

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 25, 2018

TO: Office of Commission Clerk (Stauffer)

FROM: Division of Engineering (Thompson, Ellis, King) TB
Office of the General Counsel (Murphy) cm

RE: Docket No. 20170258-EQ – Petition for approval of a standard interconnection agreement for interconnected customer-owned battery subsystems, by Tampa Electric Company. cm for TLT

AGENDA: 02/06/18 – Regular Agenda – Proposed Agency Action – Interested Persons May Participate

COMMISSIONERS ASSIGNED: All Commissioners

PREHEARING OFFICER: Administrative

CRITICAL DATES: None

SPECIAL INSTRUCTIONS: None

Case Background

On December 5, 2017, Tampa Electric Company (TECO or Utility) filed a petition for approval of a standard interconnection agreement for interconnected customer-owned battery subsystems. Although styled as a petition for a single interconnection agreement, TECO's petition seeks approval of two new interconnection agreements: one for customers owning property where battery subsystems are connected (Owner's Agreement) and one for customers renting property where battery subsystems are located (Renter's Agreement). The Renter's Agreement includes signature blocks for the Utility and the renter and puts the renter on notice about the Owner's Agreement. These agreements, collectively referred to as the Agreements, are to facilitate the interconnection of customer-owned and customer-rented battery subsystems that are located behind the customer meter but which would be connected to and operate in parallel with TECO's electrical grid.

Docket No. 20170258-EQ

Date: January 25, 2018

The Commission has jurisdiction over this matter pursuant to Sections 366.04 and 366.05, Florida Statutes.

Discussion of Issues

Issue 1: Should the Commission approve Tampa Electric Company's petition for a standard interconnection agreement for interconnected customer-owned battery subsystems?

Recommendation: Yes. The Agreements require customers owning and renting battery subsystems to adhere to terms which ensure the safety of the Utility's personnel. Approval of this petition will not relieve the Utility of any requirements during a future rate case proceeding. Therefore, staff recommends that TECO's petition for approval of a standard interconnection agreement for interconnected customer-owned battery subsystems should be approved as filed.

Staff Analysis: TECO's proposed Agreements are intended for customers owning and renting battery subsystems. In the Owner's Agreement, a battery subsystem is described as a battery system consisting of one or more storage batteries and battery chargers (including inverters, converters, and associated electrical equipment); this includes batteries charged by solar photovoltaic arrays. These battery subsystems will supply power only for the customer's own use and will not export power into the Utility's supply grid for more than 100 milliseconds. During a faulted condition on the Utility's system, the customer's battery subsystem will be isolated but it will still be able to provide electricity to the customer. A faulted condition can occur for reasons such as contact with vegetation, lightning, weather, animals and/or vehicles. The Utility currently anticipates interconnecting 73 customer-owned battery subsystems and the Owner's Agreement will allow the safe interconnection of these subsystems. As long as the customer's interconnection complies with the provisions set forth in the Owner's Agreement, the Utility does not expect any negative impacts to its electrical grid. Some of the provisions of the Owner's Agreement include requiring the customer to have the battery subsystem inspected and approved by the authority having jurisdiction and providing proof of this inspection and approval to the Utility, requiring the customer to maintain the specified amount of general liability insurance for personal injury and property damage, and requiring the customer to install an isolation switch to allow the Utility to completely separate the battery subsystem from the Utility's system, if necessary, for safety purposes.

The provisions of the Renter's Agreement notify the customer renting property where battery subsystems are located that the owner of the property remains responsible for all provisions in the Owner's Agreement that the owner signed with the Utility. The Renter's Agreement also requires the customer to abide by and comply with all applicable provisions of the Owner's Agreement that relate to safety and that govern the use, operation and maintenance of the battery subsystem.

The benefit of the Agreements to the ratepayers owning battery subsystems and renting property where battery subsystems are located is allowing their subsystems to safely interconnect and operate in parallel with the Utility's electrical grid by meeting the provisions set forth in the Owner's Agreement. Under the Owner's Agreement, operation of the battery subsystems in parallel with TECO's electrical grid would not be permitted without meeting the specified requirements. Therefore, the Owner's Agreement will facilitate customers' desires to own and operate battery subsystems and the Utility personnel working at or near the premises will benefit from the safety measures included in the Owner's Agreement. The required installation of a visible isolation switch helps to ensure that the battery subsystems are operated in a safe manner

by allowing the Utility to open the switch under necessary conditions. Conditions which may require the switch to be opened are:

- Utility system emergencies or maintenance requirements;
- Hazardous conditions existing on the Utility's system due to the operation of the customer's battery subsystem.
- Adverse electrical effects (such as power quality problems) on the electrical equipment of the Utility's customers caused by the battery subsystem.
- Failure of the customer to maintain the required insurance for the duration of the Owner's Agreement.

The switch is to be readily accessible to the Utility and capable of being locked in the open position with a Utility padlock. The Utility will reimburse the customer for the cost of the switch installation for battery subsystems at or below 15 kW AC maximum capacity, not to exceed the amount listed on the Utility's website. Approval of this petition will not relieve the Utility of any requirements during a future rate case proceeding.

Under the Owner's Agreement, the customer agrees to permit the Utility to inspect the battery subsystem and its components as well as the required documentation, before and after the battery subsystem goes into service, and to witness the initial testing of the customer's battery subsystem, if the Utility chooses. Once the Utility has received written documentation from the customer that the requirements of the Owner's Agreement have been met and the correct operation of the isolation switch has been demonstrated to a Utility representative, the Utility will send a written notice within 10 business days that parallel operation of the battery subsystem can begin. Staff has reviewed the Owner's Agreement and the Renter's Agreement and recommends that the provisions of the Agreements are reasonable and are in place to protect the ratepayers as well as the Utility personnel. TECO's Owner's Agreement and Renter's Agreement, in type-and-strike format, are included as Attachment A to this recommendation.

Conclusion

The Agreements require customers owning and renting battery subsystems to adhere to terms which ensure the safety of the Utility's personnel. Approval of this petition will not relieve the Utility of any requirements during a future rate case proceeding. Therefore, staff recommends that TECO's petition for approval of a standard interconnection agreement for interconnected customer-owned battery subsystems should be approved as filed.

Issue 2: Should this docket be closed?

Recommendation: Yes. If no person whose substantial interests are affected by the proposed agency action (PAA) files a protest within 21 days of the issuance of the PAA Order, a Consummating Order should be issued and the docket should be closed. (Murphy)

Staff Analysis: If no person whose substantial interests are affected by the PAA files a protest within 21 days of the issuance of the PAA Order, a Consummating Order should be issued and the docket should be closed.



SUBSTITUTE ORIGINAL SHEET NO. 8.1150

**STANDARD INTERCONNECTION AGREEMENT FOR
INTERCONNECTED CUSTOMER-OWNED BATTERY SUBSYSTEMS
1 KW OR MORE**

This Agreement is made and entered into this _____ day of _____, 20____, by and between _____, (hereinafter called "Customer"), located at _____ in _____, Florida and Tampa Electric Company (hereafter called "Company"), a corporation organized under the laws of the State of Florida. The Customer and the Company shall collectively be called the "Parties".

WITNESSETH:

WHEREAS, an Interconnected Customer-Owned Battery Subsystem (BAT) is a battery system consisting of one or more storage batteries and battery chargers (including inverters, converters, and associated electrical equipment) that is: located on Customer's premises; connected with and operates in parallel with the Company's electrical system, rated at more than 1 kilowatt (kW) alternating current (AC) power output, intended to offset part or all of Customer's existing electricity requirements for an extended period of time (in excess of 15 minutes), but will not export power into the Company's supply grid for more than 100 milliseconds upon interruption of utility supplied electric service before it isolates electrically. When the Customer's BAT is operating in parallel to the Company's supply grid, the battery system will only inadvertently export.

WHEREAS, the Customer has made a request to interconnect its owned or leased BAT with the Company's electrical supply grid at a standard service voltage (500 volts or less) as specified in the Company's Standard Electrical Service Requirements.

NOW, THEREFORE, that and for the mutual covenants and agreements expressed herein, the Company and the Customer agree as follows:

1. The Customer certifies that the BAT equipment, its installation, its operation and its maintenance shall be in compliance with: IEEE-1547 and standards referenced by IEEE-1547; UL 1741; UL 9540; the National Electrical Code; state and local building codes, mechanical codes, and electrical codes.
2. The Customer's BAT will supply power only for the Customer's own use and shall not export power into the Company's supply grid for more than 100 milliseconds upon interruption of utility supplied electric service before it isolates electrically. When the Customer's BAT is operating in parallel to the Company's supply grid, the battery system will only inadvertently export. The BAT shall not energize the Company's system when the Company's system is de-energized. The BAT shall cease to energize the Company's system during a faulted condition on the Company's system. The BAT shall cease to energize the Company's system prior to the automatic or non-automatic reclosing of the Company's protective device(s). The protective scheme used to accomplish the non-export design shall be approved by the System Security Department of the Company.

Continued to Sheet No. 8.1155

ISSUED BY: N. G. Tower, President

14

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 10 OF 16



ORIGINAL SHEET NO. 8.1155

Continued from Sheet No. 8.1150

3. The Customer shall provide the Company a copy of the BAT manufacturer's installation, operation and maintenance instructions. If the BAT is leased to the Customer by a third party, or if operation or maintenance of the BAT is to be performed by a third party, the lease or performance agreements and any pertinent documents related to those agreements, shall be provided by the Customer to the Company.
4. The Company shall not provide electric service to the Customer under conditions requiring operation in parallel with generation equipment connected to the Customer's system if, in the opinion of the Company, such operation is hazardous or may interfere with its own operations or service to other customers or with service furnished by other customers of the Company.
5. The Customer shall have the completed BAT inspected and approved by the appropriate code authority having jurisdiction. The Customer shall provide proof of this inspection and approval to the Company. The Company shall also inspect and approve the BAT. All such inspections and approvals shall be completed before the BAT may be put into service
6. For all BAT installations at or below 15 Kw AC maximum capacity, the Customer shall maintain general liability insurance for personal injury and property damage in the amount of not less than one hundred thousand dollars (\$100,000). For all BAT installations above 15 Kw AC maximum capacity, the Customer shall maintain general liability insurance for personal injury and property damage in the amount of not less than one million dollars (\$1,000,000). The Customer shall provide to the Company initial proof of insurance in the form of a certificate evidencing the Customer's insurance coverage in effect at the time of interconnection. The certificate shall list the BAT as a covered addition to the Customer's insured property. The Customer shall submit similar proof of continuing insurance coverage within 30 days of any policy renewal. As an alternative to the foregoing insurance requirement, the Customer may self-insure upon receiving the Company's prior written approval. The Company will provide the Customer with written notification of approval or disapproval of a self-insurance application within 30 business days after the Company's receipt of all documentation required to support the application. In the event that the Company approves Customer's request to self-insure, Customer shall provide proof of its continuing ability to self-insure to the Company on an annual basis, or more frequently if requested by the Company. Notwithstanding the foregoing, the minimum insurance coverage amount set forth above shall be limited for the state, a state agency or subdivision (as those terms are defined in Section 768.28(2), Florida Statutes, or the successor thereto), to the maximum dollar amounts set forth in Section 768.28(5), Florida Statutes, or the successor thereto.

Continued to Sheet No. 8.1160

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 11 OF 16



ORIGINAL SHEET NO. 8.1160

Continued from Sheet No. 8.1155

7. The Customer shall pay the Company a "Contribution in Aid to Construction" (CIAC) to design, procure, construct, and install any Company owned system upgrades necessary to accommodate the BAT.
8. The Customer is responsible for the protection of its BAT, interconnection equipment, inverters, protection devices, and other system components from damage from the normal and abnormal operations that occur on the Company's utility system in delivering and restoring system power. The Customer is also responsible for ensuring that the BAT equipment is inspected, maintained, and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.
9. The Customer shall install a manual disconnect switch of the visible load-break type to provide a separation point between the AC Power output of the BAT and any Customer wiring connected to the Company's utility system such that back feed from the BAT to the Company's system cannot occur when the switch is in the open position. A contact, circuit breaker, or molded case switch, or a switch that cannot be seen and accessed directly, does not provide an acceptable visible break and is not acceptable. A BAT system with an internally designed manual, lockable visible disconnect switch, may be acceptable provided it offers the utility the same operational access as the meter. The manual disconnect switch shall be mounted separate from the meter socket on an exterior surface adjacent to the meter. The switch shall be readily accessible to the Company and capable of being locked and tagged in the open position with a Company padlock. When locked and tagged in the open position by the Company, this switch will be under the control of the Company. For all BATs at or below 15 kW AC maximum capacity, the Company will pay a one-time reimbursement for the installation of the switch not to exceed the amount listed on the Company website. The Customer will be responsible for all costs to install the switch above this amount. For all BATs above 15 kW AC maximum capacity, the Customer shall be fully responsible for the expense of installation of the switch.

Continued to Sheet No. 8.1165

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 12 OF 16
REVISED: JANUARY 9, 2018



ORIGINAL SHEET NO. 8.1165

Continued from Sheet No. 8.1160

10. The Company may open the switch, isolating the BAT, without prior notice to the Customer. To the extent practical, however, prior notice shall be given. If prior notice is not given, the Company shall at the time of disconnection leave a door hanger notifying the Customer that the BAT has been disconnected, including an explanation of the condition necessitating such action. The switch will be re-closed by the Company as soon as practical once the conditions causing the disconnection cease to exist. Conditions which may require the switch to be opened are:

- Company utility system emergencies or maintenance requirements.
- Hazardous conditions existing on the Company's utility system due to the operation of the Customer's BAT as determined by the Company.
- Adverse electrical effects (such as power quality problems) on the electrical equipment of the Company's other electric consumers caused by the BAT as determined by the Company.
- Failure of the Customer to maintain the required insurance for the duration of this Agreement.

11.a The Customer agrees to indemnify and hold harmless the Company, its subsidiaries and affiliates, and their respective employees, officers and directors, against any and all liability, loss, damage, cost, claims or expense, including attorney's fees, which the Company, its subsidiaries, affiliates, and their respective employees, officers and directors may hereafter incur, suffer or be required to pay by reason of negligence on the part of the Customer under the obligation of this Agreement. The Company agrees to indemnify and hold harmless the Customer, its subsidiaries and affiliates, and their respective employees, officers and directors, against any and all liability, loss, damage, cost, claims or expense, including attorney's fees, which the Customer, its subsidiaries and affiliates, and their respective employees, officers and directors may hereafter incur, suffer or be required to pay by reason of negligence on the part of the Company under the obligations of this Agreement.

b. With respect to a Customer that is the state, a state agency or subdivision (as those terms are defined in Section 768.28(2), Florida Statutes, or the successor thereto), the obligations of Customer set forth in Paragraph 11.a above shall be subject to Section 768.28, Florida Statutes, (or the successor thereto), including the limitations contained therein. With respect to a Customer that is the United States of America, or agency or subdivision thereof, the obligations set forth in the first sentence of Paragraph 11.a shall not apply. In either case, the Company reserves its rights under Section 768.28, Florida Statutes, (or the successor thereto), and the Federal Tort Claims Act (or the successor thereto), as applicable, including, but not limited to, the right to pursue legislative relief.

Continued to Sheet No. 8.1170

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 13 OF 16



ORIGINAL SHEET NO. 8.1170

Continued from Sheet No. 8.1165

12. In no event shall any statement, representation, or lack thereof, either express or implied, by the Company, relieve the Customer of exclusive responsibility for the Customer's BAT. Specifically, any Company inspection of the BAT shall not be construed as confirming or endorsing the BAT design or its operating or maintenance procedures nor as a warranty or guarantee as to the safety, reliability, or durability of the BAT equipment. The Company's inspection, acceptance, or its failure to inspect shall not be deemed an endorsement of any BAT equipment or procedure.
13. The Company will furnish, install, own and maintain metering equipment to measure the kilowatt-hours (kWh) delivered by the Company to the Customer and/or received by the Company from the Customer, and if applicable, the kilowatt demand and time of use.
14. The Customer agrees to permit the Company, if it should so choose, to inspect the BAT and its component equipment and the documents necessary to insure compliance with various sections of this Agreement, both before and after the Customer's BAT goes into service, and to witness the initial testing of the Customer's BAT equipment and protective apparatus.
15. Once the Company has received the Customer's written documentation that the requirements of this Agreement have been met and the correct operation of the manual switch has been demonstrated to a Company representative, the Company will within 10 business days, send written notice that parallel operation of the BAT may commence.
16. The Customer shall not have the right to assign its benefits or obligations under this Agreement without the Company's prior written consent and such consent shall not be unreasonably withheld. The Company may require the assignee to sign a new copy of this Agreement, agreeing to all its requirements and paying the applicable processing charge.
17. In executing this Agreement, the Company does not, nor should it be construed to extend its credit or financial support for the benefit of any third parties lending money to or having other transactions with Customer or any assignee of this Agreement.
18. This Agreement shall be governed by and construed and enforced in accordance with the laws, rules and regulations of the State of Florida and the Company's Tariff as it may be modified, changed, or amended from time to time.

Continued to Sheet No. 8.1175

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 14 OF 16



ORIGINAL SHEET NO. 8.1175

Continued from Sheet No. 8.1170

19. The Company's Tariff and associated technical terms and abbreviations, general rules and regulations and standard electric service requirements (as may be applicable) are incorporated by reference.

20. At the Customer's expense, within 10 working days following the termination of this Agreement, the Customer shall permanently isolate the BAT and any associated equipment from the Company's electric supply system, notify the Company that the isolation is complete, allow the Company's inspection of the isolation and coordinate with the Company for return of the Company's lock.

21. This Agreement supersedes all previous agreements and representations either written or verbal heretofore made between the Company and Customer with respect to matters herein contained. This Agreement, when duly executed, constitutes the only Agreement between parties hereto relative to the matters herein described.

22. This Agreement shall inure to the benefit of and be binding upon the respective heirs, legal representatives, successors and assigns of the parties hereto. If this agreement is assigned, the Customer shall notify the Company prior to the effective date of the assignment.

IN WITNESS WHEREOF, Customer and the Company have executed this Agreement the day and year first above written.

SIGNATURE: _____ CUSTOMER
By: _____
Its: _____

SIGNATURE: _____ COMPANY
By: _____
Its: _____

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 15 OF 16



ORIGINAL SHEET NO. 8.1180

**AGREEMENT ADOPTING
STANDARD INTERCONNECTION AGREEMENT
FOR INTERCONNECTED CUSTOMER-OWNED BATTERY SUBSYSTEMS**

THIS AGREEMENT is entered into by and between Tampa Electric Company ("Tampa Electric") and
("Customer"), whose address is

_____.

WHEREAS, Customer rents property from

(Name of Property Owner) ("Property Owner") located at the following address:

_____.

("The Premises"); and

WHEREAS, Property Owner and Tampa Electric are parties to a Standard Interconnection Agreement for an Interconnected Customer-Owned Battery Subsystem (SIA) located at the Premises; and

WHEREAS, pursuant to the lease/rental agreement between Customer and Property Owner, Customer is entitled to the use and benefit of the renewable generation located at the Premises; and

WHEREAS, Tampa Electric and Customer recognize that, for the mutual protection and benefit of Customer, Tampa Electric, Property Owner and the general public, Customer must abide by all of the terms, conditions and obligations of Property Owner set forth in the SIA that relate to safety and govern the use, operation and maintenance of the Battery Subsystem located at the Premises.

Continued to Sheet No. 8.1185

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE:

TAMPA ELECTRIC COMPANY
EXHIBIT A
PAGE 16 OF 16



ORIGINAL SHEET NO. 8.1185

Continued from Sheet No. 8.1180

In recognition of the foregoing and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, Tampa Electric and Customer agree as follows:

1. Attached hereto as Exhibit "A" is the SIA entered into by and between Tampa Electric and Property Owner regarding the interconnection of the Interconnected Customer-Owned Battery Subsystem located at the Premises.
2. Customer agrees to abide by and comply with all applicable provisions of the SIA attached as Exhibit "A" that relate to safety and that govern the use, operation and maintenance of the Battery Subsystem located at the Premises.
3. This Agreement shall remain in effect for the duration of Customer's rental and control of the Premises.

DATED this _____ day of _____.

TAMPA ELECTRIC COMPANY

Customer

By: _____

ISSUED BY: N. G. Tower, President

DATE EFFECTIVE: