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April 26, 2016

**VIA: ELECTRONIC FILING**

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

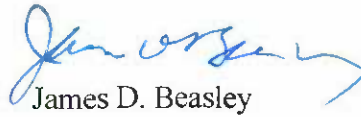
Re: Docket No. 160069-EQ – Petition for approval of revisions to rate schedule COG-2  
for standard offer, by Tampa Electric Company

Dear Ms. Stauffer:

Attached for filing in the above docket is Tampa Electric Company's Responses to Staff's  
First Data Request (No. 1) dated April 12, 2016.

Thank you for your assistance in connection with this matter.

Sincerely,

  
James D. Beasley

JDB/pp  
Attachment

cc: Bianca Y. Lherisson (w/attachment)

**TAMPA ELECTRIC COMPANY  
DOCKET NO. 160069-EI  
STAFF'S FIRST DATA REQUEST  
REQUEST NO. 1  
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1. Please complete the following tables describing payments to a renewable provider based on the proposed tariffs included in TECO's revised standard offer contract. Please assume a renewable generator with a 50 MW output providing firm capacity with an in-service date of January 1, 2017, 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. Please provide an Excel spreadsheet in support of the calculation, and provide the total Net Present Value (NPV) of all payments in 2017 dollars, with an explanation of the method and rate used to calculate the NPV.

Please provide the completed table for the following five scenarios:  
 As-available energy (energy only payments)  
 Normal capacity payments  
 Levelized payments  
 Early payments  
 Early levelized payments

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate	Total Energy Payments	Total Payments
	(MWh)	(\$/kw-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2017						
2018						
2019						
2020						
2021						
2022						
2023						
2024						
2025						
2026						
2027						
2028						
2029						
2030						
2031						
2032						
2033						
2034						
2035						

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2036						
Total (Nominal)						
Total NPV (\$2017)						

- A.** The payments for capacity and energy from a 50 MW a renewable facility with an in-service date of January 1, 2015 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 a 90% capacity factor; however, Tampa Electric’s minimum performance standard for capacity is based on net operating factor making it possible to achieve full capacity payments with less than 90% capacity factor.

To determine if all of the payment streams 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:

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

Where:

i = discount rate = 6.876 %  
n = (payment year – 2017)

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Payment Type: As-Available (Energy Only)  
Committed Capacity: 50 MW  
Capacity Factor: 90%

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2016	395,280	-	-	26.24	10,371,796	10,371,796
2017	394,200	-	-	28.16	11,101,313	11,101,313
2018	394,200	-	-	29.86	11,770,077	11,770,077
2019	394,200	-	-	34.50	13,600,160	13,600,160
2020	395,280	-	-	32.60	12,886,316	12,886,316
2021	394,200	-	-	34.96	13,782,477	13,782,477
2022	394,200	-	-	39.31	15,497,616	15,497,616
2023	394,200	-	-	44.63	17,592,402	17,592,402
2024	395,280	-	-	43.01	16,999,901	16,999,901
2025	394,200	-	-	43.56	17,172,470	17,172,470
2026	394,200	-	-	46.34	18,265,571	18,265,571
2027	394,200	-	-	55.87	22,022,078	22,022,078
2028	395,280	-	-	52.75	20,850,282	20,850,282
2029	394,200	-	-	54.56	21,507,764	21,507,764
2030	394,200	-	-	62.78	24,747,902	24,747,902
2031	394,200	-	-	57.78	22,777,767	22,777,767
2032	395,280	-	-	67.23	26,573,175	26,573,175
2033	394,200	-	-	71.24	28,083,393	28,083,393
2034	394,200	-	-	73.65	29,033,764	29,033,764
2035	394,200	-	-	69.44	27,372,596	27,372,596
Total (Nominal)	7,889,400		-		382,008,820	382,008,820
Total NPV (\$2017)					192,529,518	192,529,518

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Payment Type: Normal  
Committed Capacity: 50 MW  
Capacity Factor: 90%

Year	Energy	Capacity Rate	Total Capacity Payments <sup>(1)</sup>	Energy Rate <sup>(2)</sup>	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2017	395,280	-	-	26.24	10,371,796	10,371,796
2018	394,200	-	-	28.16	11,101,313	11,101,313
2019	394,200	-	-	29.86	11,770,077	11,770,077
2020	394,200	6.41	2,562,027	34.56	13,625,118	16,187,146
2021	395,280	6.56	3,906,653	32.77	12,954,630	16,861,283
2022	394,200	6.73	4,003,651	35.36	13,940,206	17,943,856
2023	394,200	6.89	4,103,057	39.47	15,560,006	19,663,063
2024	394,200	7.07	4,204,933	44.83	17,670,314	21,875,246
2025	395,280	7.24	4,309,338	43.28	17,108,005	21,417,343
2026	394,200	7.42	4,416,336	43.91	17,308,529	21,724,866
2027	394,200	7.60	4,525,992	46.69	18,404,120	22,930,112
2028	394,200	7.79	4,638,371	56.25	22,171,897	26,810,268
2029	395,280	7.99	4,753,541	53.56	21,170,222	25,923,763
2030	394,200	8.19	4,871,571	55.29	21,796,835	26,668,407
2031	394,200	8.39	4,992,533	63.29	24,949,563	29,942,096
2032	394,200	8.60	5,116,499	58.95	23,236,587	28,353,086
2033	395,280	8.81	5,243,543	68.39	27,032,757	32,276,300
2034	394,200	9.03	5,373,743	72.73	28,670,677	34,044,420
2035	394,200	9.25	5,507,177	74.07	29,198,100	34,705,277
2036	394,200	9.48	5,643,924	70.85	27,929,812	33,573,736
<b>Total (Nominal)</b>	<b>7,889,400</b>		<b>78,172,890</b>		<b>385,970,564</b>	<b>464,143,453</b>
<b>Total NPV (\$2016)</b>			<b>37,368,925</b>		<b>194,138,481</b>	<b>231,507,406</b>

(1) The capacity payment under the Normal payment option begins May 1st of 2021 which is the in-service date of the avoided unit. Each successive year's payment is based on four months at the previous year's \$/kW-mo rate and eight months at the current year's \$/kW-mo. rate.

(2) The energy rate beginning in 2021 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.

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Payment Type: Levelized  
Committed Capacity: 50 MW  
Capacity Factor: 90%

Year	Energy	Capacity Rate	Total Capacity Payments <sup>(1)</sup>	Energy Rate <sup>(2)</sup>	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2017	395,280	-	-	26.24	10,371,796	10,371,796
2018	394,200	-	-	28.16	11,101,313	11,101,313
2019	394,200	-	-	29.86	11,770,077	11,770,077
2020	394,200	7.34	2,937,138	34.56	13,625,118	16,562,256
2021	395,280	7.37	4,416,236	32.77	12,954,630	17,370,866
2022	394,200	7.40	4,432,282	35.36	13,940,206	18,372,488
2023	394,200	7.42	4,448,713	39.47	15,560,006	20,008,719
2024	394,200	7.45	4,465,539	44.83	17,670,314	22,135,853
2025	395,280	7.48	4,482,768	43.28	17,108,005	21,590,774
2026	394,200	7.51	4,500,411	43.91	17,308,529	21,808,940
2027	394,200	7.54	4,518,477	46.69	18,404,120	22,922,597
2028	394,200	7.57	4,536,977	56.25	22,171,897	26,708,874
2029	395,280	7.60	4,555,921	53.56	21,170,222	25,726,143
2030	394,200	7.64	4,575,320	55.29	21,796,835	26,372,155
2031	394,200	7.67	4,595,184	63.29	24,949,563	29,544,747
2032	394,200	7.70	4,615,524	58.95	23,236,587	27,852,111
2033	395,280	7.74	4,636,353	68.39	27,032,757	31,669,110
2034	394,200	7.77	4,657,682	72.73	28,670,677	33,328,359
2035	394,200	7.81	4,679,523	74.07	29,198,100	33,877,623
2036	394,200	7.85	4,701,888	70.85	27,929,812	32,631,700
<b>Total (Nominal)</b>	7,889,400		75,755,938		385,970,564	461,726,501
<b>Total NPV (\$2016)</b>			37,368,927		194,138,481	231,507,407

1) The capacity payment under the Levelized payment option begins May 1st of 2021 which is the in-service date of the avoided unit. Each successive year's payment is based on four months at the previous year's \$/kW-mo rate and eight months at the current year's \$/kW-mo. rate.

(2) The energy rate beginning in 2021 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.

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Payment Type: Early  
Committed Capacity: 50 MW  
Capacity Factor: 90%

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate <sup>(1)</sup>	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2017	395,280	4.54	2,724,576	26.24	10,371,796	13,096,372
2018	394,200	4.65	2,792,223	28.16	11,101,313	13,893,537
2019	394,200	4.77	2,861,551	29.86	11,770,077	14,631,627
2020	394,200	4.89	2,932,600	34.56	13,625,118	16,557,718
2021	395,280	5.01	3,005,413	32.77	12,954,630	15,960,043
2022	394,200	5.13	3,080,035	35.36	13,940,206	17,020,241
2023	394,200	5.26	3,156,510	39.47	15,560,006	18,716,516
2024	394,200	5.39	3,234,885	44.83	17,670,314	20,905,198
2025	395,280	5.53	3,315,205	43.28	17,108,005	20,423,211
2026	394,200	5.66	3,397,521	43.91	17,308,529	20,706,050
2027	394,200	5.80	3,481,881	46.69	18,404,120	21,886,000
2028	394,200	5.95	3,568,336	56.25	22,171,897	25,740,233
2029	395,280	6.09	3,656,938	53.56	21,170,222	24,827,160
2030	394,200	6.25	3,747,741	55.29	21,796,835	25,544,576
2031	394,200	6.40	3,840,799	63.29	24,949,563	28,790,362
2032	394,200	6.56	3,936,168	58.95	23,236,587	27,172,754
2033	395,280	6.72	4,033,905	68.39	27,032,757	31,066,662
2034	394,200	6.89	4,134,070	72.73	28,670,677	32,804,747
2035	394,200	7.06	4,236,723	74.07	29,198,100	33,434,823
2036	394,200	7.24	4,341,926	70.85	27,929,812	32,271,738
<b>Total (Nominal)</b>	7,889,400		69,479,005		385,970,564	455,449,568
<b>Total NPV (\$2016)</b>			37,368,925		194,138,481	231,507,406

(1) The energy rate beginning in 2021 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.

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Payment Type: Early Levelized  
Committed Capacity: 50 MW  
Capacity Factor: 90%

Year	Energy	Capacity Rate	Total Capacity Payments	Energy Rate <sup>(1)</sup>	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2017	395,280	5.33	3,197,749	26.24	10,371,796	13,569,544
2018	394,200	5.35	3,208,957	28.16	11,101,313	14,310,270
2019	394,200	5.37	3,220,434	29.86	11,770,077	14,990,511
2020	394,200	5.39	3,232,186	34.56	13,625,118	16,857,305
2021	395,280	5.41	3,244,221	32.77	12,954,630	16,198,851
2022	394,200	5.43	3,256,544	35.36	13,940,206	17,196,750
2023	394,200	5.45	3,269,163	39.47	15,560,006	18,829,169
2024	394,200	5.47	3,282,085	44.83	17,670,314	20,952,399
2025	395,280	5.49	3,295,318	43.28	17,108,005	20,403,323
2026	394,200	5.51	3,308,867	43.91	17,308,529	20,617,396
2027	394,200	5.54	3,322,742	46.69	18,404,120	21,726,862
2028	394,200	5.56	3,336,950	56.25	22,171,897	25,508,847
2029	395,280	5.59	3,351,499	53.56	21,170,222	24,521,721
2030	394,200	5.61	3,366,397	55.29	21,796,835	25,163,232
2031	394,200	5.64	3,381,653	63.29	24,949,563	28,331,216
2032	394,200	5.66	3,397,274	58.95	23,236,587	26,633,861
2033	395,280	5.69	3,413,271	68.39	27,032,757	30,446,028
2034	394,200	5.72	3,429,652	72.73	28,670,677	32,100,329
2035	394,200	5.74	3,446,425	74.07	29,198,100	32,644,525
2036	394,200	5.77	3,463,602	70.85	27,929,812	31,393,414
<b>Total (Nominal)</b>	7,889,400		66,424,989		385,970,564	452,395,553
<b>Total NPV (\$2016)</b>			37,368,925		194,138,481	231,507,406

(1) The energy rate beginning in 2021 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.