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July 2, 2024

ELECTRONIC FILING

Mr. Adam J. Teitzman, Commission Clerk
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

In re: Petition for Rate Increase by Tampa Electric Company

DOCKET NO. 20240026-EI

In re: 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

Dear Mr. Teitzman:

Attached for filing on behalf of Tampa Electric Company in the above-referenced docket is the Rebuttal Testimony of Jose Aponte and Exhibit No. JA-2.

Thank you for your assistance in connection with this matter.

(Document 3 of 14)

Sincerely,

J. Jeffry Wahlen

cc: All parties

JJW/ne
Attachment



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**

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

REBUTTAL TESTIMONY

OF

JOSE APONTE

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

8
9 **A.** My name is Jose Aponte. My business address is 702 North
10 Franklin Street, Tampa, Florida 33602. I am employed by
11 Tampa Electric Company ("Tampa Electric" or the
12 "company") as the Manager Resource Planning.

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

16
17 **A.** Yes. I am.

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

22
23 **A.** No.

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

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

2

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

7

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

12

13 Third, I will address the arguments made by Sierra Club
14 witness Devi Glick regarding the conversion of Polk Unit
15 1 to simple cycle operation being an uneconomic endeavor.

16

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

21

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

24

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

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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.

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

5
6 A. No. As I explained on page 32 of my direct testimony,
7 Tampa Electric tested the Cumulative Present Value
8 Revenue Requirement ("CPVRR") savings calculated in its
9 analyses using high and low fuel price forecast
10 sensitivities. The company also performed sensitivity
11 analyses for variations in capital cost and unit
12 performance. No party to this proceeding asked for these
13 fuel price sensitivity analyses through discovery.
14 However, I am providing these sensitivities in Document
15 Nos. 1 and 2 of Rebuttal Exhibit JA-2.

16
17 Q. Please describe the sensitivity analysis for fuel cost
18 assumptions.

19
20 A. Tampa Electric tested the CPVRR savings calculated in its
21 analysis using high and low fuel price forecasts
22 sensitivities. The high and low fuel forecasts were
23 prepared contemporaneously with the base fuel forecast.
24 Results of the low fuel forecast sensitivity shows an
25 overall CPVRR savings to customers of approximately \$51

1 million for the proposed solar projects, while the high
2 fuel forecast sensitivity shows an overall CPVRR savings
3 to customers of approximately \$428 million. The results
4 of these fuel price sensitivities are included as Document
5 Nos. 1 and 2 in my Rebuttal Exhibit JA-2. The CPVRR
6 benefit to customers is even greater if the potential
7 value of CO₂ reductions is included. The Future Solar
8 projects are cost-effective with or without consideration
9 of future carbon pricing.

10
11 **Q.** Did the company perform a sensitivity analysis for capital
12 cost assumptions?

13
14 **A.** Yes, during the initial stages of the project planning.

15
16 The Future Solar Projects remain cost effective even if
17 the capital cost assumptions are higher. The portfolio of
18 future solar projects would still be favorable to
19 customers even if the \$1,609 average dollar per kilowatt
20 cost of the projects increased by 10 percent under the
21 base fuel price scenario. This demonstrates the Future
22 Solar Projects' resilience against cost fluctuations.

23
24 Tampa Electric has a high level of confidence in its
25 capital cost estimates. The company has extensive

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

6
7 Additionally, the company has contracts and agreements in
8 place for major equipment purchases like modules,
9 inverters, GSUs, rackers, and tracking systems, which
10 provides assurances that the cost assumptions used for
11 the proposed future solar projects are sound and
12 reasonable.

13
14 **Q.** Did the company perform sensitivity analyses for unit
15 performance?

16
17 **A.** Yes. Tampa Electric projects that the Future Solar units
18 will have on average, an annual net capacity factor of 26
19 percent. The company performed a sensitivity in the cost-
20 effectiveness analyses where new solar projects started
21 with a lower capacity factor during the first full year
22 of operation, then increased by 1 percent per subsequent
23 year until achieving the design specification capacity
24 factor by year five.

25

1 To illustrate the impact of excluding this conservative
2 assumption in the cost-effectiveness analyses, the
3 company performed a cost effectiveness test without it.
4 The results of this sensitivity reflected an increase of
5 \$36.3 million in savings to customers under the base fuel
6 price scenario, for a total projected benefit of \$201.6
7 million. The result of the sensitivity analysis is
8 included in Document No. 3 of my Rebuttal Exhibit JA-2.

9
10 The company also performed a sensitivity analysis
11 incorporating a 0.4 percent degradation per year until
12 the end of the project's useful life.

13
14 Both conservative assumptions have already been
15 incorporated into the cost-effectiveness analyses
16 presented in my direct testimony.

17
18 **Q.** What role did these sensitivity analyses play in the
19 company's decision to proceed with the Future Solar
20 projects?

21
22 **A.** The company takes a conservative approach to evaluating
23 the cost-effectiveness of new generation projects. Tampa
24 Electric made the decision to move forward with the Future
25 Solar projects based on cost-effectiveness analyses that

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

6
7 **Q.** Are the net present value benefits of the Future Solar
8 Projects based on a speculative carbon adder, as
9 represented by Mr. Ly?

10
11 **A.** No. The company's proposed portfolio of Future Solar
12 Projects are cost effective even without including any
13 benefits from reduced carbon emissions. This is
14 illustrated in Document No. 11 in Exhibit No. JA-1, which
15 was included with my direct testimony.

16
17 As I explained on page 31 of my direct testimony, it is
18 impossible to rule out the possibility that a carbon tax
19 or fee will be imposed. As a result, it is reasonable for
20 the company to provide an analysis to illustrate the
21 potential value of avoided carbon costs when evaluating
22 the cost-effectiveness of generating alternatives,
23 including our Future Solar Projects. The inclusion of a
24 carbon adder in the cost-effectiveness analyses for the
25 Future Solar Projects was for informational purposes but

1 provides a realistic estimate of the Future Solar
2 Projects' value in the event future carbon emission costs
3 are imposed.
4

5 **II. COST-EFFECTIVENESS OF THE SOUTH TAMPA RESILIENCE PROJECT**

6 **Q.** Florida Rising and LULAC witness Mr. Rábago recommends
7 the Commission disallow recovery for the South Tampa
8 Resilience Project in part because it lacks the support
9 of a benefit cost analysis. Do you agree with this
10 recommendation?
11

12 **A.** No. Tampa Electric completed a cost-effectiveness
13 analysis for the South Tampa Resilience Project, which I
14 provided as Document No. 5 in Exhibit JA-1 along with my
15 direct testimony.
16

17 As shown in Document No. 5, the South Tampa Resilience
18 Project has a projected benefit to customers of
19 approximately \$10 million CPVRR excluding any benefit
20 from the value of reduced emissions and \$137.9 million in
21 fuel savings. If the potential value for reduced CO₂
22 emissions is included, the CPVRR benefit to customers is
23 estimated to be even higher.
24

25 In addition to these economic benefits, the South Tampa

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

14
15 **III. CONVERSION OF POLK UNIT 1 TO SIMPLE CYCLE OPERATION**
16 **(POLK 1 FLEXIBILITY PROJECT)**

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

20
21 **A.** No. As reflected in the Polk 1 Flexibility Cost-
22 Effectiveness Test provided in my direct testimony
23 Exhibit JA-1, Document No. 4, the conversion of Polk Unit
24 1 to a simple-cycle combustion turbine ("CT") reflects a
25 customer benefit of approximately \$166.9 million CPVRR,

1 excluding any benefit from the value of reduced emissions.
2 If the potential value for reduced CO₂ emissions is
3 included, the CPVRR benefit to customers is estimated to
4 be even higher.

5
6 This project is not only economic for our customers but
7 also increases the flexibility within our system.
8 Operating Polk Unit 1 as a simple cycle CT will allow for
9 faster starts, quicker ramp rates, shorter up/down times,
10 and lower turndowns enabling Tampa Electric to better
11 optimize the utilization of the rest of the portfolio's
12 assets.

13
14 **Q.** Do you agree with Ms. Glick's conclusion that the Polk 1
15 Flexibility Project is expected to have a negative net
16 present value revenue requirement?

17
18 **A.** No. As a preliminary matter, Ms. Glick did not provide
19 her calculation, and we have not been able to recreate it
20 solely from the discovery responses she cites in her
21 testimony.

22
23 I do agree that the project has a negative CPVRR
24 differential; however, the negative CPVRR indicates the
25 project provides savings to customers. The negative CPVRR

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

6
7 These calculations are shown in the cost-effectiveness
8 tests included in my Exhibit JA-1, Document No. 4, which
9 is presented as differentials. They are derived by taking
10 the total CPVRR of a resource plan that includes the Polk
11 1 Flexibility Project and then subtracting the total CPVRR
12 of a resource plan without the Polk 1 Flexibility Project
13 (the reference case).

14
15 **IV. OPERATIONAL IMPACTS OF FUTURE SOLAR PROJECTS**

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

23
24 **A.** No. Tampa Electric's changes to lower time of use rates
25 during daylight hours merely reflect the lower marginal

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

6
7 With respect to operational challenges of solar, there
8 can be challenges when the output of solar ramps up more
9 quickly or ramps down more quickly than expected, or when
10 the demand is being mostly met by solar resources during
11 daylight hours. This can lead to possible curtailment of
12 excess solar and having thermal generating resources
13 either offline and/or operating at their minimum, less
14 efficient levels. But that is independent of the overall
15 change to cost periods for time of use.

16
17 Incentivizing higher energy usage during high load
18 conditions help minimize the dispatch challenges
19 encountered by the company's grid operators during the
20 transition into non-daylight hours by keeping low-cost
21 thermal units online, avoiding shutdown and startup
22 costs, and enabling a better utilization of these low-
23 cost thermal assets at higher efficiency operating
24 levels.

25

1 **V. SUMMARY**

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

3
4 **A.** My rebuttal testimony addressed the statements made by
5 witnesses Ly, Rábago and Glick.

6
7 First, I demonstrated that the company's cost-
8 effectiveness tests for the proposed solar projects are
9 supported by robust analysis, with a projected CPVRR
10 savings to customers of approximately \$165.3 million,
11 excluding any value from reduced carbon emissions.

12
13 Second, I explained that a cost effectiveness analysis
14 for the South Tampa Resilience Project was included in my
15 direct testimony, and the cost effectiveness analysis
16 indicated this project will save customers approximately
17 \$10.0 million in CPVRR.

18
19 Third, I provided clarification to demonstrate that the
20 negative CPVRR differentials in the company's cost
21 effectiveness tests on my Exhibit No. JA-1, including that
22 of the Polk 1 Flexibility Project of approximately \$166.9
23 million, represent the projected savings to customers.

24
25 Finally, I refuted FIPUG witness Pollock's erroneous

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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.

TAMPA ELECTRIC COMPANY
DOCKET NO. 20240026-EI
WITNESS: APONTE

REBUTTAL EXHIBIT

OF

JOSE APONTE

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Low Fuel Forecast

Solar Cost-Effectiveness Test

Low Fuel Forecast	Cost/ (Savings) (2024 US \$ millions)
Capital RR - New Solar Units	\$735.5
Capital RR - Balance of System*	\$0.0
PTC Benefit	(\$252.4)
RR Land for Solar	\$30.1
Land Lease	\$34.8
System FOM	\$133.9
System VOM	(\$51.1)
System Fuel	(\$685.1)
Start Costs	\$3.6
Sub Total w/o CO ₂ Emissions	(\$50.6)
CO ₂ Emissions Cost / (Savings)	(\$156.8)
Total w/ CO ₂ Emissions	(\$207.4)

* Capital RR - Balance of System includes new and/or avoided generation, transmission, and interconnect capital.

High Fuel Forecast
Solar Cost-Effectiveness Test

High Fuel Forecast	Cost/(Savings) (2024 US \$ millions)
Capital RR - New Solar Units	\$735.5
Capital RR - Balance of System*	\$0.0
PTC Benefit	(\$252.4)
RR Land for Solar	\$30.1
Land Lease	\$34.8
System FOM	\$133.9
System VOM	(\$50.6)
System Fuel	(\$1,062.6)
Start Costs	\$3.3
Sub Total w/o CO ₂ Emissions	(\$428.0)
CO ₂ Emissions Cost /(Savings)	(\$158.0)
Total w/ CO ₂ Emissions	(\$586.0)

* Capital RR - Balance of System includes new and/or avoided generation, transmission, and interconnect capital.

Solar Cost-Effectiveness Test

Capacity Factor Sensitivity

Base Fuel Forecast	Cost/(Savings) (2024 US \$ millions)
Capital RR - New Solar Units	\$735.5
Capital RR - Balance of System*	\$0.0
PTC Benefit	(\$267.1)
RR Land for Solar	\$30.1
Land Lease	\$34.8
System FOM	\$133.9
System VOM	(\$53.6)
System Fuel	(\$818.4)
Start Costs	\$3.2
Sub Total w/o CO ₂ Emissions	(\$201.6)
CO ₂ Emissions Cost /(Savings)	(\$157.7)
Total w/ CO ₂ Emissions	(\$359.4)

* Capital RR - Balance of System includes new and/or avoided generation, transmission, and interconnect capital.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that copies of the foregoing rebuttal testimony and exhibit have been served by posting on a shared document site, hand delivery of a USB drive or by electronic mail on this 2nd day of July, 2024 to the following:

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