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March 5, 2021

VIA: ELECTRONIC FILING

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

In re: Petition of Tampa Electric Company for approval of Direct Current Microgrid
Pilot Program; Docket No. 20200234-EI;

Dear Mr. Teitzman:

Attached for filing in the above docket are Tampa Electric Company's responses to Staff's
Sixth Data Request (Nos. 1-6), propounded on February 23, 2021.

Thank you for your assistance in connection with this matter.

Sincerely,



Malcolm N. Means

MNM/bmp
Attachment

cc: All Parties of Record (w/attachment)
Suzanne Brownless, Special Counsel, FPSC (w/attachment)

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20200234-EI
STAFF'S SIXTH DATA REQUEST
REQUEST NO. 1
BATES PAGE: 1
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- 1.** What activities are involved with matching the remaining roof cover, and other removal requirements, in the event the solar panels are removed at the end of the pilot program for a typical home in the pilot program?
 - A.** All of the solar installs are on one plane of the roof only. The solar specific materials and equipment can be readily detached and removed from the roof. There are two layers of waterproofing underneath the solar arrays on all of homes, this will remain in place. Once solar equipment is removed any small penetrations or noticeable damages to the water proofing can be repaired in a manner consistent with roofing industry standards. Side and bottom flashing installed as a transition between the solar arrays and the roofing tile would be removed. Any partial tile previously installed would be removed and replaced with full tiles. The open area would be filled with tiles that match those already installed on the roof. All of this work would fall into a scope acceptable to any qualified roofing contractor of which there are many available in the local Tampa area.

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2. What is the estimated cost to remove the solar panels and to perform the functions of matching the remaining roof cover indicated in response to 1.A, and any other removal related expense, for a typical home in the program?

A. The estimated cost break-down for the removal of the solar arrays from the roof and to replace with tiles matching the existing roof cover is as follows:

- Solar array removal and disposition	= \$1,000 per home
- Remove and clean-up around flashings	= \$700 per home
- Replacement roofing materials	= \$1,000 per home
- Installation of roofing	= \$2,000 per home
TOTAL	= \$4,700 per home

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- 3.** What is the estimated original book cost and estimated remaining book cost of the solar panels at the end of the pilot program for the typical home in the pilot program?
 - A.** The original book cost of the solar panels is \$3,682 for the typical home and the estimated remaining book cost of the solar panels at the end of the pilot program is \$3,191 for the typical home.

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- 4.** In the event the solar panels were removed at the end of the pilot program, what is the estimated salvage value of the solar panels for the typical home in the pilot program?
 - A.** At the end of the pilot period, the estimated salvage value of the solar panels would be 25-30% of the expected price of new solar panels at the time or approximately \$0.08-\$0.10 per watt which translates into \$650 - \$1,000 per home.

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- 5.** In the event the solar panels were removed at the end of the pilot program, what additional roofing materials, if any, would be required to be installed in order to protect the structure from the elements (i.e. rain, heat, etc.)? Please explain.

- A.** As indicated in our response to Question #1, there are two layers of waterproofing being installed under all solar arrays as a part of the solar installation scope of the pilot project. This waterproofing will protect the structure from the elements during the Pilot and afterwards if the solar arrays are removed. To protect the waterproofing if the solar arrays are removed the standard Boral "W" tile that matches a home's chosen colors would be installed as indicated in the area where the solar array was.

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- 6.** Please explain whether and how the solar panels that would be installed under the pilot program are integrated into the roof itself more so than other rooftop solar panels typically installed throughout the country.
 - A.** Due to the nature of the concrete roofing tiles, the inset installation method that is being used in the Pilot is an accepted methodology for solar install for this type of roofing application. This method allows for the array to be attached directly to the roofing deck and for the array surface to be flush with the tops of the installed tiles while providing for the required clearance under the array. The scope and nature of the install being deployed was vetted and agreed with the home builder and their roofer. This method also provided for the most efficient integration into the homebuilder's schedule. Finally, this method is being used in many areas throughout the country.