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April 17, 2019

**VIA: ELECTRONIC FILING**

Mr. Adam J. Teitzman  
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. 20190077-EQ

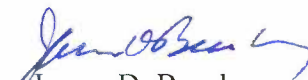
Dear Mr. Teitzman:

Attached for filing in the above docket are Tampa Electric Company's revised responses to Staff's First Data Request (No. 1) dated April 4, 2019. These revised responses correct the Docket Number in the header of each page to show Docket No. 2019077-EQ, as opposed to 20180077-EQ in the company's original filing. Also, this filing corrects Bates stamp page 3, As -Available (Energy Only) payments chart by eliminating the double reference to Year 2038 as contained in the original filing.

We would appreciate your substituting these revised responses in place of those submitted on April 15, 2019, and circulating the revised responses to Commission recipients of the original filing.

Thank you for your assistance in connection with this matter.

Sincerely,

  
James D. Beasley

JDB/pp  
Attachment

**TAMPA ELECTRIC COMPANY  
DOCKET NO. 20190077-EQ  
STAFF'S FIRST DATA REQUEST  
REQUEST NO. 1  
PAGE 1 OF 7  
FILED: APRIL 15, 2019  
REVISED: APRIL 17, 2019**

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, 2020, 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 2020 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
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							
2035							
2036							
2037							
2038							
2039							
Total (nominal)							
Total (NPV)							

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- A. The payments for capacity and energy from a 50 MW a renewable facility with an in-service date of January 1, 2020 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 1<sup>st</sup> through October 31<sup>st</sup> 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 1<sup>st</sup> through March 31<sup>st</sup> 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 = 7.012 %  
n = (payment year – 2020)

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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)	(\$)	(\$)
2020	350,400	-	-	28.12	9,851,760	9,851,760
2021	351,360	-	-	25.90	9,101,107	9,101,107
2022	350,400	-	-	26.35	9,234,147	9,234,147
2023	350,400	-	-	27.72	9,712,200	9,712,200
2024	350,400	-	-	27.57	9,662,267	9,662,267
2025	351,360	-	-	29.60	10,400,920	10,400,920
2026	350,400	-	-	31.05	10,880,627	10,880,627
2027	350,400	-	-	32.68	11,450,320	11,450,320
2028	350,400	-	-	35.45	12,421,707	12,421,707
2029	351,360	-	-	38.19	13,419,440	13,419,440
2030	350,400	-	-	40.05	14,034,933	14,034,933
2031	350,400	-	-	41.92	14,688,160	14,688,160
2032	350,400	-	-	43.72	15,320,613	15,320,613
2033	351,360	-	-	46.03	16,173,987	16,173,987
2034	350,400	-	-	48.53	17,003,307	17,003,307
2035	350,400	-	-	50.00	17,519,707	17,519,707
2036	350,400	-	-	54.01	18,925,427	18,925,427
2037	351,360	-	-	54.77	19,243,120	19,243,120
2038	350,400	-	-	58.23	20,402,960	20,402,960
2039	350,400	-	-	59.70	20,917,547	20,917,547
<b>Total (Nominal)</b>	7,012,800	-	-		280,364,253	280,364,253
<b>Total NPV (\$2020)</b>					164,768,480	164,768,480

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

Year	Energy	Capacity Rate	Total Capacity Payments <sup>(1)</sup>	Energy Rate	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2020	350,400	-	-	28.12	9,851,760	9,851,760
2021	351,360	-	-	25.90	9,101,107	9,101,107
2022	350,400	-	-	26.35	9,234,147	9,234,147
2023	350,400	4.66	2,798,645	27.72	9,712,200	12,510,845
2024	350,400	4.76	2,857,717	27.57	9,662,267	12,519,984
2025	351,360	4.86	2,918,037	29.60	10,400,920	13,318,957
2026	350,400	4.97	2,979,630	31.05	10,880,627	13,860,257
2027	350,400	5.07	3,042,524	32.68	11,450,320	14,492,844
2028	350,400	5.18	3,106,745	35.45	12,421,707	15,528,452
2029	351,360	5.29	3,172,322	38.19	13,419,440	16,591,762
2030	350,400	5.40	3,239,284	40.05	14,034,933	17,274,217
2031	350,400	5.51	3,307,659	41.92	14,688,160	17,995,819
2032	350,400	5.63	3,377,478	43.72	15,320,613	18,698,092
2033	351,360	5.75	3,448,772	46.03	16,173,987	19,622,758
2034	350,400	5.87	3,521,570	48.53	17,003,307	20,524,877
2035	350,400	5.99	3,595,905	50.00	17,519,707	21,115,612
2036	350,400	6.12	3,671,810	54.01	18,925,427	22,597,237
2037	351,360	6.25	3,749,318	54.77	19,243,120	22,992,438
2038	350,400	6.38	3,828,462	58.23	20,402,960	24,231,422
2039	350,400	6.52	3,909,276	59.70	20,917,547	24,826,823
<b>Total (Nominal)</b>	7,012,800		56,525,154		280,364,253	336,889,407
<b>Total NPV (\$2020)</b>			27,391,785		164,768,480	192,160,264

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

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

Year	Energy	Capacity Rate	Total Capacity Payments <sup>(1)</sup>	Energy Rate	Total Energy Payments	Total Payments
	(MWh)	(\$/kW-mo)	(\$)	(\$/MWh)	(\$)	(\$)
2020	350,400	-	-	28.12	9,851,760	9,851,760
2021	351,360	-	-	25.90	9,101,107	9,101,107
2022	350,400	-	-	26.35	9,234,147	9,234,147
2023	350,400	5.36	3,215,441	27.72	9,712,200	12,927,641
2024	350,400	5.36	3,215,441	27.57	9,662,267	12,877,708
2025	351,360	5.36	3,215,441	29.60	10,400,920	13,616,361
2026	350,400	5.36	3,215,441	31.05	10,880,627	14,096,068
2027	350,400	5.36	3,215,441	32.68	11,450,320	14,665,761
2028	350,400	5.36	3,215,441	35.45	12,421,707	15,637,148
2029	351,360	5.36	3,215,441	38.19	13,419,440	16,634,881
2030	350,400	5.36	3,215,441	40.05	14,034,933	17,250,375
2031	350,400	5.36	3,215,441	41.92	14,688,160	17,903,601
2032	350,400	5.36	3,215,441	43.72	15,320,613	18,536,055
2033	351,360	5.36	3,215,441	46.03	16,173,987	19,389,428
2034	350,400	5.36	3,215,441	48.53	17,003,307	20,218,748
2035	350,400	5.36	3,215,441	50.00	17,519,707	20,735,148
2036	350,400	5.36	3,215,441	54.01	18,925,427	22,140,868
2037	351,360	5.36	3,215,441	54.77	19,243,120	22,458,561
2038	350,400	5.36	3,215,441	58.23	20,402,960	23,618,401
2039	350,400	5.36	3,215,441	59.70	20,917,547	24,132,988
<b>Total (Nominal)</b>	7,012,800		54,662,503		280,364,253	335,026,756
<b>Total NPV (\$2020)</b>			27,391,785		164,768,480	192,160,265

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

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Payment Type: Early  
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)	(\$)	(\$)
2020	350,400	3.44	2,061,830	28.12	9,851,760	11,913,590
2021	351,360	3.51	2,105,350	25.90	9,101,107	11,206,457
2022	350,400	3.58	2,149,789	26.35	9,234,147	11,383,936
2023	350,400	3.66	2,195,166	27.72	9,712,200	11,907,366
2024	350,400	3.74	2,241,501	27.57	9,662,267	11,903,768
2025	351,360	3.81	2,288,814	29.60	10,400,920	12,689,734
2026	350,400	3.90	2,337,126	31.05	10,880,627	13,217,753
2027	350,400	3.98	2,386,458	32.68	11,450,320	13,836,778
2028	350,400	4.06	2,436,832	35.45	12,421,707	14,858,539
2029	351,360	4.15	2,488,269	38.19	13,419,440	15,907,709
2030	350,400	4.23	2,540,792	40.05	14,034,933	16,575,726
2031	350,400	4.32	2,594,424	41.92	14,688,160	17,282,584
2032	350,400	4.42	2,649,189	43.72	15,320,613	17,969,802
2033	351,360	4.51	2,705,109	46.03	16,173,987	18,879,096
2034	350,400	4.60	2,762,211	48.53	17,003,307	19,765,517
2035	350,400	4.70	2,820,517	50.00	17,519,707	20,340,224
2036	350,400	4.80	2,880,055	54.01	18,925,427	21,805,482
2037	351,360	4.90	2,940,850	54.77	19,243,120	22,183,970
2038	350,400	5.00	3,002,929	58.23	20,402,960	23,405,889
2039	350,400	5.11	3,066,318	59.70	20,917,547	23,983,865
<b>Total (Nominal)</b>	7,012,800		50,653,532		280,364,253	331,017,785
<b>Total NPV (\$2020)</b>			27,391,785		164,768,480	192,160,264

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Payment Type: Early Levelized  
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)	(\$)	(\$)
2020	350,400	4.03	2,418,369	28.12	9,851,760	12,270,129
2021	351,360	4.03	2,418,369	25.90	9,101,107	11,519,476
2022	350,400	4.03	2,418,369	26.35	9,234,147	11,652,516
2023	350,400	4.03	2,418,369	27.72	9,712,200	12,130,569
2024	350,400	4.03	2,418,369	27.57	9,662,267	12,080,636
2025	351,360	4.03	2,418,369	29.60	10,400,920	12,819,289
2026	350,400	4.03	2,418,369	31.05	10,880,627	13,298,996
2027	350,400	4.03	2,418,369	32.68	11,450,320	13,868,689
2028	350,400	4.03	2,418,369	35.45	12,421,707	14,840,076
2029	351,360	4.03	2,418,369	38.19	13,419,440	15,837,809
2030	350,400	4.03	2,418,369	40.05	14,034,933	16,453,303
2031	350,400	4.03	2,418,369	41.92	14,688,160	17,106,529
2032	350,400	4.03	2,418,369	43.72	15,320,613	17,738,983
2033	351,360	4.03	2,418,369	46.03	16,173,987	18,592,356
2034	350,400	4.03	2,418,369	48.53	17,003,307	19,421,676
2035	350,400	4.03	2,418,369	50.00	17,519,707	19,938,076
2036	350,400	4.03	2,418,369	54.01	18,925,427	21,343,796
2037	351,360	4.03	2,418,369	54.77	19,243,120	21,661,489
2038	350,400	4.03	2,418,369	58.23	20,402,960	22,821,329
2039	350,400	4.03	2,418,369	59.70	20,917,547	23,335,916
<b>Total (Nominal)</b>	7,012,800		48,367,383		280,364,253	328,731,637
<b>Total NPV (\$2020)</b>			27,391,783		164,768,480	192,160,263