

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: January 18, 2018
TO: Carlotta S. Stauffer, Commission Clerk, Office of Commission Clerk
FROM: Takira Thompson, Engineering Specialist, Division of Engineering
RE: Docket No. 20170258-EQ- Petition for approval of a standard interconnection agreement for interconnected customer-owned battery subsystems, by Tampa Electric Company.

Please file the attached responses to Staff's Second Data Request in the above mentioned docket file.

Thank you

Terri Jones

From: Billy Stiles
Sent: Thursday, January 18, 2018 10:31 AM
To: Takira Thompson
Cc: Ashburn, Bill R.; REGDEPT REGDEPT
Subject: Response to inquiry re "minimal impacts" from battery storage systems

Takira,

Thank you for the opportunity to clarify Tampa Electric's response to Staff's 2nd data request in which Staff asked what Tampa Electric meant when referring to "minimal impacts" from battery storage systems. The following explanation memorializes the explanation provided verbally in our discussion yesterday.

When a customer installs a power source, or potential power source, it is important that the equipment operates properly when it is connected to the utility power system. Industry standards are in place that define the operating characteristics required of the power source. Of particular interest are requirements to ensure the safety of line workers, customers, and connected equipment. The power source is required to disconnect from the utility system rapidly in the event of an outage to prevent a dangerous "backfeed" condition in which the low voltage generated by the customer's power source is stepped up to high voltage, energizing the local distribution system.

The inverters and electronic controls of the battery storage systems are very similar to the technologies utilized in photovoltaic (PV) systems. These systems have proven to operate very reliably over many years of service. Tampa Electric has not experienced any negative impacts from customer owned PV systems. Based on this success, Tampa Electric does not expect negative impacts from the battery systems.

Please call me if you have any further questions.

Thank you,
Billy

Sent from my iPhone

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**TAMPA ELECTRIC COMPANY
DOCKET NO. 20170258-EQ
STAFF'S SECOND DATA REQUEST
REQUEST NO. 1
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- 1.** Referencing the Utility's response to question no. 3 of Staff's First Data Request, please identify the "minimal impacts" the Utility expects the battery subsystem interconnections to have on the grid.
- A.** Tampa Electric believes the impacts from customers installing battery systems and associated supporting subsystems that have the potential to operate in parallel with the utility to be minimal due primarily to the very short duration of time that the battery system could export power into the company's electrical system. These battery systems have the potential to export power briefly when utility power is interrupted to the customer's home or facility and when the battery system is designed to operate in parallel. The short duration during these situations is between 100 milliseconds and a few seconds. Tampa Electric views the potential impacts to the company's electrical system or to a neighboring customer as very minimal due to these short time frames as well as the relatively small size of the power source from the battery as compared to the overall system.

**TAMPA ELECTRIC COMPANY
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STAFF'S SECOND DATA REQUEST
REQUEST NO. 2
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- 2.** Please provide whether or not the Utility intends to recover the costs of reimbursing customers for the switch installation. If so, in what filing does the Utility anticipate recovering these costs?
 - A.** Tampa Electric will treat the cost of the switch just as it does for the similar type switch required for PV interconnections. It is a capital investment by the company which is recoverable through base rates and as such would be included in rate base for cost recovery in the next general rate case.

**TAMPA ELECTRIC COMPANY
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- 3. Please explain what happens to the customer's battery subsystem if the customer does not sign the agreement. Will the customer still be able to use their battery subsystem?**
- A. The agreement covers the parallel operations of the battery with the Tampa Electric system.**

If the customer does not operate the battery such that it exports in parallel with Tampa Electric, then the customer can use their battery subsystem without signing the agreement. If the battery subsystem operates in recharge mode only, using energy from Tampa Electric or the customer's PV to recharge the battery only, then no need for the customer to sign the agreement. If the only time the battery subsystem exports for the use of the customer is when it is not in parallel with Tampa Electric, break before make, then no need to sign the agreement.

However, if the customer will be operating the battery in both export and recharge mode in parallel with Tampa Electric, the customer must first sign the agreement.

**TAMPA ELECTRIC COMPANY
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- 4.** Referencing the Utility's response to question no. 9 of Staff's First Data Request, please explain what causes the cost of the switch installation to vary.
 - a.** Provide the anticipated range of the switch cost amount.

- A.** The cost of the switch installation can vary depending on the distance from the switch to the battery subsystem, the type and substance of the structure to which the switch and battery subsystem are attached, or which must be traversed, the ease of installation, and other factors.
 - a.** Depending on the factors described above, the cost could vary from a couple hundred dollars to over a thousand dollars. Tampa Electric's experience with switch installations for PV interconnections has been that Tampa Electric posting the price which it will pay for a switch installation frequently becomes the amount requested by the customer or the installation contractor regardless of what it actually cost to install the switch.

**TAMPA ELECTRIC COMPANY
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- 5.** Please provide whether the rental agreement is for customers leasing battery subsystems or for customers renting property where battery subsystems are located.
 - A.** The rental agreement is for customers who rent the property where the battery subsystem is located. Like the rental agreement for PV interconnections, the rental agreement service to secure the understanding of the renter of a battery subsystem which is interconnected to Tampa Electric's system of their obligations under the interconnection agreement with regard to access and other matters that transfer from the owner to the renter.