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November 1, 2019

**VIA ELECTRONIC FILING**

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

Re: *Petition for Approval of a New Depreciation Class and Rate for Energy Storage Equipment by Duke Energy Florida, LLC.*;  
Docket No. 20190183-EI

Dear Mr. Teitzman:

On behalf of Duke Energy Florida, LLC ("DEF"), please find enclosed for electronic filing in the above-referenced docket, DEF's Response to Staff's First Data Request (Nos. 1-11) and Documents Request (Nos. 1-2).

Thank you for your attention to this matter. Please feel free to call me at (850) 521-1428 should you have any questions concerning this filing.

Sincerely,

*/s/ Matthew R. Bernier*

Matthew R. Bernier

MRB/cmkn  
Enclosure

cc: Suzanne Brownless, FPSC  
J. R. Kelly, OPC

**Duke Energy Florida, LLC's (DEF) Response to Staff's First Data Request (Nos. 1-11) and First Documents Request (Nos. 1-2) Regarding DEF's Petition for Approval of a New Depreciation Class and Rate for Energy Storage Equipment**

**Docket No. 20190183-EI**

**Data Requests**

1. Please generally describe the type(s) of batteries contemplated and/or planned for use in effectuating Duke Energy Florida's (DEF) 50 MW Battery Storage Pilot Program (Battery Storage Pilot). Please also note the function (i.e. production, transmission, distribution) if dissimilar assets will be used in each depreciable plant category.

**RESPONSE:**

**DEF is still evaluating the type(s) of batteries to be used as part of the 50 MW Battery Storage Pilot Program. Our present focus is on lithium ion batteries, which are the most flexible, mature, and proven battery technology currently available for utility applications.**

**DEF anticipates using battery energy storage systems for multiple functions which could be classified as production, transmission, or distribution. Further details of the specific functions include, but are not limited to:**

- **Production: DEF may use storage to capture clipped solar energy and/or provide peak shaving.**
- **Transmission: DEF may use storage to provide ancillary services, such as frequency response.**
- **Distribution: DEF may use storage as an alternative investment to traditional distribution investments associated with load growth or improving power quality and reliability on both blue-sky days and in response to extreme weather events.**

2. How many batteries by type does DEF intend to install in order to achieve the full 50 MW of battery storage?

**RESPONSE:**

**DEF has not identified the specific type of batteries at this time, but anticipates using lithium ion technology across most, if not all, projects associated with the 50 MW Battery Storage Pilot Program.**

3. Has the Company begun installing any batteries and/or energy storage,-associated equipment? If so, please identify the types of assets installed, dates of installation, number of MWs, and installation locations.

**RESPONSE:**

**To date, DEF has not yet begun to install any batteries and/or energy storage-associated equipment associated with the 50 MW Battery Storage Pilot Program.**

4. Please identify any currently scheduled installations of battery and/or energy storage-associated equipment.

**RESPONSE:**

**DEF has tentatively scheduled the following installations, subject to completing a competitive procurement process for Engineering, Procurement, and Construction (EPC) of each project and receiving final interconnection study results.**

- **Cape San Blas Energy Storage System (5.5 MW, 4Q 2020)**
- **Jennings Energy Storage System (5.5 MW, 4Q 2020)**
- **Micanopy Energy Storage System (8.25 MW, 4Q 2020)**
- **Trenton Energy Storage System (11 MW, 4Q 2020)**

**The remaining 19.75 MW have not been scheduled at this time.**

5. Is DEF currently recording any plant depreciation associated with its Battery Storage Pilot?
- a. If the response to Request No. 5 is affirmative, is the company requesting any plant in service and accumulated depreciation transfers be performed as part of this docket?
- b. If the response to Request No. 5(a.) is affirmative, please specify: amounts to be transferred; accounts in which the property/balances are currently being depreciated; and accounts to which the property/balances are being transferred to.

**RESPONSE:**

**No. DEF is not currently recording any plant depreciation associated with its Battery Storage Pilot.**

6. Has DEF projected a date or timeframe when full implementation of the 50 MW Battery Storage Pilot will be achieved? If so, please specify the date or timeframe.

**RESPONSE:**

**Yes, DEF expects to have the full 50 MW Battery Storage Pilot implemented by December 31, 2021.**

7. Has DEF estimated the total capital cost associated with the full 50 MW of battery storage? If so, please specify.

**RESPONSE:**

**No. DEF is still evaluating sites and applications for purposes of the 50 MW Battery Storage Pilot Program and therefore does not have a total capital cost associated with the full 50 MW of battery storage. As specified in the 2017 Settlement Agreement (Order No. PSC-2017-0451-AS-EU, Docket No. 20170183-EI), DEF is designing projects that will allow it to stay within an average cost that does not exceed \$2,300/kW AC.**

8. Please refer to paragraph (4) of DEF's Petition for Approval of a New Depreciation Class and Rate for Energy Storage Equipment (Petition). Please elaborate on how battery/energy storage may "enhance" service for retail customers, and/or operations of existing or planned solar facilities?

**RESPONSE:**

**Battery/energy storage may "enhance" service for retail customers in many different ways including, but not limited to increasing the efficiency of bulk power system operations (through peak load shaving and ancillary services) and improving power quality and reliability on both blue-sky days and in response to extreme weather events. Battery/energy storage may also "enhance" operations of existing or planned solar facilities by capturing clipped solar energy that would otherwise be lost, decreasing ramp rates associated with solar PV intermittency, and by improving predictability of available generation capacity.**

9. Please refer to paragraph (4) of DEF's Petition. Please list all known items which constitute "necessary equipment to connect such batteries to DEF's electric system."

**RESPONSE:**

**Necessary equipment to connect batteries to DEF's electric system may include, but are not limited to: fuses, disconnect switches, utility poles, conduit and electrical wiring, conductors, breakers, switchgear, protection/controls equipment, metering, communications interface, SCADA controls and integration to operations systems, inverters, transformers, enclosures, safety equipment, HVAC systems, and spare parts.**

10. Please refer to paragraph (5) of DEF's Petition. Please provide a hypothetical accounting example of how DEF would "allocate a single asset to multiple functions."

**RESPONSE:**

**DEF plans to allocate a single battery storage asset into multiple functions based on its planned usage of the battery storage assets at the inception of the project. DEF**

**will not revise this initial allocation of the battery storage assets unless the actual usage differs significantly from the planned usage. In cases where the battery storage asset is being used as an alternative to a traditional asset (production, transmission, or distribution), DEF will allocate a single battery storage asset into the function (or classification) of the traditional asset being displaced.**

**For example, DEF might install battery storage assets at one of its solar sites where DEF plans to use the installed battery storage assets primarily for peak shaving (i.e., charging batteries at non-peak times and discharging at peak times) and on occasion for frequency support. Peak shaving would be considered a generation function and frequency support would be considered a transmission function. If DEF concludes that it would use the battery storage assets 90% of the time for peak shaving and 10% of the time for frequency regulation, then such allocation would be applied to the costs of the battery storage assets at the inception of such project.**

**As another example, DEF might install a battery storage asset on a distribution feeder to displace or defer a distribution substation upgrade/expansion. Although the battery storage asset may also be used for peak shaving and/or frequency response, the primary justification for the project was for distribution and therefore 100% of the costs would be allocated to FERC Account 363 Energy Storage Equipment-Distribution.**

11. Please refer to paragraph (5) of DEF's Petition. According to the Company: "DEF consulted with its engineering subject matter experts, original equipment manufacturers for energy storage equipment and benchmarked with industry peers to conclude that a ten (10) year estimated useful life and net salvage of 0% is reasonable and appropriate."
  - a. Please identify the "subject matter experts" being referenced in this passage.
  - b. Please identify the "original equipment manufacturers" being referenced in this passage.
  - c. Concerning data request 12(b.) above, will the batteries/energy storage equipment carry a warranty when purchased from the manufacturers? If so, please specify or approximate the typical warranty period.
  - d. Please identify the "industry peers" being referenced in this passage.

**RESPONSE:**

- a. **The subject matter experts being referenced are engineers from DEF who have detailed knowledge of energy storage assets and their various uses.**
- b. **The original equipment manufacturer being referenced in paragraph (5) is Samsung.**
- c. **To date, DEF has not contracted for the batteries/energy storage equipment; however, would expect a minimum 2-year warranty from the manufacturer.**

**d. Industry peers include Florida Power & Light.**

**Documents Request**

1. Please provide any documents the Company utilized in developing its proposed 10-year average service life and zero percent net salvage depreciation parameter request.

**RESPONSE:** DEF referenced FPL's response to staff's first data request and document request filed on 6/19/2017 (Document No. 05395-17 of Docket No. 20170097-EI, FPL's Petition for Approval of a New Depreciation and Rate for Energy Storage Equipment) which was approved via Consummating Order PSC-2017-0395-CO-EI on 10/17/2017. Please refer to the documents referenced on page 14.

2. Please provide any documents the Company may have in support of its response to Data Request No. 12.

**RESPONSE:** DEF did not use any additional documents in support of responses to Data Request No. 11<sup>1</sup> besides those referenced in Document Request No. 1.

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<sup>1</sup> Please note, DEF believes this request for production sought documents related to DEF's response to data request number 11 and answered on that basis.