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April 17, 2020

**VIA: ELECTRONIC FILING**

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

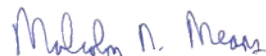
Re: Petition for Approval of Demand Side Management Plan for Tampa Electric Company; Docket Number 20200053-EG

Dear Mr. Teitzman:

Attached for filing in the above docket are Tampa Electric Company's responses to Staff's Second Data Request (Nos. 1-3) as requested on April 10, 2020.

Thank you for your assistance in connection with this matter.

Sincerely,



Malcolm N. Means

MNM/bmp  
Attachment

cc: Takira Thompson, Engineering Specialist  
Ashley Weisenfeld, Office of General Counsel

**TAMPA ELECTRIC COMPANY  
DOCKET NO. 2020053-EG  
STAFF'S SECOND DATA REQUEST  
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1. Please refer to TECO's response to staff's first data request, No. 1, filed March 27, 2020, in the instant docket. Please explain in detail the rationale for offering each of the new programs being proposed.

A. Tampa Electric is proposing the creation of the following new Demand Side Management ("DSM") programs to the company's DSM portfolio for the 2020-2029 period.

Residential:

- ENERGY STAR Thermostats
- ENERGY STAR Pool Pumps
- Prime Time Plus

Commercial:

- Facility Energy Management System
- Smart Thermostats
- Variable Frequency Drive Control for Compressors

Pilot:

- Integrated Renewable Energy System (Photovoltaic, Battery, Car Charging, Industrial Truck Charging)

In general, the main rationale for offering each of the new programs proposed is that all of these new programs will assist in achieving the objectives of the Florida Energy Efficiency and Conservation Act ("FEECA"). These new programs specifically will assist directly in the first three of the four key areas that are emphasized by FEECA and the fourth key area by the conservation of fuels consumed in fossil fueled power plants:

1. To reduce the growth rates of weather-sensitive peak demand and electricity usage.
2. Increase the efficiency of the production and use of electricity and natural gas.
3. Encourage demand-side renewable energy systems.
4. Conserve expensive resources, particularly petroleum fuels.

In addition, Tampa Electric is required to develop and submit to the Commission for approval, a cost-effective DSM plan designed to achieve the DSM goals once the Commission establishes them for the next goals setting period. To ensure the benefits would be realized to as much as possible, the cost-effectiveness evaluations were based upon the same updated costs

and assumptions that were used for the development of the company's proposed 2020-2029 DSM Goals. Tampa Electric developed the DSM portfolio, as a whole, to achieve the recently prescribed DSM goals by the Commission. Other general guiding rationale used by Tampa Electric in the development of these new programs are as follows:

- Ensuring, if possible, the program is cost-effective, with the exception of the company's energy audit, low-income, energy-education and pilot DSM programs.
- Ensuring the program is aligned with the vision and mission of Tampa Electric and the Commission.
- Ensuring the programs savings in energy and demand are understood and the benefits do not create other issues on the electric system.
- Ensuring the program is effectively and cost-effectively managed.
- Ensuring the program is aligned with the current DSM portfolio.
- Ensuring the program does not discriminate or give competitive advantages to those that participate and those that cannot participate.
- Ensuring the program does not undermine building codes or become a free ridership on adoption of building codes.

Additionally, specific rationale for offering each of the new programs proposed are detailed below:

**Residential – ENERGY STAR Thermostats:** The program is cost-effective to offer and aligns very well with Tampa Electric's prior partnership with the Environmental Protection Agency's ("EPA") ENERGY STAR Program and the other programs currently in the DSM portfolio.

**Residential - ENERGY STAR Pool Pumps:** The program is cost-effective to offer and aligns very well with Tampa Electric's prior partnering with the EPA's ENERGY STAR Program and the other programs currently in the DSM portfolio. This program will place emphasis on replacement of existing pool pumps prior to the enactment of an appliance energy-efficiency standard expected in late 2024, which will cause this program to be discontinued in the company's next DSM Plan at that time. Collaboration with the EPA and industry experts helped directly guide the company's decision based on their input as to when and how they would recommend proceeding with new industry standards involving residential pool pump replacements. While manufacturing of single speed pools

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pumps will cease in July of 2021, it will take a number of years to cycle through all of the inventory of single speed pumps which will still be allowed to be installed until inventory runs out or when the new requirements occur in late 2024.

**Residential – Prime Time Plus:** The program is cost-effective to offer and aligns very well with Tampa Electric’s upcoming Advanced Metering Infrastructure (“AMI”). In 2016, the company retired the Prime-Time Residential Load Management Program due to not being cost-effective since the 2004 DSM Goals Setting and because supporting hardware and software for continuing the program became obsolete. To maximize the cost-effectiveness of the Prime Time Plus program, the program will utilize the AMI system as the communication platform and the Meter Data Management (“MDM”) system to initiate the load control events to participating customers. The projected completion time for these systems is in 2021 which is the reason for the delay in participants for this proposed DSM program until 2022. The company has received many requests for this type of program, which allows for very easy participation to residential customers, since the retirement of the Prime Time program. This program will also potentially assist in frequency control with solar generating units.

**Commercial - Facility Energy Management System:** The program is cost-effective to offer and aligns very well with most of the company’s commercial DSM portfolio. This technology is also frequently requested during in the performance of energy audits for commercial and industrial customers, is a topic of discussion at trade shows the company participates in, and is often mentioned in feedback provided from interactions with Tampa Electric’s Account Managers and their assigned customers.

**Commercial - Smart Thermostats:** The program is cost-effective to offer and aligns very well with the company’s residential ENERGY STAR Smart Thermostat Program and the commercial Cooling and Chiller DSM programs currently in the DSM portfolio.

**Commercial - Variable Frequency Drive Control for Compressors:** The program is cost-effective to offer and aligns very well with the company’s commercial Cooling and Chiller DSM programs currently in the DSM portfolio. This technology is also frequently requested during the performance of energy audits for

commercial and industrial customers and is a topic of discussion at trade shows the company participates in.

**Pilot - Integrated Renewable Energy System (Photovoltaic, Battery, Car Charging, Industrial Truck Charging):** Tampa Electric has been exploring each of the technologies that support this program for several years, even dating back to 1998 with the addition of solar photovoltaic (“PV”) energy education at the company’s Energy Technology Resource Center. More recently the company has explored these technologies in isolation through the following:

- PV: The company’s DSM Program “Renewable Energy Systems Initiative” which was the five year Pilot program to offer credits for residential and commercial customers to install PV systems and/or solar water heating systems, in addition to providing five PV systems installed at schools that were utilized as emergency shelters.
- Batteries: The company initiated a battery storage Research and Development (“R&D”) project for small or mid-sized commercial customers in 2016. In this R&D project, the feasibility of potentially offering a battery storage DSM program and would be evaluated through research and field study with at least one battery being installed at a commercial/industrial customer’s facility. To assist in the performance of this R&D project, Tampa Electric partnered with the University of South Florida’s College of Engineering. In 2017, the first phase of the R&D project was completed by having a comprehensive report completed on the types of batteries available that would be most suitable for this type of installation. Tampa Electric then proceeded to start the second phase of the project with the identification of potential customer sites and issuing a request for proposals for the batteries. During this phase of the project, Tampa Electric shelved the small to mid-sized battery storage because the high incremental cost of the batteries and associated installation costs. The combined costs would have exceeded the cost of almost three years of the prior spend limitations for R&D Projects.
- Electric vehicle charging: Tampa Electric has been monitoring the types and number of charging stations being installed within the company’s service area. The company

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does not have information on the performance of charging stations for large industrial trucks.

In addition to the above reasons, each of the commercial technologies associated with the proposed Integrated Renewable Energy System (Pilot) program failed cost-effectiveness with varying results at the Economic Potential level as seen in the company's Response No. 2 below. Because of these varying results and the reasons above, Tampa Electric proposed this unique program to integrate all these technologies and evaluate the benefits of an integrated system. The company believes there are opportunities to utilize these three systems integrated together to maximize their DSM benefits, achieve cost-effectiveness and gain the knowledge regarding load shifting during current peak times, and load shifting during changing peak times due to high solar penetration. Another important part of the pilot is to make the technology available for viewing and education by potential commercial/industrial customers that are interested in these systems.

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2. Please refer to the Utility’s response to staff’s first data request, No. 6b, filed March 27, 2020, in the instant docket. Please provide the results of the cost-effectiveness analyses conducted for each of these individual technologies in Docket No. 20190021-EG.

A. The table below provides the cost effectiveness results for a commercial efficient battery charger, commercial solar photovoltaic (“PV”) generation, and commercial solar PV generation with battery storage at the Economic Potential. None of the technologies made it through the Economic Potential screening to be further analyzed with any administrative or incentive costs.

	<b>Segment</b>	<b>Total Resource Cost Test</b>	<b>Participant Cost Test</b>	<b>Rate Impact Measure Test</b>
Efficient Battery Charger	All Segments	0.971	505.647	0.886
Solar (17.1w/sf2)	All Segments	0.540	-28.486	1.473
Solar with Battery Storage	Seg 1 - 15 MWh	0.000	-46,264.366	#DIV/0!
Solar with Battery Storage	Seg 2 - 25 MWh	0.000	-59,282.386	#DIV/0!
Solar with Battery Storage	Seg 3 - 50 MWh	0.000	-73,796.288	#DIV/0!
Solar with Battery Storage	Seg 4 51+ MWh	0.000	-96,779.587	#DIV/0!
Solar with Battery Storage with other DSM (EE and DR)	Seg 1 - 15 MWh	0.001	-46,179.165	0.596
Solar with Battery Storage with other DSM (EE and DR)	Seg 2 - 25 MWh	0.000	-59,280.264	0.574
Solar with Battery Storage with other DSM (EE and DR)	Seg 3 - 50 MWh	0.000	-73,775.035	0.589
Solar with Battery Storage with other DSM (EE and DR)	Seg 4 51+ MWh	0.000	-96,735.232	0.598

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3. Please complete the table below by identifying the actual average residential monthly bill amount for the Energy Conservation Cost Recovery (ECCR) Clause for 2019, and the projected average residential monthly bill amount for the ECCR Clause for 2020 through 2024 (at 1,000 kilowatt-hours (kWh) and 1,200 kWh). Please provide the requested information in Microsoft Excel format.

<b>Total Monthly Bill ECCR Amount</b>						
<b>Month</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>

- A. The table below provides Tampa Electric's actual average residential monthly bill amount for the Energy Conservation Cost Recovery ("ECCR") Clause for 2019 and 2020, and the projected average residential monthly bill amount for the ECCR Clause for 2021 through 2024 (at 1,000 kilowatt-hours (kWh) and 1,200 kWh). The company is also providing the table in Microsoft Excel format with this data request entitled, "(BS 8) Staff Data Request No. 3 – Table of ECCR Monthly Rate".

<b>Total Monthly Bill ECCR Amount</b>						
	<b>Actual</b>		<b>Projected</b>			
<b>(\$/Month)</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
1,000 kWh	\$3.21	\$2.32	\$2.75	\$2.75	\$2.42	\$2.33
1,200 kWh	\$3.85	\$2.78	\$3.30	\$3.30	\$2.90	\$2.80