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April 30, 2018

VIA: ELECTRONIC FILING

Ms. Carlotta S. Stauffer
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

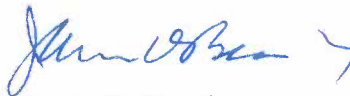
Re: Petition for approval of revisions to standard offer contract and rate schedule
COG-2, by Tampa Electric Company; Docket No. 20180082-EQ.

Dear Ms. Stauffer:

Attached for filing in the above docket are Tampa Electric Company's responses to
Staff's First Data Request (No. 1) dated April 10, 2018.

Thank you for your assistance in connection with this matter.

Sincerely,



James D. Beasley

JDB/pp
Attachment

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 1 OF 7
FILED: APRIL 30, 2018**

1. Please complete the following table describing payments to a renewable provider based on the proposed tariffs included in the Utility's revised standard offer contract. Assume a renewable generator with a 50 MW output providing firm capacity with an in-service date of January 1, 2019, operating at the minimum capacity factor required for full capacity payments and a contract duration of 20 years. Please state the capacity factor assumed for the calculations. Calculate the total Net Present Value (NPV) of all payments in 2019 dollars, and also provide an explanation of the method and rate used to calculate the NPV.

Please provide the completed table for each of the following five scenarios:

- As-available energy (energy only payments)
- Normal capacity payments
- Levelized payments
- Early payments
- Early levelized payments

Year	Energy (MWh)	Capacity Rate (\$/kw-mo)	Total Capacity Payments (\$)	Energy Rate (\$/MWh)	Total Energy Payments (\$)	Total Payments (\$)	Year Energy
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							
2035							
2036							
2037							
2038							
Total (nominal)							
Total (NPV)							

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 2 OF 7
FILED: APRIL 30, 2018**

- A.** The payments for capacity and energy from a 50 MW a renewable facility with an in-service date of January 1, 2019 under the various options (i.e., as-available only, standard, levelized, early, and early levelized) are provided in the tables on Pages 3 through 7 of 7.

The payments are based on the renewable facility operating at an 80% capacity factor which is the minimum performance standard. The Monthly Capacity Factor for the period April 1st through October 31st shall be defined as the sum of 80% of the Monthly Average On-Peak Operating Factor plus 20% of the Monthly Average Off-peak Operating Factor. The Monthly Capacity Factor for the period November 1st through March 31st shall be defined as the sum of 90% of the Monthly Average On-peak Operating Factor plus 10% of the Monthly Average Off-peak Operating Factor.

To determine if the sums of the payment streams of the various payment methods were equal on a Net Present Value or Net Present Worth basis, the company multiplied the payment in each year by the Present Worth Factor which is calculated as follows:

$$\frac{1}{(1+i)^n}$$

Where:

i = discount rate = 7.080 %
n = (payment year – 2019)

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 3 OF 7
FILED: APRIL 30, 2018**

Payment Type: As-Available (Energy Only)
Committed Capacity: 50 MW
Capacity Factor: 80%

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2019	350,400	-	-	26.01	9,114,947	9,114,947
2020	351,360	-	-	28.84	10,134,533	10,134,533
2021	350,400	-	-	28.64	10,036,307	10,036,307
2022	350,400	-	-	29.88	10,469,453	10,469,453
2023	350,400	-	-	31.36	10,988,360	10,988,360
2024	351,360	-	-	31.92	11,216,107	11,216,107
2025	350,400	-	-	34.92	12,234,773	12,234,773
2026	350,400	-	-	36.42	12,763,040	12,763,040
2027	350,400	-	-	37.74	13,222,533	13,222,533
2028	351,360	-	-	41.98	14,749,240	14,749,240
2029	350,400	-	-	44.26	15,509,253	15,509,253
2030	350,400	-	-	48.47	16,982,200	16,982,200
2031	350,400	-	-	50.71	17,767,387	17,767,387
2032	351,360	-	-	55.43	19,476,173	19,476,173
2033	350,400	-	-	57.03	19,982,187	19,982,187
2034	350,400	-	-	62.13	21,771,893	21,771,893
2035	350,400	-	-	64.58	22,629,493	22,629,493
2036	351,360	-	-	66.20	23,258,840	23,258,840
2037	350,400	-	-	71.55	25,072,400	25,072,400
2038	350,400	-	-	70.37	24,657,547	24,657,547
Total (Nominal)	7,012,800		-		322,036,667	322,036,667
Total NPV (\$2018)					159,832,789	159,832,789

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 4 OF 7
FILED: APRIL 30, 2018**

Payment Type: Normal
Committed Capacity: 50 MW
Capacity Factor: 80%

Year	Energy	Capacity Rate	Total Capacity Payments ⁽¹⁾	Energy Rate ⁽²⁾	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2019	350,400	-	-	26.01	9,114,947	9,114,947
2020	351,360	-	-	28.84	10,134,533	10,134,533
2021	350,400	-	-	28.64	10,036,307	10,036,307
2022	350,400	-	-	29.88	10,469,453	10,469,453
2023	350,400	4.95	1,979,872	32.11	11,251,081	13,230,953
2024	351,360	5.07	3,017,325	32.63	11,463,924	14,481,249
2025	350,400	5.19	3,089,740	35.52	12,446,111	15,535,851
2026	350,400	5.31	3,163,894	37.20	13,034,741	16,198,635
2027	350,400	5.44	3,239,828	38.51	13,494,459	16,734,286
2028	351,360	5.57	3,317,584	42.67	14,991,631	18,309,214
2029	350,400	5.71	3,397,206	45.46	15,930,154	19,327,359
2030	350,400	5.84	3,478,738	50.37	17,649,519	21,128,258
2031	350,400	5.98	3,562,228	52.64	18,446,293	22,008,521
2032	351,360	6.13	3,647,722	57.31	20,137,273	23,784,994
2033	350,400	6.27	3,735,267	59.35	20,797,395	24,532,662
2034	350,400	6.43	3,824,913	64.78	22,697,448	26,522,362
2035	350,400	6.58	3,916,711	67.67	23,711,167	27,627,878
2036	351,360	6.74	4,010,712	69.64	24,469,768	28,480,480
2037	350,400	6.90	4,106,970	75.66	26,512,971	30,619,940
2038	350,400	7.06	4,205,537	75.83	26,572,114	30,777,650
Total (Nominal)	7,012,800		55,694,247		333,361,288	389,055,535
Total NPV (\$2018)			26,401,484		164,230,274	190,631,758

(1) The capacity payment under the Normal payment option begins January 1st of 2023 which is the in-service date of the avoided unit.

(2) The energy rate beginning in 2023 is a weighted blend based on the projected capacity factor of the avoided unit, the estimated avoided unit energy rate, and the estimated as-available energy rate.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 5 OF 7
FILED: APRIL 30, 2018**

Payment Type: Levelized
Committed Capacity: 50 MW
Capacity Factor: 80%

Year	Energy	Capacity Rate	Total Capacity Payments ⁽¹⁾	Energy Rate ⁽²⁾	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2019	350,400	-	-	26.01	9,114,947	9,114,947
2020	351,360	-	-	28.84	10,134,533	10,134,533
2021	350,400	-	-	28.64	10,036,307	10,036,307
2022	350,400	-	-	29.88	10,469,453	10,469,453
2023	350,400	5.67	2,266,045	32.11	11,251,081	13,517,127
2024	351,360	5.68	3,404,076	32.63	11,463,924	14,868,000
2025	350,400	5.69	3,411,708	35.52	12,446,111	15,857,819
2026	350,400	5.70	3,419,524	37.20	13,034,741	16,454,264
2027	350,400	5.72	3,427,527	38.51	13,494,459	16,921,985
2028	351,360	5.73	3,435,722	42.67	14,991,631	18,427,352
2029	350,400	5.74	3,444,113	45.46	15,930,154	19,374,267
2030	350,400	5.76	3,452,706	50.37	17,649,519	21,102,225
2031	350,400	5.77	3,461,506	52.64	18,446,293	21,907,799
2032	351,360	5.79	3,470,516	57.31	20,137,273	23,607,789
2033	350,400	5.80	3,479,743	59.35	20,797,395	24,277,138
2034	350,400	5.82	3,489,191	64.78	22,697,448	26,186,639
2035	350,400	5.84	3,498,866	67.67	23,711,167	27,210,033
2036	351,360	5.85	3,508,773	69.64	24,469,768	27,978,541
2037	350,400	5.87	3,518,918	75.66	26,512,971	30,031,889
2038	350,400	5.89	3,529,306	75.83	26,572,114	30,101,420
Total (Nominal)	7,012,800		54,218,240		333,361,288	387,579,528
Total NPV (\$2018)			26,401,444		164,230,274	190,631,718

(1) The capacity payment under the Normal payment option begins January 1st of 2023 which is the in-service date of the avoided unit.

(2) The energy rate beginning in 2023 is a weighted blend based on the projected capacity factor of the avoided unit, the estimated avoided unit energy rate, and the estimated as-available energy rate.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 6 OF 7
FILED: APRIL 30, 2018**

Payment Type: Early
Committed Capacity: 50 MW
Capacity Factor: 80%

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate ⁽¹⁾	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2019	350,400	3.25	1,952,764	26.01	9,114,947	11,067,711
2020	351,360	3.33	1,999,631	28.84	10,134,533	12,134,164
2021	350,400	3.41	2,047,622	28.64	10,036,307	12,083,928
2022	350,400	3.49	2,096,765	29.88	10,469,453	12,566,218
2023	350,400	3.58	2,147,087	32.11	11,251,081	13,398,168
2024	351,360	3.66	2,198,617	32.63	11,463,924	13,662,542
2025	350,400	3.75	2,251,384	35.52	12,446,111	14,697,495
2026	350,400	3.84	2,305,417	37.20	13,034,741	15,340,158
2027	350,400	3.93	2,360,747	38.51	13,494,459	15,855,206
2028	351,360	4.03	2,417,405	42.67	14,991,631	17,409,036
2029	350,400	4.13	2,475,423	45.46	15,930,154	18,405,577
2030	350,400	4.22	2,534,833	50.37	17,649,519	20,184,352
2031	350,400	4.33	2,595,669	52.64	18,446,293	21,041,962
2032	351,360	4.43	2,657,965	57.31	20,137,273	22,795,238
2033	350,400	4.54	2,721,756	59.35	20,797,395	23,519,151
2034	350,400	4.65	2,787,078	64.78	22,697,448	25,484,527
2035	350,400	4.76	2,853,968	67.67	23,711,167	26,565,135
2036	351,360	4.87	2,922,463	69.64	24,469,768	27,392,232
2037	350,400	4.99	2,992,603	75.66	26,512,971	29,505,573
2038	350,400	5.11	3,064,425	75.83	26,572,114	29,636,539
Total (Nominal)	7,012,800		49,383,623		333,361,288	382,744,911
Total NPV (\$2018)			26,401,261		164,230,274	190,631,535

(1) The energy rate beginning in 2023 is a weighted blend based on the projected capacity factor or the avoided unit, the estimated avoided unit energy rate, and the estimated as-available energy rate.

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20180082-EQ
STAFF'S FIRST DATA REQUEST
REQUEST NO. 1
PAGE 7 OF 7
FILED: APRIL 30, 2018**

Payment Type: Early Levelized
Committed Capacity: 50 MW
Capacity Factor: 80%

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate ⁽¹⁾	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2019	350,400	3.83	2,300,800	26.01	9,114,947	11,415,747
2020	351,360	3.84	2,305,740	28.84	10,134,533	12,440,273
2021	350,400	3.85	2,310,798	28.64	10,036,307	12,347,105
2022	350,400	3.86	2,315,977	29.88	10,469,453	12,785,431
2023	350,400	3.87	2,321,281	32.11	11,251,081	13,572,362
2024	351,360	3.88	2,326,712	32.63	11,463,924	13,790,636
2025	350,400	3.89	2,332,273	35.52	12,446,111	14,778,384
2026	350,400	3.90	2,337,968	37.20	13,034,741	15,372,709
2027	350,400	3.91	2,343,799	38.51	13,494,459	15,838,258
2028	351,360	3.92	2,349,771	42.67	14,991,631	17,341,402
2029	350,400	3.93	2,355,886	45.46	15,930,154	18,286,039
2030	350,400	3.94	2,362,147	50.37	17,649,519	20,011,666
2031	350,400	3.95	2,368,559	52.64	18,446,293	20,814,852
2032	351,360	3.96	2,375,124	57.31	20,137,273	22,512,397
2033	350,400	3.97	2,381,848	59.35	20,797,395	23,179,243
2034	350,400	3.98	2,388,732	64.78	22,697,448	25,086,181
2035	350,400	3.99	2,395,782	67.67	23,711,167	26,106,949
2036	351,360	4.01	2,403,001	69.64	24,469,768	26,872,769
2037	350,400	4.02	2,410,393	75.66	26,512,971	28,923,364
2038	350,400	4.03	2,417,963	75.83	26,572,114	28,990,076
Total (Nominal)	7,012,800		47,104,555		333,361,288	380,465,843
Total NPV (\$2018)			26,401,202		164,230,274	190,631,476

(1) The energy rate beginning in 2023 is a weighted blend based on the projected capacity factor or the avoided unit, the estimated avoided unit energy rate, and the estimated as-available energy rate.