 of this document, which is F6-115?

So this permit generally refers to the ELG rule's zero discharge requirements, is that right?

A That's correct. This document, however, is not a permit. It's a fact sheet that's developed by the Florida Department of Environmental Protection.

Q Okay. And zero discharge means that no untreated wastewater can be discharged into waters of the United States, is that right?

A I believe that's correct. Yeah.

Q And so there is a revision in this fact sheet that's attached to the permit application on this page that states: The facility does generate FGD wastewater, and the resulting FGD lowdown is discharged to UIC wells. Therefore, the limitations of 40 CFR 423.13(g)(1) for FGD wastewater are not applicable in this case. Do you see that?

A I do.

Q Okay. And FGD is flue gas diesel fertilization, which is a product of coal combustion at Big Bend, correct?

A It's a product of coal combustion after the exhaust is treated with limestone to remove sulfur

dioxide emissions.

Q Great.

And UIC stands for underground injection controls of deep water well -- deep wells, correct?

A That's correct.

Q So based on the highlighting in this revision, it looks like after the proposed ELG rule was published in March 29th, 2023, TECO went from stating that its FGD wastewaters are subject to the ELG rule to stating that ITS FGD wastewaters are not subject to the rule because they will now inject wastewaters into these UIC wells, is that correct?

A I don't know that we ever said that the waters were subject to the ELG rule.

Q Well, so --

A This isn't our document. This is the Florida DEP's document.

Q Okay. Well, then -- then the Florida DEP -- it looks like the Florida DEP said that -- added the word not, and so --

A I don't know what the highlight means. This was an addition.

Q Okay.

A I don't know what the -- who highlighted this, or why it was highlighted.

Q Okay. What is -- I mean, presumably the Florida DEP interacts with TECO in order to produce this document, correct?

A I do believe it is a collaborative process; but once again, I do not know who wrote what.

Q Okay. Understood.

But you, nevertheless, agree with this statement?

A I agree with the statement as it is currently written.

Q Okay. And so has EPA confirmed this language, or, you know, confirmed this revision -- permit revision that FGD wastewater requirements are not applicable because FGD blowdown will be discharged to UIC wells?

A I don't know that EPA has agreed with it or not. In Florida, the Florida DEP has primacy over the NPDES permit program, so it doesn't require EPA's approval. EPA would have the ability to review and comment on the draft permit, which I don't believe this has gotten to that.

Q Right. And like you said, this NPDES permit has not been granted yet, right?

A That's correct. However, the EPA has been reviewed and the UIC permit has been issued, which is also, you know, under primacy from EPA Region 4. So the

UIC permit does explicitly state that FGD blowdown water can be injected in the -- into the underground injection wells at Big Bend.

Q Has TECO confirmed the accuracy of this contention with -- in the NPDES with the EPA or any other regulatory agency?

A No, we have not. As I said, the Florida DEP has primacy over this program.

Q Okay. And so it's possible that TECO will not be able to get around FGD zero discharge requirements by injecting wastewater into UIC wells, correct?

A No. As I mentioned before, the permitting agency that has authority over this program is the State of Florida, Department of Environmental Protection. And they have already agreed that this is a -- ELG rules are not applicable to Big Bend because of the underground injection control.

Q Understood. But EPA has not active on this -- this --

MR. MEANS: Objection. Asked and answered.

CHAIRMAN LA ROSA: It has been.

BY MR. SHRINATH:

Q Could you please turn to CEL Exhibit 121, and see page C32-3580 EPA?

EPA estimated the cost of ELG compliance due

to dealing with FGD wastewater at Big Bend as about 129 million in capital costs, and about nine million in annual operating and maintenance costs; is that right? Have you seen this document --

A I will have to take your word for it because there is no way I am reading that.

Q Have you seen this document before?

A If it's the same spreadsheet you shared during my deposition, I saw it then.

Q Okay. Are you aware that EPA has estimated relatively high compliance costs for FGD wastewater treatment --

A I am.

Q -- at Big Bend? Okay.

And, Mr. Stryker, when do ELG zero discharge rules go into effect?

A Earlier this year, I believe.

Q Can you please refer to CEL Exhibit 798, page F6-192?

Have you seen this document -- this EPA document before, Mr. Stryker?

A I saw it just recently when you guys submitted it as a hearing exhibit. I had not seen it before that.

Q Okay. Would you accept that it was published, along with EPA's 2024 update to ELG guidelines, in April

of this year?

A If you say so. I have no way to know its source or authenticity.

Q Okay. Could you turn to page four --

MR. MEANS: Mr. Chairman, I object to admission of this document into cross-examination on the basis that the witness just said that he doesn't know what this is, and there is no foundation for what it is or its accuracy.

CHAIRMAN LA ROSA: Can you give more explanation of what the exhibit is?

MR. SHRINATH: Mr. Chairman, this exhibit is a document, something that's submitted onto the Federal Register. It's a compliance cost document associated with the ELG rule for whom Mr. Stryker -- of which Mr. Stryker is apparently the expert witness.

CHAIRMAN LA ROSA: Can the witness clarify whether they are familiar with this document?

THE WITNESS: Excuse me?

CHAIRMAN LA ROSA: Can you clarify whether you are familiar with this document?

THE WITNESS: I am not familiar with it.

CHAIRMAN LA ROSA: Okay, then sustained.

BY MR. SHRINATH:

Q Could you please turn to Exhibit 795 in the CEL, page F6-120, which is the Big Bend UIC permit? Are you familiar with this document, Mr. Stryker?

A Yes, I am.

Q Okay. This is the permit for the two underwater injection wells that TECO -- or under -- or deep water injection wells that TECO built at Big Bend 4, correct?

A That's correct.

Q And I believe that these were built in 2023, is that correct?

A They went into service in 2023. They were being constructed over a period of probably a year or so before that.

Q Okay. And this permit was granted by the Florida Department of Environmental Protection, correct?

A That's correct.

Q If you could you turn to page three of this permit, so F6-122. It states: The injection wells will also be permitted to receive flue gas desulfurization, or FGD wastewater, from the Tampa Electric Company's Big Bend station after the submittal and department approval of the analysis of the FGD waste stream.

Do you see that? It's the middle of the

bottom paragraph on this page.

A I do.

Q Has TECO received this department approval?

A Yes, we have.

Q And when did -- when did TECO receive this approval?

A It was recently. However, that recent approval was only to allow direct injection of FGD wastewater -- since the initial in-service, we were permitted to discharge the FGD wastewater into the well as part of an intermingled waste stream, which we call a recycled water system.

Q Sorry, I did not understand that. Can you say that again?

A So the approval we recently received from the EPA -- or from the DEP was to -- is for direct injection of the FGD waste stream into the UIC well. Since day one of our operation of the wells last year, we have been able to discharge that same water into the wells because it was mixed with other waste streams.

Q Okay. Could you turn to page six of this document, master page F6-125?

Here, the permit states: Injection of FGD wastewater will -- is also authorized during this permit after submittal of waste stream characteristics and

department approval. The parameter table may be amended based on the constituents detected in the FGD or other waste treatment analysis submitted to the department.

Do you see where it says that?

A I do.

Q Okay. Was the parameter table amended --

A No, it was not.

Q -- departmental approval?

When does TECO anticipate getting EPA approval of its NPDES permit with regards to the ELG compliance costs?

A EPA approval?

Q Yeah.

A Never.

Q Why do you say that?

A Because it's not a requirement to do so in the state of Florida.

Q It's not -- it's not a requirement in the state of Florida to get EPA approval for a NPDES permit?

A No. As I have mentioned multiple times, in Florida, Florida Department of Environmental Protection has primacy over the NPDES program in the state of Florida.

Q Interesting. Okay.

Mr. Stryker, I have a few questions about

TECO's summer and winter reserve margins. Should I ask these questions, or would those be most appropriate for Witness Aponte?

A The reserve margin questions are better for Mr. Aponte.

Q Okay. Great.

Can you please refer to your testimony, page seven, your, I think, direct testimony? And the master page number D2-55 -- so sorry, that might be the rebuttal testimony.

A Okay.

Q You state that: In addition, with the passage of the Inflation Reduction Act, the federal government is providing tax incentives that benefit customers. Should the company delay building the solar projects, the customers would not receive the benefit of the additional tax incentives until later in time.

Do you see that?

A Yes, I do. That's actually on page eight.

Q You go on: These cost increases and the additional tax credits made available under the IRA were included in the solar project cost-effectiveness evaluations, and these projects still provide et savings to our customers.

I understand that TECO incorporated tax

credits into the cost analyses after elect -- or while electing to pursue solar projects, is that right?

A That's correct.

Q And can you please refer to TECO response -- or FL PSC Exhibit 114, which is TECO's response to Sierra Club's 50th interrogatory, master page C32-3261?

So the company has board-approved plans to install an additional 350 megawatts of solar from 2027 to 2028, and an additional 745 megawatts of solar from 2029 to 2033, correct?

A Yeah. I think, just to clarify, beyond 2028, the plans are preliminary, and they are just based on what's in our current Ten-Year Site Plan.

Q Great.

And then could you please turn to, on the same exhibit, page C32-3266?

The company has board-approved plans through the Ten-Year Site Plan to install an additional 70-megawatt storage project in 2028, correct?

A That's correct.

Q Why is TECO not bringing on more than one storage project in this six-year period from 2027 to 2033?

A So our basic expansion plan for storage is based on when we have a need, as demonstrated by a

shortage in the winter reserve margin falling below 20 percent. We will likely, as we move along, evaluate whether it makes -- whether it benefits customers further to have incremental storage above and beyond that. But the only need we have, as far as additional capacity, is not until the winter of 2028.

Q Could TECO added additional projects to ensure enough megawattage is paired with installed solar to meet its reserve margin while retiring other assets, like Big Bend 4 or Polk 1?

A That would be a lot of storage. And I doubt we can get it added in that timeframe.

Q But does TECO need all of Big Bend 4 and Polk 1's capacity to meet its winter reserve margin?

A Yes, we do.

Q 100 percent of the capacity to meet -- of Big Bend 4 and Polk 1 to meet its winter reserve margin?

MR. MEANS: Objection. Asked and answered.

CHAIRMAN LA ROSA: I am going to allow -- I am going to allow the question to continue because I think you are trying to get something specific.

THE WITNESS: Yes. As I mentioned, this 70-megawatt additional capacity is being built -- or proposed because we will have a shortage in the reserve margin in that timeframe. So be default,

that means we need the capacity we already have because we are going to need more than what we currently have.

And any further details of that analysis I would need to defer to Witness Aponte, though.

BY MR. SHRINATH:

Q Sure. And just because you said that, could you -- could you please look at Exhibit 120, C32-3577? And could you please zoom in on the last row?

Mr. Stryker, as you can see here, this document shows -- this is TECO's response to a Sierra Club interrogatorily. It shows that TECO's -- it shows TECO's winter -- winter and summer reserve margins of -- the first column for each year shows the winter reserve margins. The second column shows the summer reserve margin. Going up to 2033, at no point does TECO's planned reserve margin dip below 21 percent. So my question is, how could you possibly need 100 percent of Polk 1 and a Big Bend 4 to meet reserve margin when you -- there is a surplus over the reserve margin?

A There is a surplus because if you look at the bottom two rows, we are adding capacity in time to maintain and keep it from falling below 20 percent. You can see the second to the last row is the 70-megawatt battery we were just talking about. And the row beneath

that is the future combustion turbine. Without those future projects, it would fall below the 20-percent requirement.

Q Okay. So -- but that 21-percent -- that 21-percent reserve margin assumes Polk 1 and Big Bend 4 are on-line, correct?

A That's correct.

Q And so in order to get back up to 20 percent, if you retire Polk 1 and Big Bend 4, you wouldn't need all 100 percent of the capacity at Big Bend 4 and Polk 1, no?

A I can't do the math on the fly, but are pretty close to it.

Q Okay.

MR. SHRINATH: That's all my questions. Thank you.

CHAIRMAN LA ROSA: Great. Thank you.

Florida Retail Federation.

MR. WRIGHT: Thank you, Mr. Chairman. I do have very brief cross for Mr. Stryker.

CHAIRMAN LA ROSA: Sure.

EXAMINATION

BY MR. WRIGHT:

Q Good morning, Mr. Stryker.

A Good morning.

Q How are you doing?

A I am good. How are you?

Q I'm great. Thank you.

My name is Schef Wright. You probably know I represent the Florida Retail Federation, which represents a significant number of your commercial type customers.

A I do.

Q I have very brief cross for you regarding your company's plans and consideration of what you are calling carbon capture and storage. I got used to calling it carbon capture and sequestration, but that's the same thing, correct?

A It is the same thing.

Q Thanks.

My question is -- my basic question is, I think, pretty simple. What guarantee is from the installation, the vendors, or whatever, what guarantees does the company expect you have that the CO2 is going to stay where you put it?

A So the main -- and I wouldn't call it a guarantee, but the main assurance is via the Class VI UIC Program, which is administered by the EPA, which is a very rigorous permitting program to both monitor the design, construction and operation of the wells.

It's still a permit that we are working with the EPA on, so, you know, these plans are pretty far out in the future, but that is the main method of compliance.

There is also a, you know, 20- to 30-year period even after you would cease injection into the ground that the permittee, in this case the company, would have the obligation to monitor the status of those wells and make sure that there is no undo effects.

Q What would happen if a well were to start to leak the CO2 back out into the ambient atmosphere?

A Really nothing of any -- I mean, you would have lost what you were trying to accomplish in the first place. It's not -- it's not hazardous to health, except for in higher concentrations, so it would disperse pretty rapidly.

Q Would the company be subject to an EPA enforcement action during the time period you mentioned?

A I don't think so, because currently, there is, as we spoke of before, there is not a mandate to do any kind of CCS project. We are mainly, right now, looking at CCS because -- well, one, we believe it would be imprudent not to because of the potential economic benefits to customers would be the tax credits, but also the significant federal funding that we have been

awarded.

Q Well, wouldn't you expect that the potential for EPA enforcement would be equivalent to a mandate?

A I would, but I am not -- I just don't know which rule they would be enforcing it under, because there is not a rule saying you have to do this.

Q I understand that, and I think we all understand this as a future scenario.

A Yeah.

Q My question is, what happens if it doesn't work? That -- and I think you have answered --

A I think the biggest exposure, in all -- in all honesty, is the clawback provision of the 45Q tax credit. If you do not keep it sequestered, then the tax credit is -- basically you have to give it back. I think it's less of an environmental issue in my mind.

Q Thanks very much.

MR. WRIGHT: That's all I have.

CHAIRMAN LA ROSA: Great. Thank you.

Walmart.

MS. EATON: Thank you.

EXAMINATION

BY MS. EATON:

Q I have a few follow-up questions.

We do appreciate your commitment to adding

clean energy to your grid and generation fleet, and have a couple of questions related to collaboration with customers in that regard.

Were you here yesterday when Ms. Sparkman was testifying?

A I was not present in the hearing room.

Q Are you familiar with the optional customer programs she was developing and talking about?

A At a very high level.

Q I just wondered if your team collaborated with her team in gathering information from your commercial and industrial customers about their sustainability and renewable energy goals, and how programs could ultimately be developed that -- that help Tampa Electric and all the -- excuse me -- and all the customers?

A Yeah. So there are some members from my team involved. Her team has the lead on the interface with the customers, and my team is more on providing the technological input to the equipment and the design of potential projects.

Q Sure. And so at some point, your team would get involved in order to provide the technical insight into how to develop those programs?

A Correct.

Q And the other thing that I didn't hear you

mention, and perhaps this is another witness. What would be -- what is Tampa's plans to do with the renewable energy credits generated by these new solar and battery storage facilities?

A So we are currently -- I don't believe it's in anybody's testimony, maybe in Witness Heisey, but I do know that we are currently selling the renewable energy credits that we are generating, and 100 percent of the proceeds flow back to customers under the -- either the fuel clause or the ECRC clause. But Witness Heisey can elaborate more.

Q Thank you.

MS. EATON: That's all I have. Thanks.

CHAIRMAN LA ROSA: Great. Thank you.

Staff?

MR. SPARKS: Staff has a couple questions.

EXAMINATION

BY MR. SPARKS:

Q Good morning, Mr. Stryker.

A Good morning.

Q I would like to just briefly ask you a few questions about the 98.4 million funding award from the Department of Energy that you discuss in your direct testimony. Are you familiar with that?

A I am.

Q What was that funding award for?

A It was three different funding awards for the -- so I will just take them in order.

One of them was a front-end engineering and design study, or a FEED study, to evaluate carbon capture and storage or sequestration technology in our Polk Unit 2 combined-cycle. The -- and that was approximately a five-million-dollar award.

The second award was to build upon -- on that study and take the FEED study to a -- the next level, which would include evaluating the storage and transportation component of the project, including developing permit applications. So it's really taking that -- the engineering to the next level. That was -- that award was another $5 million.

The biggest award in the $88 million was part of what's called the Carbon Safe Program. And that's to do the detailed geological characterization of the potential storage facility, including drilling up to two wells and 3D seismic surveying.

Q Could that funding have been used for something other than carbon capture and storage evaluation?

A No, it could not.

Q Is TECO using a third-party contractor for the

evaluation of this project?

A Yes, we are.

Q And who is that contractor?

A There is a couple of them. Sargent & Lundy is our engineering consultant that's doing the engineering. They are the balance of -- what we call the balance of planned engineering. ION Clean Energy is the technology provider of the carbon capture technology. And ARI, or Advanced Resources International is the -- our geological consultant.

Q Thank you very much.

MR. SPARKS: Those are all the questions I have.

CHAIRMAN LA ROSA: Great. Thank you.

Commissioners, any questions?

Commissioner Graham, you are recognized.

COMMISSIONER GRAHAM: Mr. Stryker, how are you today?

THE WITNESS: I am good. How are you, sir?

COMMISSIONER GRAHAM: I have got a very serious question for you. Who is responsible for naming these solar plants? Bullfrog Creek, Cottonmouth, Wimauma, I mean --

THE WITNESS: I wish it wasn't me, but, no, it's kind of a -- it's kind of a collaborative

effort. It's funny, we've -- a lot of those names have changed multiple times, but we tend to try and find a water body or other geological feature nearby to name them. So there actually is a Bullfrog Creek, and there actually is a Cottonmouth Ranch.

COMMISSIONER GRAHAM: Thank you.

CHAIRMAN LA ROSA: Excellent.

Commissioners, any other questions?

Okay seeing none, I will throw it back to TECO for redirect.

MR. MEANS: Thank you, Mr. Chairman.

FURTHER EXAMINATION

BY MR. MEANS:

Q Mr. Stryker, you recall a lot of questions about the CCS project today and yesterday, correct?

A I do.

Q Is Tampa Electric asking for cost recovery for installation of the CCS equipment at Polk Unit 2 in this case?

A No. As I mentioned before, the only request in this case is our cost share of the DOE awards.

Q And do you recall a line of questioning yesterday about whether there is a current emissions limit for greenhouse gases for Polk Unit 2?

A I do.

Q And do you recall testifying that there is not a current one?

A I do.

Q If there is not an emissions limit, why are you proceeding with this CCS project now?

A Well, for a couple of reasons. One is the current availability of federal funding that may not be available in the future when there -- if and when there becomes a mandate.

The other reason is, as I mentioned, as you heard in Witness Collins' testimony, you know, we are constantly looking for ways we can benefit the customer and the affordability concern, and the magnitude of the tax credits associated with the carbon capture project, we are talking $3 billion in tax credits over the life of our projects. So we kind of feel that it would be imprudent for us to not evaluate the potential of such a project.

MR. MEANS: No further questions.

CHAIRMAN LA ROSA: Great. Thank you.

All right. Let's -- all right, let's start with moving some exhibits into the record.

TECO, do you have any exhibits?

MR. MEANS: Yes. Mr. Chairman. We would move

Exhibits 19 and 143 into the record.

THE COURT: 19 and 143, any objections to those?

Seeing no objections, show them entered into the record.

(Whereupon, Exhibit Nos. 19 & 143 were received into evidence.)

CHAIRMAN LA ROSA: Do any other parties have any exhibits? I will start with OPC.

MS. WESSLING: Yes. Thank you, Mr. Chair.

OPC would move into the record hearing Exhibits 408, 300 and 457, please.

TE COURT: Any objections to those exhibits?

Okay. Seeing none, show them entered into the record.

(Whereupon, Exhibit Nos. 300, 408 & 457 were received into evidence.)

CHAIRMAN LA ROSA: LULAC.

MR. LUEBKEMANN: Thank you, Mr. Chair.

LULAC would move hearing Exhibits 616, 646, 677, 678 and 711 into the record.

CHAIRMAN LA ROSA: I will give a few minutes for those to catch up. Any thoughts or concerns?

MR. MEANS: No objection.

Okay. No objections. Show then entered into

the record.

(Whereupon, Exhibit Nos. 616, 646, 677, 678 & 711 were received into evidence.)

CHAIRMAN LA ROSA: Any other?

MR. SHRINATH: Yeah. Sierra Club would like to introduce Exhibits 799, 794, 121, 795 and 120 into the record.

CHAIRMAN LA ROSA: Okay.

MR. MEANS: No objections.

CHAIRMAN LA ROSA: All right. No objections. Okay. Show them entered into the record.

(Whereupon, Exhibit Nos. 120, 121, 794, 795 & 799 were received into evidence.)

CHAIRMAN LA ROSA: Any other intervening parties have any other exhibits to enter? Seeing none, I think we can go ahead and move on.

Mr. Stryker, you are excused. Thank you for your witness testimony today.

(Witness excused.)

CHAIRMAN LA ROSA: All right. I will throw it back over to TECO, you can introduce your next witness.

MR. WAHLEN: Okay. Mr. Chair, I am --

CHAIRMAN LA ROSA: Yes, sir.

MR. WAHLEN: -- before we do that, if you

don't mind, I did a little lawyer math, and it looks like we have got about 14 Tampa Electric witnesses left and 13 intervenor witnesses, and we have talked about it on the Tampa Electric side. I have talked to Mr. Trierweiler and Mr. Rehwinkel.

Tampa Electric indicated at the Prehearing Conference that we would not -- probably would not cross-examine intervenor witnesses. We are prepared to say today definitely that we will not cross-examine any of the intervenor witnesses or the staff witnesses. And we are perfectly happy to have them insert their testimony into the record as though read and be excused without appearing.

I know -- I think Public Counsel historically has liked to have their witnesses make a summary. They can speak of itself, but we are perfectly happy for them all to be just entered into record without any summary or anything.

We also talked a little bit -- there has been discussion about outside witnesses, experts, trying to get them all done tomorrow. We are fine with that.

And I have also understood from Mr. Rehwinkel that maybe they are going to do a little bit of work and see if they can figure out how to do trim

cross-examination too. But we are working on the schedule, and for planning purposes, wanted everybody to know that Tampa Electric is fine with all of the outside experts, out-of-town witnesses appearing tomorrow. We would like ours to do that too, if we can. And we will not be cross-examining the intervenor or staff witnesses.

Thank you.

CHAIRMAN LA ROSA: Thank you. And I appreciate the discussion back and forth to help us move along.

I am going to consult with my staff just really quickly to see if there is anything that we can maybe move to expedite things. So if you maybe just give me just two-and-a-half mints --

MR. WAHLEN: Sure.

CHAIRMAN LA ROSA: -- and I will come right back.

(Brief recess.)

CHAIRMAN LA ROSA: All right. I think we can jump back in. I got what I needed out of that. I thank you for the timeout, and certainly appreciate the parties on working through things, and certainly, of course, will encourage to continue working on things, so thank you guys.

Let's move back to TECO to introduce their next witness.

MR. WAHLEN: Tampa Electric calls Jose Aponte, please.

CHAIRMAN LA ROSA: Mr. Aponte, before you sit down, I do not believe you have been administered the oath yet. Would you mind stay standing and raise your right hand?

Whereupon,

JOSE APONTE

was called as a witness, having been first duly sworn to speak the truth, the whole truth, and nothing but the truth, was examined and testified as follows:

THE WITNESS: I do.

CHAIRMAN LA ROSA: Excellent. Thank you.

Have a seat and just settle in and we will give you a few seconds to get situated.

Mr. Wahlen, it's yours when you are ready.

EXAMINATION

BY MR. WAHLEN:

Q Would you please state your name for the record?

A Jose Aponte.

Q And who is your current employer, and what's your business address?

A Tampa Electric Company. Business address is 702 North Franklin Street, Tampa, Florida.

Q Thank you.

And did you prepare and cause to be filed in this docket, on April 2nd, 2024, prepared direct testimony consisting of 38 pages?

A Yes.

Q And did you also prepare and cause to be filed, on July 2nd, 2024, prepared rebuttal testimony consisting of 15 pages?

A Yes.

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

A I do not.

Q If I were to ask you the questions contained in your prepared direct and rebuttal testimony today, would your answers be the same as those printed in your testimony?

A Yes, they would.

MR. WAHLEN: Mr. Chairman, Tampa Electric requests that the direct and rebuttal testimony of Mr. Aponte be inserted into the record as though read.

CHAIRMAN LA ROSA: Okay.

(Whereupon, prefiled direct testimony of Jose

Aponte was inserted.)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

PREPARED DIRECT TESTIMONY

OF

JOSE APONTE

Q. Please state your name, address, occupation, and employer.

A. My name is Jose Aponte. My business address is 702 N. Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or the "company") as the Manager Resource Planning.

Q. Please describe your duties and responsibilities in that position.

A. My responsibilities include conducting economic evaluations of future resource additions and analyzing the economic and operational impacts to Tampa Electric's system.

Q. Have you previously testified before the Florida Public Service Commission ("Commission")?

A. Yes. I submitted written direct testimony in Docket Nos. 20190136-EI and 20200064-EI regarding the company's Third

and Fourth SoBRA projects, and Docket No. 20210034-EI regarding the company's petition for a rate adjustment. I also presented to the Commission during the Ten-Year Site Plan Workshop.

Q. Please provide a brief outline of your educational background and business experience.

A. I graduated from the University of South Florida with a Bachelor's degree and a Master's degree in Mechanical Engineering. I am a registered Project Management Professional ("PMP").

I began working at Tampa Electric in 1999 as an engineer in the Inventory Management and Supply Chain Logistics department. In 2004, I became supervisor for the Materials and Quality Assurance department at the Big Bend Power Station. Since 2008, I have held several positions in the Resource Planning department at Tampa Electric and currently serve as the Manager of Resource Planning.

I have twenty-four years of electric utility experience working in the areas of planning, systems integration, data analytics, revenue requirements, project economic analysis, and engineering.

Q. What are the purposes of your direct testimony?

A. The purposes of my direct testimony are to (1) discuss the company's plans to add the Polk 1 Flexibility project ("Polk 1 Flexibility") and South Tampa Resilience project ("South Tampa Resilience") to our system; (2) demonstrate that the Polk 1 Flexibility and South Tampa Resilience projects are cost-effective; (3) discuss the company's plans for 12 projects to add energy storage capacity ("Future Energy Storage") and utility-scale solar generating capacity ("Future Solar") to our system; and (4) demonstrate that the Future Energy Storage and Future Solar projects are cost-effective.

This portfolio of resource additions will operate in concert to provide price stability and reliability benefits for customers, and will enhance operational flexibility, energy diversity, and resiliency in a cost-effective manner. The proposed resource plan yields a total Cumulative Present Value Revenue Requirements ("CPVRR") savings to customers of approximately $493.5 million compared to a plan without these projects.

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

A. Yes. Exhibit No. JA-1, entitled "Exhibit of Jose Aponte", was prepared under my direction and supervision. The contents of my exhibit were derived from the business records of the company and are true and correct to the best of my information and belief. It consists of 22 documents, as follows:

Document No. 1	Demand and Energy Forecast
Document No. 2	Fuel Price Forecast
Document No. 3	Future Project Costs per kWac
Document No. 4	Polk 1 Flexibility Project Cost-Effectiveness Test
Document No. 5	South Tampa Resilience Project Cost-Effectiveness Test
Document No. 6	Total Energy Storage Capacity Cost-Effectiveness Test
Document No. 7	Dover Energy Storage Capacity Cost-Effectiveness Test
Document No. 8	Lake Mabel Energy Storage Capacity Cost-Effectiveness Test
Document No. 9	Wimauma Energy Storage Capacity Cost-Effectiveness Test
Document No. 10	South Tampa Energy Storage Capacity Cost-Effectiveness Test

Document No. 11	Total Future Solar Cost-Effectiveness Test
Document No. 12	Future Solar (2024 Projects) Cost-Effectiveness Test
Document No. 13	Future Solar (2025 Projects) Cost-Effectiveness Test
Document No. 14	Future Solar (2026 Projects) Cost-Effectiveness Test
Document No. 15	English Creek Solar Cost-Effectiveness Test
Document No. 16	Bullfrog Creek Solar Cost-Effectiveness Test
Document No. 17	Duette Solar Cost-Effectiveness Test
Document No. 18	Cottonmouth Solar Cost-Effectiveness Test
Document No. 19	Big Four Solar Cost-Effectiveness Test
Document No. 20	Farmland Solar Cost-Effectiveness Test
Document No. 21	Brewster Solar Cost-Effectiveness Test
Document No. 22	Wimauma 3 Solar Cost-Effectiveness Test

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

A. No.

C5-301

Q. How does your testimony relate to the testimony of other Tampa Electric witnesses?

A. Tampa Electric witness Carlos Aldazabal will explain how the company's proposed Polk 1 Flexibility, South Tampa Resilience, Future Solar, and Future Energy Storage projects fit into the company's plans for its generating portfolio. Tampa Electric witness Kris Stryker will explain the details of the 12 Future Energy Storage and Future Solar projects. He will describe the location, size, timing, and projected costs of each of the 12 projects.

My direct testimony shows that Tampa Electric's proposed Polk 1 Flexibility, South Tampa Resilience, Future Energy Storage, and Future Solar projects are cost-effective. My testimony also explains that the company's economic analysis shows that a resource plan using the base fuel forecast with the proposed additions is expected to save customers over $1.18 billion in fuel costs compared to a resource plan without these additions. The per project fuel cost savings are as follows: (1) $178.0 million of savings from the Polk 1 Flexibility and South Tampa Resilience projects; (2) $206.1 million of savings from the Future Energy Storage projects; and (3) the remaining $797.5 million of savings from Future Solar projects.

My direct testimony will also show that from a CPVRR basis, the company's resource plan with the proposed additions is favorable to customers by approximately $493.4 million, with $176.9 million of the total savings anticipated to come from the Polk 1 Flexibility and South Tampa Resilience projects, $151.2 million in savings from the Future Energy Storage projects, and the remaining $165.3 million in savings from Future Solar projects.

The investments and operation and maintenance ("O&M") expenses associated with the Polk 1 Flexibility, the 75.2 megawatts ("MW") South Tampa Resilience project, 115 MW of Future Energy Storage, and 246.5 MW of Future Solar projects are reflected in the MFR Schedules for the company's proposed 2025 test year, which are jointly sponsored by Mr. Aldazabal and Mr. Stryker.

Mr. Stryker presents the company's proposal for recovering the investments and expenses associated with the remaining 242.2 MW of Future Solar in 2026 in his testimony.

Q. Please describe the process Tampa Electric employs for evaluating cost-effectiveness.

A. Tampa Electric evaluates cost-effectiveness based on whether a resource plan with the proposed project would lower the company's projected system CPVRR as compared to such CPVRR without the project. As part of the analysis, we modeled the annual revenue requirement associated with operating the company's generating portfolio with and without the proposed project and used those annual amounts to calculate the CPVRR with and without the proposed project. This technique is widely used by electric utilities during the development of integrated resource plans to evaluate whether to make additions to the generating portfolio.

POLK 1 FLEXIBILITY PROJECT

Q. Please generally describe the company's plans for Polk Unit 1.

A. The Polk 1 Flexibility project consists of converting our existing Polk Unit 1 from a combined cycle unit to a highly efficient simple cycle unit with the latest technology to better utilize that asset. The simple cycle configuration increases the unit's flexibility, allowing fast starts, increased ramp rates, and lower turndowns, which will allow the company to better optimize our lower cost system assets. The simple cycle unit will also have

an improved heat rate, which, along with flexibility, are the main drivers for fuel savings.

Q. Do you have the Polk 1 Flexibility project's projected cost in dollars per kW_{ac}?

A. Yes. The projected costs, excluding Allowance for Funds Used for Construction ("AFUDC"), were provided to me by Mr. Aldazabal, who explains the cost and project schedule in his direct testimony. I added the AFUDC amounts to the project costs to arrive at the total project cost in dollars per kW_{ac} shown in Document No. 3 of my exhibit.

Q. How were the AFUDC amounts included in your project costs per kW_{ac} determined?

A. Capital spending was provided to the company's accounting team, who then calculated the AFUDC for the project. The AFUDC costs were provided to me and included in the cost-effectiveness calculations.

COST-EFFECTIVENESS OF THE POLK 1 FLEXIBILITY PROJECT

Q. Is the Polk 1 Flexibility project cost-effective?

A. Yes. The Polk 1 Flexibility project is cost-effective.

Q. Please describe the analysis Tampa Electric performed to evaluate the cost-effectiveness of the Polk 1 Flexibility project.

A. The company performed the analysis using our Integrated Resource Planning models to prepare a base case scenario with Polk Unit 1 operating as a combined cycle unit. We then prepared a change case scenario with Polk Unit 1 converted to simple cycle and compared the change case to the base case. The base and change cases used production cost modeling software to determine system CPVRR, including fuel costs and variable O&M, and then the costs associated with a change case were subtracted from the base case to determine the savings.

Q. Please explain the assumptions underlying the company's cost-effectiveness calculations.

A. The primary assumptions for the cost-effectiveness calculations are the company's Demand and Energy Forecast, the fuel price forecast, and the projected revenue requirements of the Polk 1 Flexibility project. We prepared our cost-effectiveness analyses with the Demand and Energy Forecast used to prepare Tampa Electric's 2024 cost recovery factors and its 2024 Ten Year Site Plan. A summary

of the values in the Demand and Energy Forecast is shown in Document No. 1 of my exhibit.

The company prepared the fuel forecast using the same methodology the company has used to develop its fuel price forecast each year over the last decade, and it is shown in Document No. 2 of my exhibit.

Q. How did the company calculate the annual revenue requirements used in the analysis?

A. The company used project-specific projected costs to calculate the revenue requirement. Consistent with the guidelines in the 2021 Stipulation and Settlement Agreement ("2021 Agreement"), approved by the Commission on November 10, 2021 in Order No. PSC-2021-0423-S-EI in Docket 20210034-EI, we updated the long-term debt rate to 5.5 percent to reflect the prospective long-term debt issuances during the first 12 months of operations of the project. The revenue requirement calculation included reasonable estimates for O&M expenses, depreciation expense, and taxes.

Q. Did the company consider AFUDC when calculating the revenue requirements described above?

A. Yes. We calculated the revenue requirements with and without AFUDC.

Q. How much fuel expense will the Polk 1 Flexibility project allow the company's customers to avoid over the life of the project?

A. Based on our base fuel forecast, we expect that the Polk 1 Flexibility project will save our customers approximately $40 million in fuel costs.

Q. Please describe the results of the company's cost-effectiveness analysis for the Polk 1 Flexibility project.

A. Tampa Electric's analysis showed that the Polk 1 Flexibility project is cost effective. The CPVRR differential was favorable for customers by $166.9 million before including any value for reduced emissions. Including reduced emissions benefits increased the CPVRR savings from the Polk 1 Flexibility project to $170.3 million. Document No. 4 of my exhibit shows the results of our analysis.

Q. Did the company conduct sensitivity testing on the results of its cost-effectiveness analysis?

A. Yes. Tampa Electric tested the CPVRR savings calculated in its analysis using high and low fuel price forecasts. The high and low fuel forecasts were prepared contemporaneously with the base fuel forecast. The results show that customer savings occur under all fuel price forecast sensitivities.

SOUTH TAMPA RESILIENCE PROJECT

Q. Please generally describe the company's plans for the South Tampa Resilience project.

A. The South Tampa Resilience project is a Distributed Energy Resource ("DER") facility located on MacDill Air Force Base ("MAFB"). It consists of four Reciprocating Internal Combustion Engines ("RICE") units with a total capacity of 75.2 MW. Phase 1 (37.6 MW) has an expected commercial in-service date of April 2025, and Phase 2 (37.6 MW) has an expected commercial in-service date of June 2026.

These highly reliable, cost-effective resources are quick start units that enhance the system's operational flexibility compared to larger frame CT, and more frequently result in fuel savings and greenhouse gas emission reductions. The MAFB provided access to the site in exchange for the added level of resilience to the company's customers in the middle of a dense load center

and the base.

Q. Do you have the South Tampa Resilience projected cost in dollars per kW_{ac}?

A. Yes. The projected costs, excluding AFUDC, were provided to me by Mr. Aldazabal, who explains the cost and project schedule in his direct testimony. I added the AFUDC amounts to the project costs to arrive at the total project cost in dollars per kW_{ac} shown in Document No. 3 of my exhibit.

Q. How were the AFUDC amounts included in your project costs per kW_{ac} determined?

A. Capital spending was provided to the company's accounting team, who then calculated the AFUDC for the project. The AFUDC costs were provided to me and included in the cost-effectiveness calculations.

COST-EFFECTIVENESS OF THE SOUTH TAMPA RESILIENCE PROJECT

Q. Is the South Tampa Resilience project cost-effective?

A. Yes. The South Tampa Resilience project is cost-effective.

Q. Please describe the analysis Tampa Electric performed to

evaluate the cost-effectiveness of the South Tampa Resilience project.

A. Tampa Electric performed the analysis using our Integrated Resource Planning models to prepare a base case scenario without the four reciprocating engines. We then prepared a change case scenario with South Tampa Resilience reciprocating engines and compared the change case to the base case. The base and change cases used production cost modeling software to determine system CPVRR, including fuel and variable O&M costs, and then the costs associated with the change case were subtracted from the base case to determine the savings.

Q. Please explain the assumptions underlying the company's cost-effectiveness calculations.

A. The primary assumptions for the cost-effectiveness calculations are the company's Demand and Energy Forecast, the fuel price forecast, and the projected revenue requirements of the South Tampa Resilience project.

We prepared our cost-effectiveness analysis with the Demand and Energy Forecast used to prepare Tampa Electric's 2024 cost recovery factors and its 2024 Ten Year Site Plan. A

summary of the values in the Demand and Energy Forecast is shown in Document No. 1 of my exhibit.

The company prepared the fuel forecast using the same methodology the company has used to develop its fuel price forecast each year over the last decade, and it is shown in Document No. 2 of my exhibit.

Q. How did the company calculate the annual revenue requirements used in the analysis?

A. The company used project-specific projected costs to calculate the revenue requirement. Consistent with the guidelines in the 2021 Agreement, we updated the long-term debt rate to 5.5 percent to reflect the prospective long-term debt issuances during the first 12 months of operations of the project. The revenue requirement calculation included reasonable estimates for O&M expenses, depreciation expense, and taxes.

Q. Did the company consider AFUDC when calculating the revenue requirements described above?

A. Yes. We calculated the revenue requirements with and without AFUDC.

Q. How much fuel expense will the South Tampa Resilience project allow the company's customers to avoid over the life of the project?

A. Based on our base fuel forecast, we expect the South Tampa Resilience project to save our customers approximately $137.9 million in fuel costs.

Q. Please describe the results of the company's cost-effectiveness analysis.

A. Our analysis showed that the South Tampa Resilience project is cost-effective. The CPVRR differential was favorable for customers by $10.0 million before including any value for reduced emissions. Including reduced emissions benefits increased the CPVRR savings from South Tampa Resilience project to $32.4 million. Document No. 5 of my exhibit shows the results of our analysis.

Q. Did the company conduct sensitivity testing on the results of its cost-effectiveness analysis?

A. Yes. Tampa Electric tested the CPVRR savings calculated in its analysis using high and low fuel price forecasts. The high and low fuel forecasts were prepared contemporaneously

with the base fuel forecast. The results show that customer savings occur under the base and high fuel price forecast sensitivities.

TAMPA ELECTRIC'S PLAN FOR FUTURE ENERGY STORAGE PROJECTS

Q. Please generally describe the company's plans to build Future Energy Storage Capacity.

A. Tampa Electric plans to add a total of 115 MW of utility-scale energy storage capacity projects located across four sites inside its service territory by April 2025: (1) Dover; (2) Lake Mabel; (3) Wimauma; and (4) South Tampa. These projects will help the company maintain the required winter capacity reserve margin as peak load grows with increased customers. Additionally, the projects will provide fuel savings for customers through energy arbitrage, where energy is stored during off-peak hours when electricity prices are cheapest and used during on-peak hours when electricity prices are highest.

The Lake Mabel Future Energy Storage Capacity project has the added benefit of eliminating an otherwise necessary transmission upgrade by locating an energy source close to a high load area.

Q. Do you have a list of the Future Energy Storage projects and their projected costs in dollars per kW_{ac}?

A. Yes. The projected costs, excluding AFUDC, were provided to me by Mr. Stryker, who explains the costs and project schedules in his direct testimony. I added the AFUDC amounts to the project costs to arrive at the total project costs in dollars per kW_{ac} shown in Document No. 3 of my exhibit.

Q. How were the AFUDC amounts included in your project costs per kW_{ac} determined?

A. Capital spending was provided to the company's accounting team, who then calculated the AFUDC per project. These AFUDC costs were provided to me and included in the cost-effectiveness calculations.

COST-EFFECTIVENESS OF THE FUTURE ENERGY STORAGE PROJECTS

Q. Are the planned Future Energy Storage projects cost-effective?

A. Yes. The planned Future Energy Storage projects are cost-effective in total, and on an individual project basis.

Q. Please describe the analyses Tampa Electric performed to evaluate the cost-effectiveness of the Future Energy Storage projects.

A. The company performed the analyses using our Integrated Resource Planning models to prepare a base case scenario without the planned energy storage capacity projects. We then prepared change case scenarios for the 115 MW in total, and for each individual project, and compared the change cases to the base case. The base case and change cases used production cost modeling software to determine system CPVRR, including fuel and variable O&M costs, and then the costs associated with the change cases were subtracted from the base case to determine the savings.

Q. Please explain the assumptions underlying the company's cost-effectiveness calculations.

A. The primary assumptions for the cost-effectiveness calculations are the company's Demand and Energy Forecast, the fuel price forecast, and the projected revenue requirements of the planned energy storage capacity projects.

We prepared our cost-effectiveness analyses with the Demand

and Energy Forecast used to prepare Tampa Electric's 2024 cost recovery factors and its 2024 Ten Year Site Plan. A summary of the values in the Demand and Energy Forecast is shown in Document No. 1 of my exhibit.

The company prepared the fuel forecast using the same methodology the company has used to develop its fuel price forecast each year over the last decade, and it is shown in Document No. 2 of my exhibit.

Q. How did the company calculate the annual revenue requirements used in the analysis?

A. The company used project-specific projected costs to calculate a revenue requirement by project, and in total. Consistent with the guidelines in the 2021 Agreement, we updated the long-term debt rate to 5.5 percent to reflect the prospective long-term debt issuances during the first 12 months of operations of the projects. The investment tax credits associated with the energy storage capacity projects were normalized over the life of the assets in accordance with applicable Internal Revenue Service regulations. Our revenue requirement calculation included reasonable estimates for O&M expenses, depreciation expense, and taxes.

Q. Did the company consider AFUDC when calculating the revenue requirements described above?

A. Yes. We calculated the revenue requirements with and without AFUDC costs.

Q. How much fuel expense will the energy storage capacity projects allow the company's customers to avoid over the life of the project?

A. Based on our base fuel forecast, Tampa Electric expects Future Energy Storage projects to save our customers approximately $206.1 million in fuel costs over the life of the projects.

Q. Please describe the results of the company's cost-effectiveness analysis.

A. The company's analysis showed that the planned energy storage capacity is cost-effective in total and by project. Document Nos. 6 through 10 of my exhibit shows the results of the analyses by individual project.

For the planned Future Energy Storage in total, the CPVRR differential was favorable for customers by $151.2 million

before including any value for reduced emissions. Including reduced emissions benefits increased the CPVRR savings from Future Battery Storage to $169.9 million.

The CPVRR savings for Future Energy Storage by project were $18.7 million (Dover Energy Storage Capacity), $63.0 million (Lake Mabel Energy Storage Capacity), $52.5 million (Wimauma Energy Storage Capacity), and $17.1 million (South Tampa Energy Storage Capacity) before including any value for reduced emissions. Including reduced emissions benefits increased the CPVRR savings from Future Battery Storage to $22.3 million (Dover Energy Storage Capacity), $69.9 million (Lake Mabel Energy Storage Capacity), $58.2 million (Wimauma Energy Storage Capacity), and $19.6 million (South Tampa Energy Storage Capacity).

Q. Did the company conduct sensitivity testing on the results of its cost-effectiveness analysis?

A. Yes. Tampa Electric tested the CPVRR savings calculated in its analysis using high and low fuel price forecasts. The high and low fuel forecasts were prepared contemporaneously with the base fuel forecast. The results show that customer savings occur under all fuel price forecast sensitivities.

TAMPA ELECTRIC'S PLAN FOR FUTURE SOLAR

Q. Please describe the company's existing solar generating facilities.

A. Since 2015, Tampa Electric has deployed utility scale solar generation. As of January 2024, Tampa Electric owns and operates 22 solar generating sites geographically dispersed throughout its service territory with a combined capacity of 1,252 MW. The company's cost-effective solar portfolio includes 1,247 MW of primary single axis tracking photovoltaic ("PV") solar arrays throughout Hillsborough and Polk Counties. It also includes a 1.6 MW fixed tilt solar photovoltaic ("PV") rooftop canopy array located at the top of the south parking garage at Tampa International Airport, a 1.4 MW fixed tilt solar PV ground canopy array located at Legoland Florida, a 1.0 MW floating solar project, and a 1.0 MW agrivoltaics pilot project at Big Bend Power Station.

Tampa Electric installed 600 MW of this capacity pursuant to the company's 2017 Amended and Restated Stipulation and Settlement Agreement ("2017 Agreement") approved by the Commission on November 27, 2017, in Order No. PSC-2017-0456-EI. Another 595 MW of this capacity was installed pursuant to the company's 2021 Agreement.

In 2023, our solar facilities produced about eight percent of the total energy for load.

As noted in the direct testimony of Mr. Stryker, the company's solar expansion is a cost-effective way to serve increased customer load while reducing the impact of fuel price fluctuations on customer bills due to the zero-fuel cost generation. The proposed Future Solar will help moderate fuel price volatility, increase fuel diversity, reduce reliance on natural gas, and have little to no water requirements for operations. In addition, with the passage of the Inflation Reduction Act, the federal government is providing additional tax incentives which will benefit our customers.

When Tampa Electric completes our Future Solar projects, nearly 18 percent of our energy will be from solar. This cost-effective long-term energy solution will promote fuel price stability for customers and increase our fuel diversity.

Q. Please generally describe the company's plans to build Future Solar.

A. Tampa Electric plans to add an additional 488.7 MW of

utility-scale solar PV projects across its service territory by the end of 2026.

The company plans to add the projects to its generating fleet over a three-year period. By the end of 2024, we will place in-service another 97.5 MW. During 2025, Tampa Electric will place 149 MW of Future Solar projects in-service, and the company will add 242.2 MW in-service by the end of 2026.

The Future Solar projects will be general system resources, not dedicated to a subset of solar energy subscribers and, therefore, their benefits will inure to all of our customers.

Q. Do you have a list of the Future Solar projects by year and their projected cost in dollars per kW_{ac}?

A. Yes. The projected cost for each Future Solar project, excluding AFUDC, was provided by Mr. Stryker who explains the costs and project schedules in his direct testimony. I added the AFUDC amounts to the project costs to arrive at the total project costs in dollars per kW_{ac} shown in Document No. 3 of my exhibit.

Q. How were the AFUDC amounts included in your project costs per kW_{ac} determined?

A. Capital spending was provided to the company's accounting team, who then calculated the AFUDC per project. These AFUDC costs were provided to me and included in the cost-effectiveness calculations.

COST-EFFECTIVENESS OF FUTURE SOLAR

Q. Are the planned solar PV projects cost-effective?

A. Yes. Excluding savings from avoided carbon emission costs, the Future Solar projects are cost-effective in total, by year, and individually except for one project.

Q. Please describe the analyses Tampa Electric performed to evaluate the cost-effectiveness of the Future Solar projects.

A. We performed the analyses using our Integrated Resource Planning models to prepare a base case scenario without the Future Solar. We then prepared change case scenarios for the 488.7 MW in total, for each year in total, and for each individual project, and compared the change cases to the base case. The base and change cases used production

cost modeling software to determine system CPVRR, including fuel and variable O&M costs, and then the costs associated with the change case were subtracted from the base case to determine the savings.

Q. Please explain the assumptions underlying the company's cost-effectiveness calculations.

A. The primary assumptions for the cost-effectiveness calculations are the company's Demand and Energy Forecast, the fuel price forecast, and the projected revenue requirements of the Future Solar projects.

We prepared our cost-effectiveness analyses with the Demand and Energy Forecast used to prepare Tampa Electric's 2024 cost recovery factors and its 2024 Ten Year Site Plan. A summary of the values in the Demand and Energy Forecast is shown in Document No. 1 of my exhibit.

The company prepared the fuel forecast using the same methodology the company has used to develop its fuel price forecast each year over the last decade, and it is shown in Document No. 2 of my exhibit.

Q. How did the company calculate the annual revenue

requirements used in the analysis?

A. The company used project-specific projected costs to calculate the revenue requirement by project and in total.

Consistent with the guidelines in the 2021 Agreement, we updated the long-term debt rate to 5.5 percent to reflect the prospective long-term debt issuances during the first 12 months of operations of the projects. The production tax credits associated with the utility-scale solar projects were applied over the first 10-year life of the assets in accordance with applicable Internal Revenue Service regulations. The revenue requirement calculation included reasonable estimates for O&M expenses, depreciation expense, and taxes, including the projected impact of the property tax exemption for solar projects.

Q. Did the company consider AFUDC and avoided carbon emission costs when calculating the revenue requirements described above?

A. Yes. Tampa Electric calculated the revenue requirements with and without AFUDC and with and without avoided carbon emission costs.

Q. By how much will the Future Solar projects lower the company's carbon emissions?

A. The 488.7 MW of Future Solar will decrease carbon dioxide ("CO_2") emissions by over 450 thousand tons per year and decrease nitrogen oxide ("NO_X") and sulfur dioxide ("SO_2") emissions by hundreds of tons.

Q. How did the company estimate the avoided cost of carbon emissions for the Future Solar projects?

A. Tampa Electric worked with a third-party contractor to estimate the avoided cost of carbon emissions for the Future Solar projects. Since 2015, upon the issuance of the draft Clean Power Plan, the company has monitored forecasted carbon prices. The company used a CO_2 forecast based on current assumptions and market conditions from global consulting services company ICF International, Inc. ("ICF"). ICF provides projections for various regions of the country as well as low, medium, and high cost-of-carbon forecasts.

Q. Is it reasonable to include the value of avoided carbon emission costs in the company's cost-effectiveness tests?

A. Yes. Although our federal government and the State of Florida do not currently impose a tax or fee on carbon emissions, public policy considerations and customer expectations in the United States and around the world are trending against carbon emissions and in favor of renewable energy like solar generation. It is difficult to predict when a carbon tax or fee will be imposed on the company, but it is even more difficult to completely rule out that possibility. Accordingly, it is reasonable to consider the value of avoided carbon costs when evaluating the cost-effectiveness of generating alternatives, including our Future Solar projects.

Q. How much fuel expense will Future Solar allow the company's customers to avoid over the life of the projects?

A. Based on our base fuel forecast, we expect Future Solar to save our customers approximately $797.5 million in fuel costs over the life of the projects.

Q. Please describe the results of the company's cost-effectiveness analysis.

A. Document Nos. 11 through 22 of my exhibit shows the results of the analyses.

For Future Solar in total, the CPVRR differential in our analysis was favorable for customers by $165.3 million before including any value for reduced emissions. Including reduced emissions benefits increased the CPVRR savings from Future Solar to $322.3 million.

The CPVRR savings for Future Solar by year in our analysis were $34.0 million for the 2024 projects, $52.6 million for the 2025 projects, and $78.7 million for the 2026 projects before including any value for reduced emissions. Including reduced emissions benefits increased the CPVRR savings from Future Solar to $66.0 million for the 2024 projects, $100.5 million for the 2025 projects, and $155.8 million for the 2026 projects.

Q. Did the company conduct sensitivity testing on the results of its cost-effectiveness analysis?

A. Yes. Tampa Electric tested the CPVRR savings calculated in its analysis using high and low fuel price forecasts. The high and low fuel forecasts were prepared contemporaneously with the base fuel forecast. Results of the high fuel price sensitivity show that all individual projects are cost-effective, and under the low fuel price sensitivity all but two projects show benefits to customers.

OTHER BENEFITS TO THE RESILIENCE AND CAPACITY PROJECTS

Q. Are there any other benefits besides cost savings that the Polk 1 Flexibility and South Tampa Resilience projects will provide to Tampa Electric's customers and the communities where they live?

A. Yes. As explained in the testimony of Mr. Aldazabal, the Polk 1 Flexibility and South Tampa Resilience projects will improve the company's utilization of its generating assets due to the increased flexibility, reduced maintenance intervals, fast start capability, improved heat rates, faster ramp rates, and lower turndowns provided by these projects.

These projects also strengthen Tampa Electric's near-term reserve margins and further insulate our customers from disruptions during an extreme weather event.

Q. Are there any other benefits besides cost savings that the Future Energy Storage and Future Solar projects will provide to Tampa Electric's customers and the communities where they live?

A. Yes. As noted in the testimony of Mr. Stryker, our Future Solar and Future Energy Storage projects will require fewer

financial resources to operate than fossil fuel-burning plants and will substitute, in part, for operation of solid fuel generating assets that cost more to operate and maintain, which will allow the company to incur less O&M expense.

Additionally, because solar resources do not burn fuel or have moving parts that operate under high temperatures and pressures, solar generators are safer to operate than fossil fuel-burning generators. Solar generation is not only emission-free, but also requires little to no water for operation, which is better for protecting Florida water resources.

Further, with the passage of the Inflation Reduction Act, the federal government is providing additional tax incentives which will also benefit our customers.

Construction of these projects will create new jobs in this area, which will help our local economy. The solar projects also generate new property tax revenues for the local governments where they are located.

PRUDENCE OF THE COMPANY'S PROPOSED RESOURCE PLAN

Q. Is the company's proposed resource plan prudent?

C5-330

A. Yes. As noted in the testimony of Mr. Aldazabal and Mr. Stryker, the company has planned and will be constructing the 14 projects in the proposed resource plan at the lowest reasonable cost. My direct testimony shows these projects are cost-effective in total and by year.

The Polk 1 Flexibility, South Tampa Resilience, and Future Energy Storage projects will improve the company's utilization of the system generating assets due to the increased dispatch flexibility provided by these projects. The 14 projects included in our proposed resource plan will result in lower fuel costs for customers.

The Future Energy Storage projects also will enable energy arbitrage that will provide fuel cost savings for customers by storing lower cost off-peak energy and delivering it during peak times. Additionally, these assets will provide increased resilience and improve system reliability by helping the company maintain the required winter capacity reserve margin as peak load grows.

The proposed Future Solar projects reduce electricity costs, reduce price volatility for customers, improve fuel diversity, reduce reliance on natural gas, have little to no water requirements for operations, and provide

alternative sources of energy that enhance system reliability and resilience.

The company's Future Solar projects will require fewer financial resources to operate than fossil fuel-burning plants, and will substitute, in part, for operation of fossil fuel generating assets that cost more to operate and maintain, which will allow the company to incur less O&M expense.

SUMMARY

Q. Please summarize your direct testimony.

A. My direct testimony describes the company's plans to upgrade Polk Unit 1 to a highly efficient simple cycle unit (Polk 1 Flexibility project), add 75.2 MW of distributed energy resources for improved system resilience (South Tampa Resilience project), add 115 MW of Energy Storage Capacity, and add an additional 488.7 MW of utility-scale Future Solar generating capacity to our system. My direct testimony also demonstrates that the Polk 1 Flexibility, South Tampa Resilience, Future Solar, and Future Energy Storage capacity projects are cost-effective, will benefit customers, and are prudent.

The company's proposed resource plan is expected to save customers just over $1.18 billion in fuel costs alone over the life of these assets compared to a resource plan without these additions, with $178.0 million of the total savings anticipated to come from the Polk 1 Flexibility and South Tampa Resilience projects, $206.1 million in savings from the Future Energy Storage projects, and the remaining $797.5 million from the Future Solar projects.

On a CPVRR basis and excluding any benefits from reduced emissions, the proposed resource plan is estimated to be favorable to customers by $493.4 million over the life of these assets compared to a resource plan without the proposed additions, with $176.9 million of the total CPVRR savings anticipated to come from the Polk 1 Flexibility and South Tampa Resilience projects, $151.2 million savings from the Future Energy Storage projects, and the remaining $165.3 million of savings from the Future Solar projects.

The collection of projects in the proposed resource plan lowers overall costs to customers while simultaneously increasing system reliability and flexibility, reducing price and supply risk from natural gas, and lowering greenhouse gas emissions.

Q. Does this conclude your direct testimony?

A. Yes, it does.

C5-334

(Whereupon, prefiled rebuttal testimony of Jose Aponte was inserted.)

TECO
TAMPA ELECTRIC
AN EMERA COMPANY

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20240026-EI

PETITION FOR RATE INCREASE

BY TAMPA ELECTRIC COMPANY

REBUTTAL TESTIMONY AND EXHIBIT

OF

JOSE APONTE

TAMPA ELECTRIC COMPANY
DOCKET NO. 20240026-EI
FILED: 07/02/2024

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY

OF

JOSE APONTE

Q. Please state your name, address, occupation, and employer.

A. My name is Jose Aponte. My business address is 702 North Franklin Street, Tampa, Florida 33602. I am employed by Tampa Electric Company ("Tampa Electric" or the "company") as the Manager Resource Planning.

Q. Are you the same Jose Aponte who filed direct testimony in this proceeding?

A. Yes. I am.

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

A. No.

Q. What are the purposes of your rebuttal testimony?

A. My rebuttal testimony serves four general purposes.

First, I will address certain points asserted by the Florida Industrial Power Users Group ("FIPUG") witness Jonathan Ly associated with the cost-effectiveness analysis related to the Future Solar Projects.

Second, I will respond to inaccurate conclusions drawn by Florida Rising and League of United Latin American Citizens ("LULAC") witness Karl Rábago regarding the cost-effectiveness of the South Tampa Resilience Project.

Third, I will address the arguments made by Sierra Club witness Devi Glick regarding the conversion of Polk Unit 1 to simple cycle operation being an uneconomic endeavor.

Finally, I will address arguments raised by FIPUG's witness Jeffry Pollock regarding the operational impacts of the company's Future Solar Projects and proposed changes to the company's time of use periods.

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

A. Yes. Rebuttal Exhibit No. JA-2, entitled "Rebuttal

Exhibit of Jose Aponte," was prepared by me or under my direction and supervision. The contents of this rebuttal exhibit were derived from the business records of the company and are true and correct to the best of my information and belief. My rebuttal exhibit consists of the following three documents:

Document No. 1	Low Fuel Forecast Solar Cost-Effectiveness Test
Document No. 2	High Fuel Forecast Solar Cost-Effectiveness Test
Document No. 3	Solar Cost-Effectiveness Test Capacity Factor Sensitivity

I. THE FUTURE SOLAR PROJECTS

Q. Do you agree with Mr. Ly's characterization that the Future Solar Projects are not supported by a robust cost-effective analysis?

A. No. The company's analyses presented in my direct testimony are robust. The analyses follows a technique that is widely used by electric utilities during the development of integrated resource plans to evaluate the prudence of adding a generating resource to the portfolio.

Q. Do you agree with Mr. Ly's assertion that the company has not provided sensitivity analyses supporting the benefits of these projects under a range of capital and fuel cost assumptions?

A. No. As I explained on page 32 of my direct testimony, Tampa Electric tested the Cumulative Present Value Revenue Requirement ("CPVRR") savings calculated in its analyses using high and low fuel price forecast sensitivities. The company also performed sensitivity analyses for variations in capital cost and unit performance. No party to this proceeding asked for these fuel price sensitivity analyses through discovery. However, I am providing these sensitivities in Document Nos. 1 and 2 of Rebuttal Exhibit JA-2.

Q. Please describe the sensitivity analysis for fuel cost assumptions.

A. Tampa Electric tested the CPVRR savings calculated in its analysis using high and low fuel price forecasts sensitivities. The high and low fuel forecasts were prepared contemporaneously with the base fuel forecast. Results of the low fuel forecast sensitivity shows an overall CPVRR savings to customers of approximately $51

million for the proposed solar projects, while the high fuel forecast sensitivity shows an overall CPVRR savings to customers of approximately $428 million. The results of these fuel price sensitivities are included as Document Nos. 1 and 2 in my Rebuttal Exhibit JA-2. The CPVRR benefit to customers is even greater if the potential value of CO_2 reductions is included. The Future Solar projects are cost-effective with or without consideration of future carbon pricing.

Q. Did the company perform a sensitivity analysis for capital cost assumptions?

A. Yes, during the initial stages of the project planning.

The Future Solar Projects remain cost effective even if the capital cost assumptions are higher. The portfolio of future solar projects would still be favorable to customers even if the $1,609 average dollar per kilowatt cost of the projects increased by 10 percent under the base fuel price scenario. This demonstrates the Future Solar Projects' resilience against cost fluctuations.

Tampa Electric has a high level of confidence in its capital cost estimates. The company has extensive

experience working with Engineering, Procurement, and Construction ("EPC") firms and equipment suppliers for utility scale solar projects and, by factoring in EPC costs based on prior and existing contracts, the reliability of the cost projections is greatly enhanced.

Additionally, the company has contracts and agreements in place for major equipment purchases like modules, inverters, GSUs, rackers, and tracking systems, which provides assurances that the cost assumptions used for the proposed future solar projects are sound and reasonable.

Q. Did the company perform sensitivity analyses for unit performance?

A. Yes. Tampa Electric projects that the Future Solar units will have on average, an annual net capacity factor of 26 percent. The company performed a sensitivity in the cost-effectiveness analyses where new solar projects started with a lower capacity factor during the first full year of operation, then increased by 1 percent per subsequent year until achieving the design specification capacity factor by year five.

To illustrate the impact of excluding this conservative assumption in the cost-effectiveness analyses, the company performed a cost effectiveness test without it. The results of this sensitivity reflected an increase of $36.3 million in savings to customers under the base fuel price scenario, for a total projected benefit of $201.6 million. The result of the sensitivity analysis is included in Document No. 3 of my Rebuttal Exhibit JA-2.

The company also performed a sensitivity analysis incorporating a 0.4 percent degradation per year until the end of the project's useful life.

Both conservative assumptions have already been incorporated into the cost-effectiveness analyses presented in my direct testimony.

Q. What role did these sensitivity analyses play in the company's decision to proceed with the Future Solar projects?

A. The company takes a conservative approach to evaluating the cost-effectiveness of new generation projects. Tampa Electric made the decision to move forward with the Future Solar projects based on cost-effectiveness analyses that

incorporated the conservative and robust input assumptions of all three sensitivities cited above. The results of the cost-effectiveness analyses for the proposed Future Solar are in my direct testimony Exhibit No. JA-1, Document No. 11 through Document No. 22.

Q. Are the net present value benefits of the Future Solar Projects based on a speculative carbon adder, as represented by Mr. Ly?

A. No. The company's proposed portfolio of Future Solar Projects are cost effective even without including any benefits from reduced carbon emissions. This is illustrated in Document No. 11 in Exhibit No. JA-1, which was included with my direct testimony.

As I explained on page 31 of my direct testimony, it is impossible to rule out the possibility that a carbon tax or fee will be imposed. As a result, it is reasonable for the company to provide an analysis to illustrate the potential value of avoided carbon costs when evaluating the cost-effectiveness of generating alternatives, including our Future Solar Projects. The inclusion of a carbon adder in the cost-effectiveness analyses for the Future Solar Projects was for informational purposes but

provides a realistic estimate of the Future Solar Projects' value in the event future carbon emission costs are imposed.

II. COST-EFFECTIVENESS OF THE SOUTH TAMPA RESILIENCE PROJECT

Q. Florida Rising and LULAC witness Mr. Rábago recommends the Commission disallow recovery for the South Tampa Resilience Project in part because it lacks the support of a benefit cost analysis. Do you agree with this recommendation?

A. No. Tampa Electric completed a cost-effectiveness analysis for the South Tampa Resilience Project, which I provided as Document No. 5 in Exhibit JA-1 along with my direct testimony.

As shown in Document No. 5, the South Tampa Resilience Project has a projected benefit to customers of approximately $10 million CPVRR excluding any benefit from the value of reduced emissions and $137.9 million in fuel savings. If the potential value for reduced CO_2 emissions is included, the CPVRR benefit to customers is estimated to be even higher.

In addition to these economic benefits, the South Tampa

Resilience Project also provides operational benefits including strengthening near-term reserve margins, improving reliability, enhancing dispatch flexibility, and further insulating customers from disruptions during extreme weather events. The quick start, rapid ramping, and distributed nature of the South Tampa Resilience Project is a valuable complement to the large, centralized combined-cycle generation units that comprise the bulk of Tampa Electric's generation portfolio. So, while the South Tampa Resilience Project is cost-effective as shown in my direct testimony, the real value comes from its operational flexibility contribution to the Tampa Electric system.

III. CONVERSION OF POLK UNIT 1 TO SIMPLE CYCLE OPERATION (POLK 1 FLEXIBILITY PROJECT)

Q. Sierra Club witness Ms. Glick asserts that the conversion of Polk Unit 1 to simple-cycle operation is not economic. Do you agree?

A. No. As reflected in the Polk 1 Flexibility Cost-Effectiveness Test provided in my direct testimony Exhibit JA-1, Document No. 4, the conversion of Polk Unit 1 to a simple-cycle combustion turbine ("CT") reflects a customer benefit of approximately $166.9 million CPVRR,

excluding any benefit from the value of reduced emissions. If the potential value for reduced CO_2 emissions is included, the CPVRR benefit to customers is estimated to be even higher.

This project is not only economic for our customers but also increases the flexibility within our system. Operating Polk Unit 1 as a simple cycle CT will allow for faster starts, quicker ramp rates, shorter up/down times, and lower turndowns enabling Tampa Electric to better optimize the utilization of the rest of the portfolio's assets.

Q. Do you agree with Ms. Glick's conclusion that the Polk 1 Flexibility Project is expected to have a negative net present value revenue requirement?

A. No. As a preliminary matter, Ms. Glick did not provide her calculation, and we have not been able to recreate it solely from the discovery responses she cites in her testimony.

I do agree that the project has a negative CPVRR differential; however, the negative CPVRR indicates the project provides savings to customers. The negative CPVRR

indicates that the total CPVRR of the plan with the proposed project is less than the total CPVRR of a plan without the project. Said differently, the negative CPVRR differential represents the reduction in projected cost, which is a savings to customers.

These calculations are shown in the cost-effectiveness tests included in my Exhibit JA-1, Document No. 4, which is presented as differentials. They are derived by taking the total CPVRR of a resource plan that includes the Polk 1 Flexibility Project and then subtracting the total CPVRR of a resource plan without the Polk 1 Flexibility Project (the reference case).

IV. OPERATIONAL IMPACTS OF FUTURE SOLAR PROJECTS

Q. On pages 35 to 36 of his direct testimony, Mr. Pollock asserts that the company's changes to its time of use rates to reflect lower rates during daylight hours will create an incentive to use more energy during high load conditions and thereby create challenges for the company's grid operators. Do you agree with this assessment?

A. No. Tampa Electric's changes to lower time of use rates during daylight hours merely reflect the lower marginal

cost during daylight hours due to the significant quantities of zero cost solar generation during daylight hours. This zero cost solar displaces low-cost combined cycle generation that is now available to serve incremental load during that timeframe.

With respect to operational challenges of solar, there can be challenges when the output of solar ramps up more quickly or ramps down more quickly than expected, or when the demand is being mostly met by solar resources during daylight hours. This can lead to possible curtailment of excess solar and having thermal generating resources either offline and/or operating at their minimum, less efficient levels. But that is independent of the overall change to cost periods for time of use.

Incentivizing higher energy usage during high load conditions help minimize the dispatch challenges encountered by the company's grid operators during the transition into non-daylight hours by keeping low-cost thermal units online, avoiding shutdown and startup costs, and enabling a better utilization of these low-cost thermal assets at higher efficiency operating levels.

D3-311

V. SUMMARY

Q. Please summarize your rebuttal testimony.

A. My rebuttal testimony addressed the statements made by witnesses Ly, Rábago and Glick.

First, I demonstrated that the company's cost-effectiveness tests for the proposed solar projects are supported by robust analysis, with a projected CPVRR savings to customers of approximately $165.3 million, excluding any value from reduced carbon emissions.

Second, I explained that a cost effectiveness analysis for the South Tampa Resilience Project was included in my direct testimony, and the cost effectiveness analysis indicated this project will save customers approximately $10.0 million in CPVRR.

Third, I provided clarification to demonstrate that the negative CPVRR differentials in the company's cost effectiveness tests on my Exhibit No. JA-1, including that of the Polk 1 Flexibility Project of approximately $166.9 million, represent the projected savings to customers.

Finally, I refuted FIPUG witness Pollock's erroneous

connection between system operational impacts from solar and time of use rates by explaining how solar generation drives lower energy costs during daylight hours and it is logical to revise time of use rates accordingly.

Q. Does this conclude your rebuttal testimony?

A. Yes.

BY MR. WAHLEN:

Q Mr. Aponte, did you also prepare and cause to be filed with your direct testimony an exhibit marked JA-1, consisting of 22 documents?

A Yes.

Q Did you prepare and cause to be filed with your rebuttal testimony an exhibit marked JA-2, consisting of three documents?

A Yes.

MR. WAHLEN: Mr. Chairman, for the record, we will note that Exhibits JA-1 and 2 have been identified in the Comprehensive Exhibit List as Exhibits 20 and 144.

CHAIRMAN LA ROSA: Okay.

BY MR. WAHLEN:

Q Mr. Aponte, would you please summarize your prepared direct and rebuttal testimony?

A Yes.

Good morning, Commissioners. My name is Jose Aponte, Manager of Resource Planning.

Commissioners, as you are aware, the company is proposing several resource additions to its generating portfolio in order to satisfy our reserve margin needs and affordability for customers.

My direct testimony demonstrates that the

projects in the proposed portfolio, consisting of the South Tampa Resilience, Polk 1 Flexibility, Future Energy Storage and Future Solar Projects are cost-effective. They are prudent, promote efficiency and fuel diversity, and enhance the reliability and resilience of the company's system. Together, these projects are expected to save customers about $1.2 billion in fuel costs, and over $490 million in cumulative present value revenue requirements.

My rebuttal testimony serves several purposes. It refutes created system raised by FIPUG and LULAC about the cost-effectiveness of future solar and the South Tampa Resilience Project. It addresses comments from Sierra Club about the economics of converting Polk Unit 1 to a simple-cycle unit. And lastly, responds to FIPUG's observations about the operational impacts of future solar and proposed changes to time-of-use periods.

This concludes my summary. Thank you.

MR. WAHLEN: Mr. Aponte is available for cross-examination.

CHAIRMAN LA ROSA: Thank you.

OPC, you are recognized when you are ready.

MS. CHRISTENSEN: Good morning. Good morning, Commissioners.

EXAMINATION

BY MS. CHRISTENSEN:

Q Good morning, Mr. Aponte.

A Good morning.

Q Can you -- can I ask you to turn to page six? That's C5-302.

A Yes.

Q And on page six, starting at line 13, you say that the purpose of your testimony is to do the cost-effectiveness test to support TECO's request to include the multiple engineering projects, correct?

A Yes.

Q Okay. And then if you move on to page seven of your testimony, you -- and starting at line one, you start to say that your testimony shows, from a CPVRR basis, the company's resource plan is favorable, is that correct?

A Yes.

Q Okay. And what does CPVRR mean?

A Cumulative present value revenue requirement.

Q Okay. And would you agree that the CPVRR is intended to compare the alternative of the proposed unit and its revenue requirement to the next alternative unit?

A Yes. That's correct.

Q Okay. And you are the person who developed the economic evaluations and the support for company's new solar and storage projects, correct?

A Correct.

Q Would you agree that in your economic evaluations for the new solar resources, you used a 35-year service life for solar?

A Yes.

Q And would you also agree that if you use a shorter or a longer service life, it would affect the economic evaluation and the present value benefit or harm of adding the resource compared to the base case?

A It would change it.

Q And isn't it true if you used a shorter service life, it would reduce the economic benefit of the solar resources, all else equal?

A Subject to check, I believe the change will be insignificant.

Q But you would agree that it would lessen the economic benefit, however slightly?

A Not having done it, I would say that it's just a small change. I don't know which way it would go.

Q Okay. And if the solar project is delayed or never built, that would reduce the economic benefit of the solar resource as well, correct?

A Yes.

Q I would ask to look at OPC 5. And as soon as that is up -- there we go.

Do you see that work paper?

A Yes.

Q Okay. Is this your CPVRR analysis for the Farmland Solar Project?

A Yes.

Q Okay. And looking at the bottom, there is a note there. I know it's difficult to read. It might be easier on your laptop. It says: 2053 contains end effects. Does this mean the CPVRR analysis was done for 30 years, or through 2053?

A What that means is that in order to capture the full revenue of requirements for assets that go in-service later in the time horizon, we have to extend the calculations past 2053 to capture their full revenue requirement components of future assets.

Q Okay. Is it correct that the company does not have any specific plans to retire its solar resources prior to the 35-year service life reflected in these economic evaluations?

A Yes.

Q And would you agree that, in the near-term -- and this is a slightly different take -- artificial

intelligence holds the possibility of lowering operating costs of and extending the lives of your solar generation facilities, if you know?

A Sorry. You said artificial intelligence?

Q Uh-huh.

A I hope we will.

Q Okay.

A I am not sure.

Q Fair enough.

I would also ask you to look at OPC 1. And this should be a copy of the Ten-Year Site Plan. Are you familiar with this document, the company's Ten-Year-Site Plan?

A Yes, I am.

Q Okay. I think that's the cover sheet, but if you move down to page -- no. I'm sorry. Maybe I put it -- yep, there it is -- two pages, you can see the cover page for the Ten-Year Site Plan?

A Yes.

Q And then I would ask you to go to page 80, F2.1-80, which is page 78 of this Ten-Year Site Plan. And once we get there, I was going to ask you to take a look at this, which is -- I believe it's the English Creek Ten-Year Site Plan. And if you can look down at the bottom of this portion of the document, and then

under line 13, I believe it says that the service life, or the book life here, is 35 years; is that correct?

A Yes.

Q Okay. And then if we go to the next page, which is another project, this is the Bullfrog Creek Project, right?

A Yes, it is.

Q Okay. And if you go down to that same line, 13, and if you go to book life years, it also says 35 years, correct?

A Yes.

Q Okay. Let me take you back to your testimony at page 13. And if you can let me know when you get there.

A I am there.

Q Okay. And I'm going to give it a second for these guys to also get there.

Okay. Starting at line seven of your testimony, you start talking about the South Tampa Resiliency Project, correct?

A Yes.

Q And you are adding four reciprocating internal combustion engines with capacity of 75 megawatts on MacDill Air Force Base, is that correct?

A That is correct.

Q And then if you go down a little further on the page to line 23 here, you -- through the top of the next page. You say: In exchange for access to the base site, TECO is getting an added level of resiliency. Is that correct?

A Yes.

Q And am I correct that by adding the resilience, you mean that South Tampa Resiliency Project generation is located in the middle of a dense load center?

A Yes, it is.

Q Okay. And would you agree that adding -- or would you agree that locating these units on the base will provide essential backup power for the base in case of emergency?

A Yes.

Q And would you also agree that you did not include any government funding in your CPVRR analysis?

A I did not.

Q Going to page 17 of your testimony, line -- starting at line 14, you say: The CPVRR differential was favorable for customers by only 10 million without the emissions. Is that correct?

A Yes.

Q You would agree that the CPVRR would have been

more favorable for customers if governmental money -- monetary funding had been sought?

A Not knowing what type of funding -- it could, but I don't know of any type of funding.

Q Okay. If we go on to page 18 of your testimony, looking at line five, you start talking about the future energy storage projects, which is the same thing as utility scale battery storage, correct?

A Yes.

Q At this time, is TECO planning four battery storage projects in '25? And those would be Dover, Lake Mabel, Wimauma and South Tampa, is that still correct?

A Yes.

Q Okay. And the South Tampa has been delayed from the in-service date of April 2025 to December '25. Is that still the case?

A Yes. That's my understanding.

Q Okay. Going to the top of page 25 of this document -- or, I am sorry, 24. You discuss the future solar projects, correct?

A Yes.

Q And if you go over to the next page, on page 25, starting at line 22. You are there?

A Yes, I am.

Q Okay. You can see that you are also starting

to talk about the company's plans to build future solar. Do you see that?

A I do.

Q And on that line, you say: The company plans to build 448.7 megawatts of additional utility scale solar PV projects across its service territory by the end of 2026. Is that correct?

A Yes.

Q Okay. And am I correct, these projects are English Creek, Bullfrog Creek, Duette, Cottonmouth, Big Four, Farmland, Brewster and Wimauma?

A Yes.

Q Okay. Would you agree that you have a total of 97.5 megawatts of solar put in place by the end of 2024?

A Yes.

Q And those would consist of the English Creek and Bullfrog Creek projects, correct?

A Yes. That's correct.

Q Okay. And then if we go to page 26 of your testimony, you say that 149 watts of future solar will be put in place at the end of 2025, is that correct?

A Yes.

Q And those projects are Duette and Cottonmouth Ranch, correct?

A Yes.

Q Okay. And then moving on further into your testimony, on 26, you say that you have 242 megawatts of future solar that will be put into place by the end of 2026, correct?

A Yes.

Q And those projects are the remaining ones of Big Four, Farmland, Brewster and Wimauma, right?

A Yep. That's correct.

Q Okay. Now, if we can look at page 58, or Bates stamp 70 of the Ten-Year Site Plan. That's F.2-72. As soon as we got there, we will take a look at that. And -- yeah, I think -- 72, I think, master sheet, okay. And I know it's not right-side up. Ah, good, you corrected that.

You can see that this shows the current summer margin reserve for Tampa Electric, correct?

A Yes.

Q Yeah, it may be easier to look up on the screen, just because it has the correct orientation. Can you see that?

And you can see --

A Okay. Thank you.

Q Do you have a better view? Just let me know when you have got it in a good orientation for you to

take a look at it.

A Okay.

Q Okay. Now, this shows the summer reserve margin for TECO of 30 percent in 2025, 30 percent in 2026, and 29 percent in 2027; is that correct?

A Yes.

Q Okay. And now I'm going to ask you to scroll to the next page of this exhibit. I believe it should be -- I am sorry. F73, which should be the next page. We may still have similar orientation issues. So we can get that oriented, let me know.

And this page should show the winter reserve margin for TECO.

A Yes.

Q Okay. And can you see over into the last column, where it says that there is a 23-percent winter reserve margin in 2025, 23 percent in 2026, and a 22-percent in 2027?

A Yes.

Q Okay. And that's correct --

A Yes?

Q As far as you know? Okay.

Now, would you agree that solar does not contribute to winter reserve margin?

A That's correct.

Q Okay. And you would agree that, right now, there is no carbon emission cost imposed by the federal government or state of Florida. Has that changed as of today?

A It has not.

Q Okay. And would you agree that the company's reserved margin is above 20 percent for both winter and summer reserve margins from 2025 through 2027?

A They are.

Q And isn't it correct that the solar generation projects are not needed to meet the company's summer peak demands needs in 2025 through 2027?

A Did you say summer?

Q Summer.

A They contribute to the summer reserve margin, but a small percent.

Q Okay. And would it also be correct that the solar generation projects are not needed to meet the company's winter peak demand needs in 2025 through 2027?

A Yes.

Q Okay. I would like to call your attention to your rebuttal testimony, page seven. And then when you get there, we will be looking at lines 10 through 12. Let me know --

A I am there.

Q Okay. And looking at that portion of your testimony, you say: The company performed a sensitivity analysis incorporating a 0.4 percent degradation per year until the end of the project's useful life for the future solar projects. Is that correct?

A Yes. That is correct.

Q And you used a 35-year life for the solar in this analysis, is that correct?

A Yes, I did.

Q Okay. Thank you very much. Thank you, Mr. Aponte.

A Thank you.

CHAIRMAN LA ROSA: Thank you.

Florida Rising/LULAC.

MR. MARSHALL: Thank you.

EXAMINATION

BY MR. MARSHALL:

Q Good morning, Mr. Aponte.

A Good morning.

Q If we could go to master page F3.3-5838. This is FLL-177.

As my -- as Ms. Christensen just hinted at, I believe you just said that solar contributes zero towards the winter reserve margin, and that's because solar has a zero assumed capacity value during the time

of the winter peak.

A That's correct.

Q And this chart here in Exhibit FLL-177 is the summer capacity value for the solar plants that are at issue in this case?

A Yes.

Q And so, wave four includes the Brewster and Wimauma 3 solar projects?

A Yes.

Q And those are planned to come into -- start generating in 2027?

A That's correct.

Q And so that would be part of the subsequent year adjustment in this case?

A Yes.

Q And they are assumed to have a summer capacity value of 1.5 percent?

A They do.

Q And why is that?

A The reason for that is the more solar you add, the effect on the system peak is that it moves the system peak to a later time in the day. The net between the load, minus the output of outer solar is what we call net peak. And the more solar you add, the later that net peak is going to occur during the day, when the

solar is producing less output.

Q And if I can now direct your attention to what has been admitted on the CEL as Exhibit 120. This is master number C32-3577.

Do you recognize this document?

A I do.

Q And what is it?

A It is a spreadsheet that we use to calculate the reserve margins.

Q And those diminished solar firm capacity factors are reflected in this chart?

A If you mean capacity values, yes.

Q Capacity values.

And so, for example, Wimauma 3 has a nameplate capacity of 74.5 megawatts, but has a summer firm capacity on this chart of 1.1 megawatts?

A That's correct.

Q Would it be fair to say that for the period of 2025 through 2027, in order to maintain planned reserve margin of 20 percent, it would be the winter reserve margin that we should be looking at that could be driving plant additions to the system?

A Can you please repeat that question?

Q Sure.

In other words, the summer reserve margin, as

reflected in this chart for 2025 through 2027, is higher than the winter reserve margin?

A Yes.

Q And so, any plant additions, you know, for reserve margin purposes, to meet that 20-percent reserve margin, we should probably be looking at that winter reserve margin?

A We are.

Q And solar plants are assumed to not contribute to that?

A Correct.

Q And so the solar plants that are being added to the system are for the energy value that translates into economic benefits for TECO and its customers?

A Yes. A big portion of the benefit is reduction in fuel cost.

Q And so the solar is not being added to the system in this time period or its capacity value?

A Correct.

Q You are not aware of any recent analysis by TECO showing that if you went below a 20-percent reserve margin, that rolling blackouts would be more likely to occur?

A I am not aware of any analysis like that.

Q If I could next direct your attention to

Exhibit FLL-85. This is master page F3.1-2651.

You were the sponsor of this interrogatory?

A Yes.

Q And so TECO does not conduct loss of load probability studies?

A Not at the time.

Q What is a loss of load probability study?

A A loss of load probability would indicate if the portfolio -- it's a measure of the reliability of the portfolio, and it's trying to determine the chances of not meeting load. The industry standard seems to be one day in 10 years.

Q Switching topics now. You did a series of cost-effectiveness analyses in connection with this case?

A Yes.

Q And if we could go to what's been admitted as Staff Exhibit 159, master E1965.

This is a copy of the financial inputs that you used in your cost-effective analyses that were included in your testimony?

A Yes.

Q And you assumed a 10.2-percent return on equity for your cost analyses?

A I did.

Q If the return on equity was approved at 11.5 percent, it would impact your analyses?

A It would.

Q And that would be -- it would create a difference in the revenue requirement?

A It would create a different revenue requirement. The only thing I would add to that is that when we are doing cost-effectiveness analysis, we have to look at a reference case as well as a change case. And when the financial assumptions change, they have to be changed on both, base and change cases. And I am saying that because we expect the changes to the results to be not that material.

Q If I could next direct your attention, still within this exhibit, to master page E2008.

This shows a copy of the fuel price forecast that was used in the rate case?

A Yes.

Q And that was included in your cost-effectiveness analysis?

A Correct.

Q And it does show escalating natural gas prices?

A It does.

Q The South Tampa Resilience Project is a series

of reciprocating engines on the MacDill Air Force Base?

A Yes.

Q And it will provide backup power to the Air Force Base as -- for electrically islanded operations in case of an emergency?

A In the case of an emergency, yes.

Q And besides the land for the engines, the U.S. Government isn't providing any kind of financial contribution to the project?

A Not that I am aware of.

Q If I could next direct your attention to Exhibit FLL-173. This is going to be master F3.3-5305. This is one of your documents?

A Yes.

Q And it includes the reserve margin calculation for the winter with and without the South Tampa Resilience Project?

A Yes.

Q And then if I could next direct your attention to Exhibit FLL-127. This is going to be master page F3.2-3894.

A I am sorry. May I add a clarification on the previous exhibit?

Q We can go back to -- that was master page F3.3-5305.

THE CLERK: 3.3-5305?

MR. MARSHALL: 3.3-5305.

THE WITNESS: Thank you.

When this exhibit was developed and we reflect a with and without the specific project. I just wanted to verify that the remaining expansion plan has been failure to meet a reserve margin of 20 percent. So this does not reflect pulling the project out and leaving a reserve margin gap.

BY MR. MARSHAL:

Q I am sorry. Could you say that again? What --

A Yes. So, for example, if I take away all the proposed projects that we have, we would fall under 20 percent reserve margin pretty quickly. And to satisfy that reserve margin, and if we were not to do the projects, we would have to add capacity in a different way, perhaps it's the next best addition, which could be a CT.

So what I am trying to say is that when we took away the South Tampa project, for example, in this chart, and it created a reserve margin need, we filled it with another resource.

Q And I think we are going to get there. We have a --

A Okay, no problem.

Q We have a lot of documents, Mr. Aponte. And I think what you are referring to is those documents that shows the base case, and then the non-base -- the change case with each individual project. And those base cases have placeholder CTs that were for TECO to meet its reserve margin, is that right?

A That's correct.

Q And so this would refer to when it's without those projects, this would be in reference to those base cases?

A Yes.

Q Okay. If we could go back now to master page F3.2-3894. This is going to be FLL-127.

And this document provides the detail of that base case without the South Tampa Resilience Project?

A I believe so.

Q And you would agree that there is no summer reserve margin issue?

A That's correct.

Q And it does show a -- on next page, for the winter, it does show a 20-percent reserve margin for the winter of 2026?

A Yes, I see that.

Q And it does not show a reserve margin issue

before then?

A No, not before then.

Q And would you agree that the installation of the South Tampa Resilience before then is -- would be for economic reason, not capacity reasons?

A Yes.

Q All right. If I could now go to FLL-128. This is going to be master page F3.2-3897.

And so, this document would provide additional detail regarding the reserve margins with the South Tampa Resilience Project?

A I am going to go with that because I don't see a title on the page, so I --

Q We can go through the Bates stamp number and establish the trail.

A No, that's okay. We can move on.

Q Okay. And this document -- again, because this would be -- you know, if I represent to you that this the South Tampa Resilience, you know, change case, you know, it would only included the reserve margins of the next document that we are going to get to, which would be the South Tampa Resilience Project case that you used in your cost-effectiveness analysis.

A Okay.

Q And so it doesn't include all the storage

projects after the Dover battery project?

A That's correct.

Q And this shows that it would be down to a 20-percent reserve margin in the -- for winter for the winter of 2027?

A Yes. That's correct.

Q Maybe I should have done this in a different order, but now let's now go to FLL-129. This is master page F3.2-3900.

So this document shows the base case and South Tampa Resilience Project change case used for your cost-effectiveness analyses?

A Yes.

Q And so it doesn't include any of the solar or battery projects subsequent to the Dover battery project in either case, although, TECO is planning to move forward with those projects?

A That's correct.

Q And even in the change case, it still shows a need for a CT in 2028?

A Yes.

Q And it does include the Polk 1 simple-cycle conversion project, is that right?

A It does.

Q And we will discuss that project more in-depth

later, but that project actually decreases the capacity of that unit?

A Slightly, yes.

Q If I could next direct your attention to FLL-123, master page F3.2-3883. And this shows the cost -- your cost-effectiveness results for the South Tampa Resilience Project?

A Yes.

Q And -- well, you know, some basic questions here, but if it's in parentheses, that's savings, and if it's not in parentheses, that's the net cost?

A Correct.

Q And that would be in comparison to the base case that we just discussed?

A Yes.

Q The biggest savings come from system fuel, is that right?

A That's correct.

Q And fuel is directly connected with energy use, not capacity?

A That's right.

Q And if not for the fuel savings, this project would not have been found to be cost-effective?

A That's correct.

Q If I could next direct your attention to

master page F3.2-3901. This is FLL-129. And I just want to direct your attention to the bottom of the page. There is a note.

It says: The South Tampa Resilience Project is transmission constrained to 37.6 megawatts until summer 2026. Is that right?

A Yes. I see that.

Q Is that your understanding that that's true?

A That was true at the time the analysis was developed, but my understanding is that we may have some more ability on accelerating that date.

Q One of the benefits of the project -- of the South Tampa Resilience Project for TECO's customers was to avoid transmission upgrades, is that right?

A Yes.

Q If I could direct your attention to FLL-247. This is going to be master page F.34 -- I am sorry -- yes, F3.4-19921.

This is an earlier draft of the cost-effectiveness analysis for the South Tampa Resilience Project?

A Yes.

Q And it shows an estimate of approximately $5.5 million in savings and avoided transmission as a benefit?

A That's correct. Yes.

Q And it also shows that the interconnection costs for the facility are estimated to be $8.2 million?

A Yes.

Q And so those interconnection costs are higher than the avoided transmission upgrade costs?

A Yes, they are.

Q All right. If I could go back to master page C3.2-3577. This is admitted Exhibit 120.

This document contains all of the generation and storage projects that TECO has proposed through this rate case?

A I am there.

Q This document contains all of the solar battery storage and fossil generation projects that TECO has in this rate case?

A It does.

Q If you go to winter of 2027, South Tampa Resilience has 75 megawatts of capacity that's contributing to that winter reserve margin?

A Yes.

Q If you deduct that 75 megawatts, you would still have over a 20-percent reserve margin in 2027, wouldn't you?

A We may in that year. We may fall short right

after that.

Q But would you agree with the math, that at least through 2027, you would be okay?

A Yes.

Q If I could next direct your attention to FL-131. And this is going to be master page F3.2-3908.

So this document would include the Big Four solar base case and change case.

A Okay.

Q And you would agree that the reserve margins on here are -- well, even through 2027 are above 20 percent?

A Winter, yes.

Q And as comparison to the base case and change case we were looking at with the South Tampa Resilience Project, this shows a lot of the other projects layered on, such as the other energy storage projects subsequent to the Dover energy storage project, and the earlier solar projects that come before this one?

A That's correct.

Q And just for comparison purposes, keep in mind the summer reserve margin here for 2027 -- and if we could next go to FLL-145. This is going to be master page F3.2-3964 -- and before you -- sorry, real quick.

This does not show the Wimauma 3 solar project

on this case?

A It does not.

Q Okay. Now, let's go to that master F3.2-3964. This document includes the Wimauma 3 base case and change case?

A Yes.

Q And the reserve margin is not all that different from what we were looking at before?

A Yes.

Q All right. If we could next go to FLL-122. This is going to be on master page F3.2-3875.

This is your cost-effectiveness analysis for the Polk 1 Flexibility Project, which is the simple-cycle conversion?

A Yes.

Q And this project found savings -- or has savings from the Polk 1 project upgrade and Polk 1 sustaining capital and fuel?

A Yes.

Q And so you would agree that those savings are coming from some kind of capital investment TECO is assuming would need to be made at Polk Unit 1 to keep Polk Unit 1 as it is without the flexibility project?

A Yes. That's correct.

Q And this is not a -- this is not a capacity --

this is not a project to add capacity to the system?

A It is not.

Q And, in fact, the expected output of the converted unit is about 20 megawatts less than the current combined-cycle?

A That's correct.

Q If I could next direct your attention to FLL-92. This is master page F3.1-2895. Do you see that interrogatory answer in front of you?

A I do.

Q And this actually shows the cost of that Polk 1 project upgrade without the Polk 1 Flexibility Project?

A I believe so. Yes.

Q And so this would be the cost necessary to maintain Polk 1 as-is?

A That's correct.

Q And would you agree that the biggest cost is capital for the steam turbine?

A Yes. I see that.

Q And the next biggest capital cost would be for the heat recovery steam generator?

A Yes.

Q If I could next direct your attention to FLL-124. This is going to be master page F3.2-3885.

And so this document shows the reserve margins and the Polk 1 Flexibility base case?

A Yes.

Q And so that -- the base case for that is the assumption that the flexibility project doesn't move forward and Polk 1 stays as-is?

A That's correct.

Q If I could next direct your attention to FLL-125. This is master page F3.2-3888.

And this document shows the reserve margins and the Polk 1 Flexibility case as in the project moves forward?

A Yes.

Q And as alluded to earlier, you would agree that the total installed firm capacity, as compared to the document we were just looking at, goes down slightly?

A Yes.

Q And you would agree that the summer reserve margins are still well above 20 percent?

A They are.

Q If we could next go to FLL-126. This is master page F3.2-3891.

And this document shows the Polk 1 Flexibility base case and the Polk 1 Flexibility change case?

A Yes.

Q And the Polk 1 Flexibility base case doesn't include any of the other projects at issue in this case, correct, other than the Dover Energy Storage Capacity Project, which is going in in 2024?

A Yes, in this particular illustration, it does not.

Q And it does not include the South Tampa Resilience Project?

A Correct.

Q And it doesn't show any need for additional generation until 2027?

A Yes.

Q And that's going to be based on the 20-percent reserve margin for winter?

A Yes.

Q If I could direct your attention to FLL-97. This is going to be master page F3.1-3000.

You conducted a cost-effectiveness analysis looking at the potential to retire Polk Unit 1?

A Yes, we did.

Q And it found such retirement to be cost-effective as compared to the status quo?

A It did.

Q Great. Thank you.

MR. MARSHALL: That's all my questions, Mr. Chairman.

CHAIRMAN LA ROSA: Great. Thank you.

Next up is FIPUG.

MR. MOYLE: Thank you, Mr. Chairman.

EXAMINATION

BY MR. MOYLE:

Q Good morning.

A Good morning.

Q I had a question yesterday for your Vice-President of Operations with respect to how you determine the need for future facilities. I believe he asked me to ask you that question, and you are responsible for future facilities, is that right?

A Yes.

Q Yeah. So how do you determine the need for the solar plants that you are putting in now? You were asked a question about economic need versus a physical reserve margin need. Could you just explain how you would determine the need for the solar plants that you are seeking recovery for, please?

A Yes, of course.

There are two basic components of a need or a criteria for adding new resources. In the example of solar, that is affordability. It is an economic need.

Adding the solar lowers the CPVRR for customers compared to not doing those projects.

The second criteria is the 20-percent reserve margin. We are required to maintain 20 percent. In the case of Tampa Electric, it's a winter reserve margin. So that's the season that we look for.

Q So is part of your analysis, if you are looking, and you have a 25-percent reserve margin, but then you're -- well, there is an economic benefit of solar. Will you keep adding solar to take you above 25 to got to 30, and is there a hard line anywhere stop on the reserve margin?

A Well, with solar, as I described very briefly earlier, there is a point where solar loses any capacity value, which, in this case, will be in the summer. So at some point, solar doesn't really move the needle in any way in terms of reserve margin for either winter or summer.

And we believe that is the proper way to look at it, because, you know, if we don't do that adjustment, solar would artificially inflate reserve margins, and that's just not a good reliability metric to have artificially high reserve margins to the solar. So that's why that adjustment is necessary for the summer.

Q I think you answered a question where you said that there is no value added to the winter peak, and there is a very small benefit added to the summer; it was 1.5 percent, is that right?

A That's correct. That would be the last couple of projects that we are presenting have a one-and-a-half percent capacity value to the summer.

Q And when you say that on-and-a-half percent capacity value to the summer, explain exactly what that means. I mean, that doesn't mean you are at 18.5 and then it gets you 1.5, so you are 20 percent, so you are good on reserve margin, does it?

A No, it does not mean that. What it means is that out of the nameplate capacity of the solar, when I am doing a calculation for the reserve margin on any given year, I am only counting one per -- 1.5 percent of its nameplate to contribute towards reserve margin in the summer in that year.

Q So what's the math on that, assuming 75 megawatts?

A Like, one, two megawatts.

Q Do you have operational familiarity with how your solar -- your solar -- utility scale solar works?

A Yes, somewhat. Yes.

Q Yeah. There was a discussion about if the sun

is not shining, it can degrade the solar unit's output. Obviously, that makes sense at night, but in a discussion yesterday with Mr. Stryker, he said there variability on that.

Can the variability go higher as well? He was talking about it going lower, but can it go higher as well, operationally?

A Yes. The variability of solar could go both ways. At any given hour, solar could move a little bit up or down.

Q And if you are designing your solar fields, your utility scale solar field is at 74.5, is that right?

A That's correct.

Q Yeah. Can it go over that on an ideal day for solar?

A No, it cannot. That's governed by the inverters. It will always be below that, or at that.

Q An inverter, is that kind of like a governor? It won't allow it go above that? You have heard of a governor on a car, or something, it won't let it go above a certain speed? Do you have something similar? Is that what the inverters do?

A Yeah, something like that.

Q On page 27 of your testimony, line 12, when

you were doing -- I mean, you run cost-effective analysis on all of these solar projects, correct?

A Yes.

Q Yeah. You said one is not cost-effective, is that right?

A It's a slight cost. That's correct.

Q Yeah. Which one is that?

A It's English Creek.

Q But you are asking for it to be approved even though it's not cost-effective, is that right?

A That is correct. Although, there has been a couple of changes to inputs that have recently happened. For example, the increase of the PTC from 27-and-a-half to $30 a megawatt hour.

We also filed a midcourse correction forecast several months ago. That's another input change. And I believe that both of those combined are make English Creek be a small benefit, cost-effective.

Q But you haven't done an analysis, or have a document, or anything, that suggests that that's the case, is that correct?

A That's correct. Back-of-the-envelope we believe it's going to become a cost-effective project.

Q Mr. Collins indicated that you did not use a carbon adder with respect to your analysis of the

cost-effectiveness of the solar projects. Wasn't he half right when he said that?

A Mr. Collins was absolutely correct. I did not.

Q Duly noted.

Let me come at this way: Didn't you do an analysis of your cost-effectiveness assuming a carbon cost in one way, and then also not assuming the carbon cost?

A Yes. That's correct. We did it both ways. Although, the company's criteria for determining to move forward with cost-effective projects excludes all benefits from the reductions of CO2. Exhibits show it as an illustration purposes only to show how much more benefit we could potentially get in the event that a carbon tax becomes a mandate. But the criteria for the company to move forward with cost-effective projects excludes the benefit of CO2.

Q Okay. And just -- let's reference one, the last exhibit in your direct testimony, on page 63, document number 22, page one of your direct testimony.

A I am there.

Q I am waiting for them to pull it up on this -- okay, it's up there.

The name of this project is what?

A It's Wimauma 3.

Q And if you go down -- if we could scroll down to the CO2 emissions cost.

A Yes.

Q So that figure, how did you come up with that figure?

A Sure. So sometime ago, we went out and purchased a report from an outside consultant that, based on their research and their analysis, assigned a specific value to -- a cost per ton of CO2 for our region.

So basically, using that value, multiplied by the amount of tons that solar project would reduce on our system, that turns into a benefit, by doing that math. The amount of tons reduced by the cost of each ton that would have cost us if there was a carbon tax, that is what that benefit represents.

Q Who is the group you hired?

A The consultant's name was called ICF.

Q And what did the report conclude? When you reviewed it and read it, what was the rationale and the reasoning as to why a carbon cost was projected to be in place, particularly at a point in time that it would affect the solar units that you were moving forward with?

A Well, like I said, the report is a year or two old, but it -- the report looked at the microeconomics of everything going on with any type of proposals for regulations, emission regulations. It looked at the region. It looked at, really, many factors to come up with that.

Q All right. And did his report assume that it would be government action that would impose a fee or a tax on carbon?

A At the time of that report, I believe that it did assume government action in -- at a certain year in the future. And, like I said, the report is a couple of years old.

Q Yeah.

Did you -- in preparing your testimony, did you check that conclusion that there might be at tax on carbon imposed by the government, did you check it with any of your legislative people at the state level and say, do you think Florida is going to be putting a carbon tax in place any time soon?

A Not outside the company, but I -- we recognize that, at the moment, there is no plan to assign a carbon tax.

Q Yeah. How about even within the company?

A Yes, that -- we recognize there is no

immediate plan to assign a carbon tax.

Q Right. And the same question with respect to federal legislative assets that you have?

MR. WAHLEN: Mr. Chairman, this is fascinating to me, of course, but the testimony is that the company is not relying on a carbon adder to prove cost-effectiveness. I really don't know that this is adding a lot. If Mr. Moyle wants to continue, he can, but we are not relying on the cost of carbon to prove the cost-effectiveness of these solar projects.

CHAIRMAN LA ROSA: I think the question has been answered. Are you finishing this line of questioning or --

MR. MOYLE: Well, I was trying to understand, you know, he said they did a report. I was trying understand the rationale in the report and, you know, this is -- you know, they got exhibits that are showing this, so, you know, they are saying they are not relying on it, but they have done it, and are putting it in front of you --

CHAIRMAN LA ROSA: Right.

MR. MOYLE: -- but I think I am -- I think I have exhausted that line of questions.

CHAIRMAN LA ROSA: Okay. Thank you.

BY MR. MOYLE:

Q You also project a savings based on projected fuel savings, and you had to do a -- use of forecast of what natural gas prices would be going forward, is that right?

A Yes.

Q The prices that you used are higher than the Henry Hub Natural Gas Price Futures that come from NYMEX, is that correct?

A Yes, they are, because we have to add a basis to get the fuel delivered to our region.

MR. MOYLE: I have no further questions.

CHAIRMAN LA ROSA: Thank you.

All right. FEA.

CAPTAIN GEORGE: FEA has no questions. Thank you, Commissioner.

CHAIRMAN LA ROSA: Thank you.

Sierra Club.

MS. AMIEL: Yes. We have some questions.

EXAMINATION

BY MS. AMIEL:

Q Good morning, Mr. Aponte.

A Hi. Good morning.

Q So you state in your testimony that the Polk 1 Flexibility Project will cost $80.5 million, right?

A Yes.

Q Can you please pull up the Sierra Club Exhibit 17, which is the PSC Exhibit 804, page F6-360? And let me know when you have that in front of you.

A I see it.

Q Thanks.

So looking at the tab calculating costs with Polk 1 -- Polk Unit 1 Flexibility, we can see an estimated $90.1 million cost for the conversion of Polk 1, do you see that?

A I see it.

Q So it's possible the total cost of the Polk 1 Flexibility Project is higher than the 80.5 million?

A What the 90.1 million represents is the $84 million overnight construction cost after we have gone through the calculation of adding the revenue requirement for that capital. So the MPV of the revenue requirement of that capital becomes 90.1.

Q So which cost is passed on to the ratepayers, the 80.5, or this higher 90.1?

A The 90.1.

Q Okay. So -- all right. Thank you.

Looking again at Sierra Club -- the same Exhibit F6353, on page F6-353, the tab -- this is a tab that considers a scenario without the Polk 1 Flexibility

Project -- thank you. This also projects high costs from maintaining the unit as-is, right?

A Yes.

Q Including a $130.9 million project upgrade cost, right?

A Yes.

Q And when would that upgrade need to occur?

A In 2025.

Q Okay. If Polk 1 were to retire in 2025, TECO would avoid incurring this roughly $131 million cost, right?

A If that unit retires in 2025, it would be replaced with the same amount -- it would need to be replaced with the same amount of capacity to maintain their reserve margins. So I believe the amount of money would be higher than that.

Q Okay. That feeds right into my next question, so thank you.

TECO has not performed a retirement analysis for Polk 1 since 2022, correct?

A A retirement analysis for Polk 1 since 2022?

Q Uh-huh?

A I know we have looked at it several times. We -- our most recent one may be 2023.

Q 2023. Is that in the record in this case?

A Yes, it is.

Q Okay. So is that the same retirement analysis that I had asked Witness Aldazabal about, the one that analyzed retiring Polk 1 in 2028?

A That's correct.

Q Okay. But the study did not consider any retirement years apart from 2028, right?

A It did not.

Q So in assessing the cost of retiring Polk 1 versus keeping the unit operational, TECO did not specifically consider a scenario where it replaces Polk 1 with renewable energy or energy storage, right?

A We did not.

Q In performing this requirement study, TECO did not consider the cost of acquiring renewable energy, such as solar or storage, through an open source RFP process, did it?

A For purposes of the analysis, no.

Q But TECO is not planning to issue all source RFPs for solar or batter storage projects, is it?

A I am not the project expert, but I -- but we have a competitive buying methodology.

Q Okay. Does that methodology include an open source RFP, where participants can bid?

A I believe it does. I am not the right person

to answer that.

Q Okay. I guess put differently, maybe this is more helpful. TECO is planning on building its storage projects itself, correct?

A Yes.

Q Would you agree that the economics of battery storage are changing rapidly?

A Yes, they are -- it's -- they are changing.

Q For example, do you anticipate the Inflation Reduction Act or IRA tax credits are driving down the cost of battery storage further?

A Yes, they do.

Q Can you guarantee holding an open source RFP would not result in a lower price for energy storage than if TECO built its own gold-plated battery storage?

A I am not the right person to answer that.

Q Okay. And who would be the right witness in this case to answer that?

A It will have to be Witness Stryker.

Q Okay. Witness Stryker directed several of these questions to you. Okay. I will ask another question about the retirement study.

So turning back to the Polk 1 Retirement Study from 2022, did TECO consider the cost of the Polk Fuel Diversity Project in that -- apologies -- from 2023, did

TECO consider the cost of the Polk Fuel Diversity Project in that study?

A I am sorry. Can you repeat that question?

Q Yes. I had the wrong year.

So turning back to the 2023 Polk 1 Retirement Study, did TECO consider the cost of the Polk Fuel Diversity Project in conducting that study?

A My understanding is that those two projects are not connected.

Q Okay. So did TECO consider -- I guess I will ask differently.

Did TECO consider the costs of the Polk Fuel Diversity Project when it was assessing the cost-effectiveness of retiring the plant?

A No.

Q Okay. And did TECO consider the cost of the Polk 1 Flexibility Project in weight the cost-effectiveness of retirement?

A Ask me that one more time, please?

Q Yeah. No problem.

So in conducting that retirement study, did TECO consider the cost of the Polk 1 Flexibility Project?

A Well, in order to do a complete analysis for the Polk 1 Flexibility, we looked at the retirement

analysis in 2028, yes, that was one sensitivity we did.

Q Okay. So in performing the 2023 retirement study, did TECO factor in environmental compliance costs?

A No, we did not.

Q Okay. So TECO did not consider costs related to federal rules that were finalized after 2023, such as the 2024 Greenhouse Gas Standards, right?

A No, not in that analysis.

Q Okay. So in your rebuttal testimony, on page 13, you stated that if Polk Unit 1 were to return to IGCC operation, or retired before 2023, it would not be subject to any greenhouse gas emission standards. Would you still agree with that statement?

A Okay. Can you please point to me --

Q Yes.

A -- where I said that?

Q Absolutely. So this is your rebuttal testimony, page -- oh, apologies. That is actually Witness Aldazabal's rebuttal, so that's a mistake.

Okay. So this is about Polk Unit 1 and retirement, so I am going to ask you this question, and if you are totally unfamiliar with it, you can let me know, but it's on Witness Aldazabal's rebuttal at page 13, lines 20 --

MR. WAHLEN: I am -- excuse me.
MS. AMIEL: Yeah.
MR. WAHLEN: It sounds like she is about to cross-examine Mr. Aponte on Mr. Aldazabal's rebuttal testimony. Am I --
CHAIR LA ROSE: Yeah, can we get clarification of the direction you are going, because I know there some --
MS. AMIEL: Yeah.
CHAIRMAN LA ROSA: -- on which testimony you are addressing?
MS. AMIEL: No. Absolutely. And that was -- that was my mistake.
So I was just going to ask the witness a question that relates to this retirement analysis. It's just one statement that was in Witness Aldazabal's rebuttal, but it related to federal rules that various witnesses have mentioned, so if he's -- if this witness is unfamiliar, Mr. Aponte can just let me know and then I can --
CHAIRMAN LA ROSA: Okay. Go ahead and continue.
MS. AMIEL: Thank you.
BY MS. AMIEL:
Q So this is on Witness Aldazabal's rebuttal

testimony on page 13, lines 20 through 22. And I can read it aloud and you can let me know if you are unfamiliar with this topic, is that okay?

A That's okay.

Q Thank you.

So Mr. Aldazabal stated: If Polk Unit 1 were to return to IGCC operation but retire before 2032, it would not be subject to any greenhouse gas emission standards.

Does that sound right to you?

A I am very unfamiliar with that --

Q Okay.

A -- any greenhouse gas standards.

Q Okay. That's fine. So then I will move on.

Okay. So -- okay, you are familiar with the term reserve margin, correct?

A Yes, I am.

Q Could you please briefly explain how a reserve margin impacts an electric utility's generation mix?

A Can you repeat that question?

Q Yes, of course.

Can you please briefly explain how a utility's reserve margin impacts its generation mix?

A Well, planning reserve margin and generation mix are two different things. We could satisfy reserve

margin in many different ways, very different generation mixes, so I am not sure I am following your question.

Q Okay. I think that answer is helpful.

So a higher reserve margin makes it more difficult to retire a generation asset, all else equal, right?

A Higher reserve margins make it more difficult to retire units?

Q Uh-huh.

A No. I don't agree with that.

Q Okay. But a higher reserve margin requires you to maintain more units on-line generally compared to having a lower reserve margin, is that right?

A They don't have to be on-line. A reserve margin is based on installed capacity.

Q Okay. So a higher reserve margin generally requires a higher degree of installed capacity, as opposed to a lower reserve margin, right?

A Yes, that's right.

Q Okay. And for TECO, it's really the winter reserve margin that determines whether resources can be retired without replacement, right?

A At this moment, we are a, yes, a winter need.

Q Okay. Can you please turn to Florida -- PSC Exhibit 120, page C32-3577? And we may need to zoom in,

if possible.

I am just looking at the last row. So in the last row, can you see that TECO's winter reserve margins for 2024 through '27 are 30 percent, 23 percent, 23 percent and 22 percent?

MR. WAHLEN: Mr. Chairman, I think we have been over this ground two or three times now.

CHAIRMAN LA ROSA: We have been over this chart. Is this a different question from what was asked earlier?

MS. AMIEL: It was asked. I was just trying to lay a foundation for my next questions, but if everyone is familiar with it, I can also just move on to the next question.

CHAIRMAN LA ROSA: Let's do that.

MS. AMIEL: Okay. No problem.

BY MS. AMIEL:

Q So focusing on this 30-percent number for a second, would you agree it's unusual to have a reserve margin that high?

A No, it's not unusual. The reason why that number is that high is because I believe we, for reliability purposes, purchased some short-term PPAs for, like I said, reliability on the energy and fuel supply. That's just temporary. That's just a short --

so that's why you see that bump up, and then you see it low -- get back down to 23 percent in the next year.

Q Okay. TECO is operating on the assumption of a 20-percent reserve margin floor, correct?

A 20 percent, yes.

Q Yet, in some years, it's building -- it has far more capacity than that floor, right?

MR. WAHLEN: This has been covered two or three times, Mr. Chairman.

CHAIRMAN LA ROSA: I would agree.

MS. AMIEL: Okay. I will just ask one more reserve margin question, and then I can move on, if that's fine --

CHAIRMAN LA ROSA: Yes.

MS. AMIEL: -- that I believe hasn't been asked.

BY MS. AMIEL:

Q Okay. So a 30-percent reserve margin compared to, say, a 15-percent reserve margin makes is more difficult to retire older generation assets --

MR. WAHLEN: Asked and answered.

CHAIRMAN LA ROSA: It has been.

MS. AMIEL: Okay. So thank you. I will just move on to another topic, and we are close to the end of these questions.

BY MS. AMIEL:

Q So TECO is planning to add nearly 500 megawatts of new solar across its service territory by the end of 2026, right?

A Yes.

Q And you would agree that solar has no fuel costs, right?

A Correct.

Q In fact, you stated in your testimony that adding all of this future solar would save customers nearly $800 million in fuel costs over the lifetime of the projects, correct?

A Yes.

Q Solar plants also tend to have lower operation and maintenance costs than fossil plants, right?

A They do.

Q TECO's proposed solar generation will reduce electricity costs and reduce price volatility for TECO's ratepayers, right?

A Yes. Absolutely.

Q And you would agree that solar generators tend to be safer and conserve more water than fossil generators, right?

A Yes, I agree.

Q Once TECO constructs its proposed future solar

projects, solar will supply 17 percent of the energy on its system, right?

A Subject to check the year, yes.

Q Okay. And this will increase TECO's fuel diversity, right?

A Correct.

Q There is also fuel diversity from energy storage, right?

A Yes, some. Yes.

Q As well as from energy efficiency and demand response measures.

A I am not sure about that one.

Q Okay. But a number of these sources of energy can hedge against high gas prices, right?

A Yes. Absolutely.

Q TECO is planning to bring on-line four new storage units in the two-year period from 2025 through '27, right?

A Yes.

Q But TECO is plan is to bring only one new storage project, the 70-megawatt project coming on-line in 2028, in the six-year period from 2027 to 2033, right?

A That's what we are reflecting now. We have a integrated resource plan process that we execute every

year as part of the development of the Ten-Year Site Plan. And we are always looking for ways to optimize the portfolio in ways that creates value to customers, affordability. We look for reliability of the system. We look for many criteria, many objectives.

And to the extent that we find that more battery storage is cost-effective, it creates value for customers, it adds reliability and resiliency to the system, we would consider doing that. So it could change.

Q Okay. So there is no technical barrier blocking TECO from adding more than one project in that time period?

A No.

Q And as TECO brings on more energy storage, that storage can be paired with TECO's existing solar units, right?

A I am sorry. Repeat that question.

Q No problem.

As TECO brings on more energy storage that can -- that storage can be paired with TECO's existing solar generation, right?

A It could, but we are finding that it's most cost-effective to connect the storage to the grid, and optimizes charging so that it's the most economic way of

charging. It may not be from solar at this point.

Q Okay. Do you know how many of the new storage projects coming on-line are paired with the new solar projects, or existing ones?

A The ones coming on-line are all connected to the grid.

Q Okay. Thanks.

So when storage is paired with solar or just optimized to connect to the grid, energy storage can save power that's generated by solar units and return it to the grid at times of peak demand, right?

A It could if that's the lowest cost way to dispatch it.

Q Okay. Thanks.

The capacity credit of new energy storage units is 100 percent, right.

A Yes, for the proposed projects, it is.

Q So this means that new -- these new energy storage units are soon to provide 100 percent of their capacity at times of peak demand on TECO's system, right?

A Yes.

Q Okay. So if TECO brings on, say, more than one storage unit in this period from 2027 to 2033, would you predict that storage unit would also have the

100-percent capacity credit?

A It would need to be studied, but I can tell you that the capacity value of storage at some point, we are not there yet, it will start to decline also, not as drastic as solar, but it will decline. That's the whole concept of ELCC, effective load carrying capability.

Q Okay. TECO measures the capacity contributions or credits for at times of peak load as ranging from about 56 percent in the summer to lower, around maybe one or lower percent in the winter, is that right?

A Yes, that's right. It has decreased.

Q But the capacity credit of solar paired with energy storage would be higher than this, right?

A I think it will -- it will still be the same. You just have batteries also on the grid. That's another asset.

Q Okay. But if, for example, there were a storage unit that is paired with a solar unit, the capacity credit would be higher, right?

A Again, it depends. If --

Q Okay.

A -- if the portfolio was asking for a solar plus storage asset as one, together, it would create a higher capacity value, but that -- those are not the

type of projects we are looking at at this time.

Q Okay. Thanks.

Can you please look at your direct testimony on page 31. And just let me know when you are ready.

A I am there.

Q Thank you.

Can you please read lines one through, I believe it's 12, starting at public policy considerations and ending with the phrase, rule out that possibility?

A Can you point to me the row number?

Q Yes. It begins on line one, actually, on that page.

A Okay.

Q I believe it's on page 31 actually, and it's -- says -- begins with public policy considerations -- actually, it looks like it does start page three, so I'm sorry -- I mean on line three. So public policy considerations there on line three, and then extending to the -- rule out that possibility.

A Yes.

Public policy considerations and customer expectations in the United States and around the world are trending against carbon emissions and in favor of renewable energy like solar generation.

Q Thank you?

A It is difficult to predict when a carbon tax or fee will be imposed.

Q Thanks.

Okay. You would agree that it's possible a new environmental regulation could impose limits on carbon emissions, right?

A It's possible.

Q Emissions from coal combustion are more carbon intensive than gas, right?

A Yes.

Q And gas is more carbon intensive than solar, right?

A Yes.

Q If TECO were to consider avoided carbon costs in deciding on its generation mix, this would make fossil plants relatively more expensive than they would otherwise be, right?

MR. WAHLEN: Mr. Chairman, I think we have been very clear that we don't consider cost of carbon in our cost-effectiveness, and we are maybe on the second lap on this topic.

CHAIRMAN LA ROSA: Yeah. It's certainly a similar topic.

Let's do this, it's 10:20 almost. Let's take

a quick break for 10 minutes, and then we will jump back into questioning.

MS. AMIEL: Okay. Actually, I have two more questions.

CHAIRMAN LA ROSA: Okay. Then let's go with those two questions.

MS. AMIEL: Okay. Thank you.

Can I -- is it fine if I just reask -- do you want me to reask that question, or did you want me --

CHAIRMAN LA ROSA: Is it the question that you just asked before?

MS. AMIEL: It is. Yes.

CHAIRMAN LA ROSA: We have talked about that subject. I think the question was more related to policy. If there is a direct question in there, yes, I will allow it --

MS. AMIEL: Okay.

CHAIRMAN LA ROSA: -- but, you know, I don't want to keep on skirting around the same subject we just -- we have been chatting about.

MS. AMIEL: Okay. That makes sense. I will just ask this last question, and then I will just make it one question, if that's okay.

CHAIRMAN LA ROSA: Sure.

BY MS. AMIEL:

Q So if TECO were to -- if TECO were to consider avoided carbon costs in deciding on its generation mix, this would make fossil fuel plants relatively more expensive and renewables relatively more cost-effective, right?

A I am sorry. You said that very fast.

Q I know.

A Repeat it.

Q My apologies. Okay. I will say that more slowly.

So if TECO were to consider avoided carbon costs in deciding on its generation mix, that would make fossil fuel plants relatively more expensive and renewables relatively more cost-effective, right?

A It would make renewables more cost-effective, yes.

Q Okay. Thank you.

MS. AMIEL: No further questions.

CHAIRMAN LA ROSA: Great. Thank you.

Let's go ahead and jump into a 10-minute break and we will reconvene here at 10:30. Thank you.

(Brief recess.)

CHAIRMAN LA ROSA: All right. I think we can go ahead and jump back in our seats and get

rolling.

So where we left off was Sierra Club had just finished up with questions for Witness Aponte. So I will go to Florida Retail Federation.

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

CHAIRMAN LA ROSA: Okay. Thank you.

Walmart.

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

CHAIRMAN LA ROSA: Thank you.

Staff.

MR. SPARKS: Staff has no questions for Mr. Aponte. Thank you.

CHAIRMAN LA ROSA: Commissioners, do we have any questions for Mr. Aponte? Seeing no questions.

TECO, I will throw it back over to you for redirect.

MR. WAHLEN: Thank you.

FURTHER EXAMINATION

BY MR. WAHLEN:

Q Mr. Aponte, Mr. Moyle asked you a question about a particular solar project, and you indicated that with the increase in the production tax credit, the cost-effectiveness was better, do you remember that?

A Yes.

MR. MOYLE: I was going to object on asked and answered for my friend Mr. Wahlen.

CHAIRMAN LA ROSA: I am sure he appreciates that.

Go ahead and continue.

BY MR. WAHLEN:

Q If you applied the higher production tax credit to all of the solar projects that you are proposing, would their cost-effectiveness improve?

A Yes. Absolutely.

Q Thank you.

You were asked some questions about the South Tampa Resilience Project by the Office of Public Council, and they asked the question, well, if the federal government had presented, or paid some money towards the project, would it have improved the cost-effectiveness; do you remember that?

A I remember that.

Q The company is getting the land for that project for no cost, correct?

A That's correct.

Q If the company had to buy land, or lease land for that project, it would hurt the cost-effectiveness, wouldn't it?

A Yes, it would be very expensive or almost impossible to get.

Q So the fact that there is free land helps the cost-effectiveness of the project, correct?

A It helps a lot.

Q Okay. Thank you.

You were asked some questions about the company's winter reserve margin. I know you remember that. When the company calculates its winter reserve margin, does the company assume a particular temperature?

A Yes. That's correct. We do.

Q And what is that temperature?

A It's 31 degrees Fahrenheit.

Q Okay. Does the company do a sensitivity analysis around temperature for reserve margin?

A Yes.

Q Could we pull up master document F.1-74, please? It's part of CEL 226.

Is that the reserve margin that you were referring -- sensitivity that you were referring to?

A Yes, it is.

Q And what temperature does this assume?

A This is at 29 degrees.

Q Okay. So if the temperature is 29 degrees

instead of 31, what does the winter reserve margin look like in 2025?

A Well, it drops significantly to 17 percent.

Q And that's below the 20-percent, right?

A It is below.

Q Do you recall being asked about whether replacing the company's solid fuel assets was -- you were asked about whether the company did an analysis about replacing the company's solid fuel assets with solar and battery storage --

A Yes, I recall that.

Q -- do you remember that?

Would it be possible to cost-effectively replace the company's solid fuel capacity -- generating capacity with solar and energy storage?

A Possible -- I mean, it would be extremely expensive. I mean, to replace --

Q Would it be cost-effective?

A To replace the -- with any kind -- solid fuel units have the capability of running 24/7 around the clock for weeks. In the event that that fuel is the economic fuel, or in the event that we have a disruption with natural gas, those units can run for extended amounts of time. So to replace them with solar and battery storage would require a lot of solar and battery

storage. I am doing some mental math here. It's just going to not be cost-effective. It's going to be very expensive.

Q Okay. Thank you.

Mr. Bradley Marshall asked about your retirement analysis for Polk 1. Do you remember that?

A I do.

Q Did you do an analysis that showed the -- that compared the retirement of Polk 1 to the simple-cycle conversion of Polk 1?

A Yes.

Q And which was more cost-effective?

A The status quo option was the most expensive option. Retiring it in 2028 was a slight benefit to customers, but converting the unit to simple-cycle was the most cost-effective option.

Q Okay. One last series of questions.

There was a lot of talk about reserve margin and its role in the company's planning.

Are any of the generation additions that you are talking about being proposed solely to meet reserve margin requirements?

A Well, as I said earlier, the reserve margin criteria, it's a minimum 20 percent criteria, but to the extent we can add assets that enhance value to the

customer, affordability, fuel savings to the customer, fuel price mitigation, we would be comfortable with being slightly above the 20-percent because of the added benefit that it brings to the customer.

So not all the proposed additions are strictly due to reserve margin requirement contribution. Many of them are just additional value to customers.

I mentioned the $1.2 billion of fuel cost benefit of the portfolio. Part of that benefit comes from an asset that may not contribute to reserve margin, but it's an economic benefit to customers to do so.

Q Okay. Thank you very much.

MR. WAHLEN: Those are my questions.

CHAIRMAN LA ROSA: Great. Thank you.

Now, let's --

MS. CHRISTENSEN: Commissioner -- this is Patty Christensen with OPC. Mr. Wahlen had asked a question in redirect regarding a comment I made during my cross, but he went further afield, I think, of the topic that I covered. He asked about the use of the land for the South Tampa Resiliency Project, but I think there needs to be some additional information that needs to be ferreted out in cross, and I just have a few follow-up questions.

CHAIRMAN LA ROSA: Let me go to my advisors on this. Not typically something that I prefer to do.

MS. HELTON: Maybe we should hear from Mr. Wahlen first, Mr. Chairman.

CHAIRMAN LA ROSA: Let's do that.

MR. WAHLEN: I didn't think I was going beyond the scope of her cross-examination. If I did, it was inadvertent.

MS. HELTON: Mr. Chairman, unfortunately I wasn't here at the time. I mean, it's within your prerogative. Mr. Wahlen is supposed to stay within the scope of the cross-examination that is conducted by the parties, and I wasn't here, and I don't have an opinion on that. So it's really within your prerogative whether you think it's appropriate or not, but I could say that it is highly irregular in our practice to have further cross-examination after a party has taken their turn.

MS. CHRISTENSEN: Commissioner, I could propose the question I would ask and you can make your decision based on the question I would ask.

CHAIRMAN LA ROSA: Yeah, go ahead and propose it.

FURTHER EXAMINATION

BY MS. CHRISTENSEN:

Q And my question would be: How long does TECO have use of the federal land for the South Florida Tampa Resiliency Project, 30 or 35 years?

CHAIRMAN LA ROSA: Before you answer that question.

MR. WAHLEN: That's fine. She can ask that. I don't object.

CHAIRMAN LA ROSA: All right. Go ahead. You can -- you may answer that.

THE WITNESS: Yes, I believe it's 30 or 35 year.

MS. CHRISTENSEN: Thank you.

CHAIRMAN LA ROSA: Thank you.

Okay. Let's now move exhibits into the record. Let's start with TECO.

MR. WAHLEN: Thank you, Mr. Chairman.

Tampa Electric moves Exhibit 20 and 144 into the record.

CHAIRMAN LA ROSA: 20 and 144. Are there any objections to that?

Seeing none, show them entered into the record.

(Whereupon, Exhibit Nos. 20 & 144 were

received into evidence.)

CHAIRMAN LA ROSA: OPC.

MS. CHRISTENSEN: I would move 230 and, I believe, 226, but it may have already been moved in.

CHAIRMAN LA ROSA: Any objections to those exhibits?

MR. WAHLEN: No objection.

CHAIRMAN LA ROSA: Okay. Show them entered into the record.

(Whereupon, Exhibit Nos. 226 & 230 were received into evidence.)

CHAIRMAN LA ROSA: LULAC.

MR. MARSHALL: We have a list here.

CHAIRMAN LA ROSA: Just read them slowly so everyone else can digest them.

MR. MARSHALL: Exhibits 545, 552, 557, 582 through 589, 591, 605, 633, 637 and 707.

MR. WAHLEN: No objections.

CHAIRMAN LA ROSA: No objections?

Thank you. Show them entered into the record.

(Whereupon, Exhibit Nos. 545, 552, 557, 582-589, 591, 605, 633, 637 & 707 were received into evidence.)

CHAIRMAN LA ROSA: Sierra Club.

MR. SHRINATH: Sierra moves to -- moves Exhibit 804 into the record.

MR. WAHLEN: No objection.

CHAIRMAN LA ROSA: Seeing none, show them entered into the record.

(Whereupon, Exhibit No. 804 was received into evidence.)

CHAIRMAN LA ROSA: Any other exhibits? See none.

Mr. Aponte, you are excused.

THE WITNESS: Thank you, Commissioners. I appreciate it.

CHAIRMAN LA ROSA: Thank you.

(Witness excused.)

CHAIRMAN LA ROSA: I will throw it back over to TECO -- in fact, before I do that, let me just kind of just do some housekeeping here.

I am still planning to break at 12 o'clock. I know there is some discussions on some of the witnesses. I still, of course, encourage that.

What I would like to do this afternoon, later this afternoon, is at six o'clock until 6:30 is have kind of a brief dinner break, and then we will continue after that, so after the 6:30 hour until nine o'clock or so. So just like we -- just to

make sure we all have an understanding of the scheduling. It's somewhat early now, so we will see how the rest of the day goes, but I just wanted to give you guys a heads-up for anyone that's got to make any plans or thoughts, or whatnot, of course, lunch hour will hopefully give you enough time to do anything additional. So again, still planning to break at 12:00.

(Transcript continues in sequence in Volume 6.)

CERTIFICATE OF REPORTER

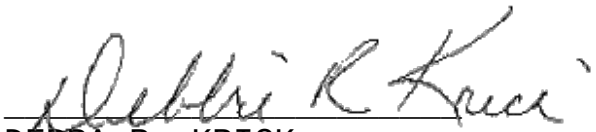
STATE OF FLORIDA)
COUNTY OF LEON)

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 videotaped 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 30th day of September, 2024.



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