AUSLEY MCMULLEN

ATTORNEYS AND COUNSELORS AT LAW

123 SOUTH CALHOUN STREET
P.O. BOX 391 (ZIP 32302)
TALLAHASSEE, FLORIDA 32301
(850) 224-9115 FAX (850) 222-7560

October 19, 2017

VIA: ELECTRONIC FILING

Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Petition for approval of conservation street and outdoor lighting conversion program, by Tampa Electric Company; FPSC Docket No. 20170199-EI

Dear Ms. Stauffer:

Attached are Tampa Electric Company's responses to Staff's Data Requests Nos. 1-24, excluding responses to Data Request Nos. 1, 3, 13 and 19 which are being hand delivered on a CD via separate cover letter.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

JDB/pp
Attachment

cc: Walt L. Trierweiler (w/attachment)

1. Provide the charts included in Exhibit A, in electronic (Excel) format with formulas intact

A. The charts Tampa Electric provided as Exhibit A are included in the accompanying Excel spreadsheet files in CD format with formulas intact.

2. Please provide supporting documentation demonstrating how each factor was calculated in the company's cost-effectiveness analysis inputs presented on Exhibit A, page 5.

A. The summer and winter demand savings and annual energy savings were developed using the following information as outlined in the proposed program description. Street and outdoor lights have an operating schedule in which the lights come on at dusk and turn off at dawn. Because of this operating schedule, street and outdoor lighting will have no summer demand savings. The street and outdoor lighting will have winter demand savings which occurs at 7am during winter hours. The winter demand savings was derived by taking the power reduction between the wattage of the existing luminaire and comparing it with the wattage of the replacement Light Emitting Diode ("LED") luminaire. The annual energy savings was derived by taking the annual night time hours as provided by the United States Naval Observatory for the Tampa area and multiplying it by the wattage difference to provide the annual energy saved per luminaire.

To perform the cost-effectiveness tests, Tampa Electric took these demand and annual energy savings values and used the results of the latest 2017 update to the cost-effectiveness model which included using 2016 actuals as directed by the Commission in responding to the Staff's 1st set of interrogatories, Interrogatory No. 1, which was filed with the Commission on July 31, 2017 within Docket No. 20170002-EG.

3. Please provide supporting documentation on how the unamortized depreciation capture value was determined.

A. The unamortized depreciation values were determined using a combination of data from the company's internal reports for a count of actively billing non-LED luminaires and net book value data from the power plant application in addition to a count of total non-LED luminaires in the field. All values were calculated from current data. The documentation providing the support for how Tampa Electric derived the unamortized depreciation capture value of $37,780,595 as of August 31, 2017 is attached on the accompanying Excel spreadsheet files in CD format.

4. Please explain whether the company has sought to recover remaining unamortized costs in rate base for any other assets within the last ten years. For each type of asset, please specify through what mechanism the company sought this recovery (base rates, fuel clause, etc.), and in what proceeding recovery was approved.

A. While the company has not sought to recover the remaining unamortized costs in rate base for other assets, which is similar to what is being proposed in the Street and Outdoor Lighting Conversion Program, it has requested and been granted accelerated recovery schedules associated with assets within the past ten years.

In Docket No. 120153-EI Tampa Electric sought fuel clause recovery of certain assets to implement a fuel conversion project at the Polk 1 Integrated Gasification Combined Cycle ("IGCC") unit. The recovery schedule was for five years and dependent on reduced fuel costs. Order No. PSC-12-0498-PAA-EI authorized this recovery schedule.

In Docket No. 140032-EI Tampa Electric sought fuel clause recovery of certain assets to implement a fuel conversion project at the Big Bend Power Station Units 1 through 4. The recovery schedule was for five years and dependent on reduced fuel costs. Order No. PSC-14-0309-PAA-EI authorized this recovery schedule.

The recovery schedules in both these cases are linked, to the greatest extent possible, to the cost recovery with the benefits received. These approaches are similar to what is being asked for in the Street and Outdoor Lighting Conversion Program petition in regard to the recovery schedule for the luminaires being converted along with the associated demand and energy savings that will be realized from the conversion.

As noted in the petition in this docket, paragraph 9, the Commission has authorized accelerated recovery of just this sort of lighting conversion program as a conservation program in Docket No. 19800701-EG. Tampa Electric has previously provided Commission Staff with documents associated with that docket.

5. Please specify where in Rule 25-17.008, Florida Administrative Code, recovery of unamortized depreciation capture is included in the cost-effectiveness analysis.

A. Rule 25-17.008, Florida Administrative Code does not identify any specific cost-effective analysis nor itemized costs or benefits that may be included in such an analysis. However, the rule does point to the publication "Florida Public Service Commission Cost Effectiveness Manual For Demand Side Management Programs and Self-Service Wheeling Proposals".

With respect to the analysis described in that Manual, Tampa Electric believes that unamortized depreciation capture can be included in the cost-effectiveness analysis as it has been done in the past and approved by the Commission. The Street and Outdoor Lighting Conversion Program being proposed is no different than an end use customer seeking a request for a customized rebate. The customer can submit a plan for the project and the project will be evaluated for cost-effectiveness. Tampa Electric in this situation, as has been done before with a lighting conversion program, is seeking to recover the unamortized depreciation which would be analogous to a customer getting paid an incentive to incent the customer to move forward with a cost-effective DSM project.

6. Would the Company move forward with the change in its tariffs proposed in Docket 20170198-EI, if the proposed DSM program is denied. If so, why? If not, why not?

A. The proposed tariffs were developed as the vehicle for implementing the proposed program. In the absence of the proposed program, which provides cost recovery for the unrecovered investment in existing lighting assets, the Company would have contemplated different timing and sequencing for the conversion to LED lighting, which would have resulted in tariffs that are different than those proposed in this docket.

Because of the dynamics of the lighting market as explained in paragraphs 3, 5, 6 and 7 of the petition filed in companion Docket No. 20170198-EI, Tampa Electric strongly believes that now is the time for broad scale conversion to LED lighting. By conducting this street and outdoor lighting conversion program now, the company will be able to continue to offer a marketable and reasonably priced lighting service to Tampa Electric customers. Moreover, the proposed conversion is consistent with the goals annunciated in the Florida Energy Efficiency and Conservation Act (FEECA). In passing the FEECA, the Florida Legislature found and declared in Section 366.81, Florida Statutes, that

> . . . it is critical to utilize the most efficient and cost-effective demand-side renewable energy systems and conservation systems in order to protect the health, prosperity, and general welfare of the state and its citizens. Reduction in, and control of, the growth rates of electric consumption and of weather-sensitive peak demand are of particular importance.

The Legislature's also expressed that the provisions in FEECA are

> . . . to be liberally construed in order to meet the complex problems of reducing and controlling the growth rates of electric consumption and reducing the growth rates of weather-sensitive peak demand; increasing the overall efficiency and cost-effectiveness of electricity . . .

7. Please specify if participation in the proposed DSM program is voluntary or mandatory and please explain your response.

a. If participation is mandatory, please explain how the program qualifies as a demand-response program.

A. The proposed conservation Street and Outdoor Lighting Conversion Program is a voluntary program. There are no building codes, appliance standards, Federal or State legislative requirements requiring Tampa Electric to move forward with this proposed Street and Outdoor Lighting Conversion Program. Existing or prospective new lighting customers may install their own lighting equipment should they desire to do so.

The proposed program is no different than an end use customer seeking request for a customized rebate. The customer can submit a plan for the project, even if this project is approved it does not make it mandatory for the customer to change out each item that was proposed in the approved project plan. The financial incentive actually paid to the customer is based upon what is actually installed. This proposed Street and Outdoor Lighting Conversion Program is no different, the actual unamortized depreciation capture would be based solely upon the actual luminaires that are changed out to qualifying LED luminaires as specified in the proposed program standards. Tampa Electric believes that the company will change out each of the non-LED luminaires as identified in the proposed conversion plan as each luminaire brings an attractive amount of winter demand savings and annual energy savings that is cost-effective based upon the Commissions cost-effectiveness test guidance.

8. Please specify what monetary incentives, if any, are provided to customers by the company through this program, excluding the energy and demand savings of the device.

A. The incentive included with this program is to only capture the unamortized depreciation value that is remaining on the non-LED luminaires eligible for replacement under this proposed program. The proposed program is cost-effective under the RIM test with a score of 1.05. With this score above 1.00, there is room for an incentive to be paid, Tampa Electric would view offering a rebate in addition to the unamortized depreciation value capture back to the company to be highly inappropriate. There are no monetary incentives provided to end use customers with this proposed program.

9. Please refer to Exhibit B. Please explain the inclusion of a 10 percent field inspection rate for equipment to be installed by TECO, instead of equipment reported by customers. As part of your response, explain whether TECO typically performs field verification of its own equipment.

a. Please specify whether this verification would require any administrative costs, and if so, where those are included in the cost-effectiveness analysis for this program.

A. If approved, Tampa Electric's Energy Management Services team would perform verifications to ensure that the Metal Halide ("MH") and High Pressure Sodium ("HPS") luminaires are being replaced with the LED luminaires that were identified in the proposed project. The purpose of these verifications is to ensure that the demand and annual energy savings that are reported to the Commission are accurate. The LED luminaires being installed to replace the existing MH and HPS luminaires have bar codes which will make the actual verification very easy to perform and should not require any administrative costs. If issues are found during these verifications, any time required for follow-up or correction will not be charged to the Energy Conservation Cost Recovery ("ECCR") Clause.

10. Please refer to paragraph 5 of the petition. Provide an estimated monthly residential rate impact ($/1200-kwh-mo) of the proposed DSM program.

A. The estimated monthly residential rate impact for the proposed DSM program, based upon the usage of 1,200 kWh during a month, is $0.533 or 53.3 cents.

11. Please refer to Exhibit A of the petition, page 2. Explain the basis of the assumed participation rates.

A. The participation rate was based upon completing the project over a five-year period. The company, if the proposed program is approved, will commence with the conversion of the street and outdoor lights shortly after approval.

12. Are any customers receiving lighting service located outside of TECO's service area? If so, please specify how many.

A. Tampa Electric does not serve any customers lighting service outside of the company's service area.

13. Please refer to paragraph 12 of the petition. The company notes that $50,000 would be spent on an advertising/communications campaign.

a. Is the company seeking cost recovery of these funds through the ECCR? Please explain.

b. If the response to (a) is yes, please identify where in its cost-effectiveness analysis this value was included.

c. If the response to (a) is yes, please provide a copy of the cost-effectiveness analysis including it.

A.

a. Yes, the company would seek recovery of these funds through the ECCR.

b. The advertising/communication costs for this program was not included in the cost-effectiveness test because the messaging would also include messaging that would bring more call to action of all of the other Commission approved DSM programs that the company offers to customers.

c. Tampa Electric has included a version of the cost-effectiveness analysis which includes the costs of the advertising campaign assuming the advertising dollars would be spent solely on the proposed program. Tampa Electric has included in CD format, a version of the cost-effectiveness analysis in the accompanying Excel spreadsheet. Adding the additional $250,000 and spreading it across the 209,821 luminaires increases the utility cost per fixture to $181.25 The cost-effectiveness results for this change are as follows:

RIM: 1.04
TRC: 2.15
PCT: 61,884

14. Please provide an annual and cumulative comparison of the company's current FEECA goals and the savings of the proposed program.

A. Below is the 2015 and 2016 annual and cumulative comparison of the summer kilo-Watts ("SkW"), winter kilo-Watts ("WkW") and annual energy in Giga-Watt hours ("GWh") toward the company's current accomplishments toward the FEECA goals at the generator:

2015 Annual FEECA Goals			
2015 Residential Goals			**Actual Residential DSM Achieved**
SkW:	1.1 MW		SkW: 10.8 MW
WkW:	2.6 MW		WkW: 12.3 MW
AE:	1.8 GWh		AE: 21.2 GWh
2015 Commercial Goals			**Actual Commercial DSM Achieved**
SkW:	1.7 MW		SkW: 11.7 MW
WkW:	1.2 MW		WkW: 8.1 MW
AE:	3.9 GWh		AE: 12.5 GWh
2015 Combined Goals			**Actual Combined DSM Achieved**
SkW:	2.8 MW		SkW: 22.5 MW
WkW:	3.8 MW		WkW: 20.4 MW
AE:	5.7 GWh		AE: 33.7 GWh
2016 Annual FEECA Goals			
2016 Residential Goals			**Actual Residential DSM Achieved**
SkW:	1.6 MW		SkW: 5.1 MW
WkW:	4.1 MW		WkW: 7.7 MW
AE:	3.5 GWh		AE: 13.2 GWh
2016 Commercial Goals			**Actual Commercial DSM Achieved**
SkW:	2.5 MW		SkW: 4.4 MW
WkW:	1.3 MW		WkW: 2.9 MW
AE:	6.0 GWh		AE: 17.8 GWh
2016 Combined Goals			**Actual Combined DSM Achieved**
SkW:	4.1 MW		SkW: 9.5 MW
WkW:	5.4 MW		WkW: 10.6 MW
AE:	9.5 GWh		AE: 31.0 GWh

Below is the 2015-2024 annual and cumulative Commission approved DSM goals for Tampa Electric Company:

2015 - 2024
Approved Residential DSM Goals
(At the Generator)

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2015	1.1	1.1	2.6	2.6	1.8	1.8
2016	1.6	2.7	4.1	6.7	3.5	5.3
2017	2.2	4.9	5.2	11.9	4.8	10.1
2018	2.7	7.6	6.5	18.4	6.1	16.2
2019	3.1	10.7	7.6	26.0	6.9	23.1
2020	3.3	14.0	7.6	33.6	7.4	30.5
2021	3.3	17.3	8.0	41.6	7.7	38.2
2022	3.0	20.3	7.4	49.0	6.9	45.1
2023	2.9	23.2	6.8	55.8	6.3	51.4
2024	2.5	25.7	6.1	61.9	5.5	56.9

2015 - 2024
Approved Commercial/Industrial DSM Goals
(At the Generator)

	Summer Demand (MW)		Winter Demand (MW)		Annual Energy (GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2015	1.7	1.7	1.2	1.2	3.9	3.9
2016	2.5	4.2	1.3	2.5	6.0	9.9
2017	2.7	6.9	1.6	4.1	8.0	17.9
2018	3.3	10.2	1.7	5.8	9.2	27.1
2019	3.3	13.5	1.6	7.4	9.9	37.0
2020	3.5	17.0	1.7	9.1	10.3	47.3
2021	3.6	20.6	1.9	11.0	10.4	57.7
2022	3.3	23.9	1.9	12.9	10.2	67.9
2023	3.5	27.4	1.8	14.7	9.9	77.8
2024	3.2	30.6	1.7	16.4	9.6	87.4

2015 - 2024 Approved Combined Goals (At the Generator)						
	Summer Demand		Winter Demand		Annual Energy	
	(MW)		(MW)		(GWh)	
Year	Incremental	Cumulative	Incremental	Cumulative	Incremental	Cumulative
2015	2.8	2.8	3.8	3.8	5.7	5.7
2016	4.1	6.9	5.4	9.2	9.5	15.2
2017	4.9	11.8	6.8	16.0	12.8	28.0
2018	6.0	17.8	8.2	24.2	15.3	43.3
2019	6.4	24.2	9.2	33.4	16.8	60.1
2020	6.8	31.0	9.3	42.7	17.7	77.8
2021	6.9	37.9	9.9	52.6	18.1	95.9
2022	6.3	44.2	9.3	61.9	17.1	113.0
2023	6.4	50.6	8.6	70.5	16.2	129.2
2024	5.7	56.3	7.8	78.3	15.1	144.3

Below is the savings at the generator from the proposed program:

PROGRAM NAME: STREET AND OUTDOOR LIGHTING CONVERSION						
AT THE GENERATOR						
Year	Per Luminaire kWh Reduction	Per Luminaire Winter kW Reduction	Per Luminaire Summer kW Reduction	Total Annual GWh Reduction	Total Annual Winter MW Reduction	Total Annual Summer MW Reduction
2017	609	0.142	0.000	2.139	0.497	0.000
2018	609	0.142	0.000	27.804	6.463	0.000
2019	609	0.142	0.000	53.469	12.428	0.000
2020	609	0.142	0.000	79.135	18.393	0.000
2021	609	0.142	0.000	104.800	24.359	0.000
2022	609	0.142	0.000	127.867	29.720	0.000
2023	609	0.142	0.000	127.867	29.720	0.000
2024	609	0.142	0.000	127.867	29.720	0.000

15. Based on the purported benefits of LED lights and the statement that cities and communities have a strong desire for the conversion to LED lights as described in paragraph 11 of the petition, please explain any disincentives in the current market environment for the conversion that necessitate this program, and how the program provides incentives or removes disincentives for the conversion to LED lights.

A. Tampa Electric has monitored LED luminaires and has seen the technology evolve and mature. The main disincentives to conversion has always been the high capital cost of LED versus the lower capital cost associated with existing non-LED luminaires. In the current market, that disincentive has changed as LED capital costs have decreased to a point where the overall lifecycle costs, which include maintenance and subsequent replacement upon failure, now make LED a comparable alternative to a non-LED street or outdoor light. Another facet is lighting manufacturers are switching production to LED street and outdoor light technologies so eventually, non-LED street and outdoor lights and supporting components will become unavailable.

Other disincentives that have prevented LED street and outdoor lights from being an alternative has been their color temperature. Until recently, LED luminaires have only been available in the cool color temperature which appears as a bright white light. This bright white light has been a very strong disincentive to install these lights in neighborhood areas. Now LED's come in a variety of color temperatures which can be a direct replacement of a non-LED that operates in the warmer color temperatures.

Tampa Electric believes that demand for conversion to LED street and outdoor luminaires will increase as these LED products will also demonstrate to customers of the potential uses of this energy and demand savings technology.

In addition to saving energy and demand across Tampa Electric's electrical system, municipal customers that Tampa Electric provides lighting services to will see improvements in roadway safety. LED street and outdoor luminaires are better able to minimize light pollution as they are directional in nature and can be controlled. LED luminaires also provide superior color rendering index which when combined with the color temperature will aid in reducing roadway glare, improving night-time visibility and contribute to reducing roadway incidents.

16. Please refer the Participant's Test results included in Exhibit A, page 7. Please specify whether the Participant's Test conducted here is representative of the change in tariffs proposed by the Company in Docket 20170198-EI.

A. No, the participant costs test results included in Exhibit A, page 7 follows the Commission prescribed methodology for conducting cost-effectiveness tests. It utilizes the existing tariffs in which the current lighting customers pay. The proposed Street and Outdoor Lighting Conversion Program is asking for the recovery of the unamortized depreciation that exists only on the existing MH and HPS luminaires.

17. Please specify if all participants for this program would receive a rate impact benefit. If not, please specify how many would have rate increases, and how many would have no change in rates.

A. As shown in Exhibit D attached to the petition in Docket No. 20170198-EI, out of some 209,821 lighting units as of the date of the data contained therein, 90 percent are proposed to have no change in bills, 5 percent are proposed to have a lower bill and 5 percent are proposed to have a slightly higher bill at the start of the program. As clause rates change over time, this ratio is likely to change. With respect to all of Tampa Electric customers, even those that are not participating, a benefit (due to the RIM cost- effectiveness score being above 1.00) will with approval of this program by the Commission place downward pressure on the company's rates.

18. For each class of lighting, please provide the amount paid under the company's existing tariffs, the proposed amount to be paid under the proposed tariffs, the estimated savings/(costs) per participant, the estimated number of participants, and the total savings/(costs) by class

A. The company included this information as Exhibit D within Document number 07543-2017 filed on September 5, 2017 the petition for a street and outdoor lighting conversion program that is within Docket No. 20170198.

19. Please refer to Exhibit A of the petition, page 5.

a. Please explain the reason supporting the use of the specific escalation factor.
b. Please explain the reason for using $180.00 for utility non-recurring program cost per customer instead of $180.06.
c. Please provide a version of the cost-effectiveness analysis without an escalation factor using $180.06 for utility non-recurring cost.

A.

a. The company typically rounds the values to whole dollar amounts when inputting the cost values when running cost-effectiveness evaluations. There is no escalation factor being used.

b. The company typically rounds the values to whole dollar amounts when inputting the cost values when running cost-effectiveness evaluations.

c. Tampa Electric has included a version of the cost-effectiveness analysis without rounding of the $180.06 to $180.00 and is included in the accompanying Excel spreadsheet files in CD format. The cost-effectiveness results for this change are as follows:

RIM: 1.04
TRC: 2.17
PCT: 61,884

20. Please refer to pages 1 and 2 of the company's petition. For the Metal Halide ("MH") and High-Pressure Sodium ("HPS") street and outdoor luminaires, please identify the depreciation account(s) into which these luminaires are booked, the applicable amortization or depreciation rate for each such account, and the Commission order by which the aforementioned rate was authorized.

A. The Metal Halide ("MH") and High Pressure Sodium ("HPS") street and outdoor luminaires are included in account 37300 Street Lighting and Signal Systems. The approved depreciation rate for this account 37300 is 5.4%. This depreciation rate was approved by the Commission in Order No. PSC-12-0175-PAA-EI.

21. Please refer to page 1 of the company's petition and quantify the amount of "associated communication expenditures."

A. If approved, the company projects that it will add an incremental $50,000 per year of related conservation targeted advertising to communicate to customers the benefits that will be realized from this conservation conversion program.

22. On page 2 of the petition, the company indicated that it "is seeking approval to recover the unamortized costs for MH and HPS luminaires" which are of $37,780,595, as of August 31, 2017. Please clarify whether these are the assets for which the company is requesting a capital recovery schedule in Docket No. 20170198-EI. If not, please explain.

A. No, the 209,821 luminaires that are in this petition are the existing MH and HPS that are in the field at this time. The luminaires that are requesting a capital recovery schedule for in Docket No. 20170198-EI are the replacement LED luminaires that will be replacing the existing MH and HPS luminaires.

23. Referring to page 2 of the petition, please explain in detail how TECO proposes to recover the unamortized MH and HPS-associated costs "at a rate to coincide with conversion of the luminaires." Please also specify the dates for commencing and closing the recovery period.

A. If approved, Tampa Electric will recover the unamortized depreciation costs based upon actual luminaire replacements performed during each month. The LED luminaires being installed to replace the existing MH and HPS luminaires have bar codes. The amount of LED luminaires installed each month will be counted and reported. For each LED luminaire replaced, $180.06 as specified in the proposed Street and Outdoor Lighting Conversion Program Standards will be accounted for against the remaining unamortized depreciation. The company intends to initiate the conversion process shortly after Commission approval if approved. The company projects this conversion project to take approximately five years to complete after the date of commencement.

24. What is the estimated unamortized amount for the eligible luminaires as of the recovery period commencement date?

A. Tampa Electric projects that the amount of unamortized depreciation for the eligible luminaires as of the recovery period commencement date is $36,930,532.