



Dianne M. Triplett
Deputy General Counsel
Duke Energy Florida, LLC

August 27, 2018

VIA ELECTRONIC FILING

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

Re: *Duke Energy Florida, LLC's, Petition for approval to terminate qualifying facility power purchase agreement with Ridge Generating Station, L.P.; Docket No. 20180152-EQ*

Dear Ms. Stauffer:

Attached please find Duke Energy Florida, LLC's Response to Staff's First Data Request to be electronically filed in the above-referenced Docket.

Thank you for your attention to this matter. Please feel free to call me at (727) 820-4692 should you have any questions concerning this filing.

Sincerely,

/s/ Dianne M. Triplett

Dianne M. Triplett

DMT/cmck
Attachments

cc: Parties of record

**Duke Energy Florida, LLC's (DEF) Response to Staff's First Data Request
regarding DEF's Petition for approval to terminate qualifying facility
power purchase agreement with Ridge Generating Station, L.P.**

Docket No. 20180152-EQ

1. Please refer to the direct testimony of DEF witness Borsch, page 6, lines 17-23, through page 7, lines 1-7.
 - a. Please identify the source(s) and date(s) of DEF's fuel price forecast referred to in this section of testimony.
 - b. Please identify the date, if known, of DEF's next/updated fuel price forecast that will be used for Company/business planning purposes.
 - c. Please discuss DEF's fuel forecasting methodology. Please also remark on the approximate length of time DEF has employed this same or very similar fuel forecasting methodology for business planning purposes.
 - d. Has DEF compared the fuel price forecast referred to in this section of testimony to any other publically available source of forecasted fuel prices, such as the Energy Information Administration? If so, please discuss the results of any analysis performed.

RESPONSE:

- a. DEF's Fuel price forecast referred to in this section of testimony was developed in the fall of 2017 for use in the 2018 Ten-Year Site Plan. As described in the Ten-Year Site Plan and in DEF's response to Ten-Year Site Plan Supplemental Data Request Question #71, the fuel forecasts are developed from the use of short term spot market prices available from widely used market indices for natural gas and distillate oil. These indices are blended in later years with spot market forecast prices available from DEF's industry recognized fuel price consultant. The methodology for the coal price forecast is similar except that the early year prices are based on DEF's existing coal delivery contracts.
- b. DEF will update the fuel price forecast in the fall of 2018 for the development of the 2019 TYSP.
- c. As discussed in the Ten-Year Site Plan and above, DEF contracts with an industry recognized consultant to prepare a forecast of the future spot prices for key fuels including natural gas, distillate oil, and a variety of coal types based on quality and mine location. The fundamental forecast is a long term proprietary forecast prepared by a nationally recognized third party consulting company. In addition, DEF obtains the spot price based on the NYMEX futures index for natural gas and distillate oil. DEF's fuel purchase and planning teams work with these forecasts to blend the forecasts to account for current market behavior and expected future trends driven by market fundamentals including expected future impacts of such forces as shifts in the national generation mix, development of natural gas export capacity and the potential for carbon emissions regulation. The current DEF forecast relies on the market projection in the initial years and blends the market value with the fundamental forecast over a multi-year period so that the projected prices reach alignment with the fundamental forecast toward the end of

the ten year period. In the case of this analysis, since the remaining life of the Ridge Generating contract is so limited, the forecast relies almost entirely on the observable market (NYMEX) forecast.

- d. Yes. DEF compares its forecast to the Energy Information Administration (EIA) fundamental price forecasts presented in the Annual Energy Outlook. The AEO 2018 forecast of natural gas prices is a fundamental forecast in all years. Under current market conditions, NYMEX contracts (upon which the NYMEX index is based) are being made at essentially constant (flat) prices over the next several years. This reflects current and expected market conditions including a relative surplus of gas supply compared to the demand. As a result, the DEF forecast shows almost no price escalation over the first 4 - 5 years of the period. The EIA forecast begins at a higher value based on what EIA considers to be a market equilibrium price and escalates from year one. DEF's fundamental price beginning beyond year 10 shows a similar escalation rate, but is offset lower to account for DEF's view of the near term market conditions.

- 2. Please refer to the direct testimony of DEF witness Borsch, page 7. Please identify the projected savings amounts that are solely attributed to DEF's forecasted fuel prices from the chart shown in the aforesaid section of testimony.

RESPONSE:

Savings attributed to Fuel Prices	Lower Band 222 GWh	Middle Band 246 GWh	Upper Band 260 GWh
Base Case Fuel	(29)	(32)	(34)
High Fuel Sensitivity	(22)	(24)	(26)

- 3. Please refer to the direct testimony of DEF witness Borsch, Page 6, lines 17-23, through page 7, lines 1-7.
 - a. Please elaborate on the sensitivity analyses DEF performed with regard to forecasted fuel prices in testing the robustness of the projected cost savings.
 - b. How did DEF determine the 33 percent sensitivity level (high fuel price case) was the appropriate level for use in its cumulative present value of revenue requirements (CPVRR) analysis?
 - c. On July 31, 2018, DEF filed with the FPSC, in Docket No. 20180149-EI, a request for a solar generation base rate adjustment (SoBRA) a base fuel forecast along with sensitivity analyses around the base case fuel forecast.¹ Did DEF use the same approximate "33% higher" fuel price sensitivity level in evaluating the cost-effectiveness of its SoBRA request as well? If not, please explain why the same level of sensitivity was not uniform with respect to the high price/case scenarios in both dockets.

¹ Refer to the direct testimony of DEF witness Borsch, Exhibit (BMHB-3).

RESPONSE:

- a. In the Annual Energy Outlook (AEO) prepared by the Energy Information Administration (EIA), in addition to the reference case discussed in the response to Question 1 above, EIA provides scenario cases referred to as the High Oil and Gas Resource and Technology Case and the Low Oil and Gas Resource and Technology Case. These cases provide low and high (respectively) fuel price scenario cases. DEF utilized the Low Resource Scenario case in the development of the high fuel price case for this analysis. Specifically, DEF created a scenario that began with the first 2 years of the NYMEX market price projection and then created a ratio between the DEF reference price and the AEO case price so that the DEF high price sensitivity would be above the DEF reference case by approximately the same percentage as the AEO high price case is above the AEO reference case.
 - b. DEF did not deliberately choose the 33% value, but derived it based on the AEO cases using the approach described above.
 - c. DEF has updated the methodology slightly to better reflect the relative movement of the two price curves in later years, but the general approach has been the same. The 33% value is an approximation based on a sampling of years used in the study. It is expected that the same approximate differential will exist.
4. Please provide the percent error in DEF’s delivered natural gas price forecasts three to five years out using data which supported DEF’s 2010 through 2014 Ten Year Site Plans, per the following tables. Please provide an explanation for any forecast error rate in excess of 20 percent.

Accuracy of Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast Error Rate (%)		
	Years Prior		
	5	4	3
2015			
2016			
2017			
Average			

Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast (\$/MMbtu)		
	Years Prior		
	5	4	3
2015			
2016			
2017			
Average			

Natural Gas Price

Year	Natural Gas Price Annual Actuals (\$/MMbtu)		
	Years Prior		
	5	4	3

2015			
2016			
2017			
Average			

RESPONSE:

See the attached document Q04-20180152-EQ.xlsx; bearing bates number 20180152-DEF-000001.

Forecasts made in 2010 – 2014 underestimated the impact of the then new fracking technology for natural gas extraction. Actual prices for delivered gas in 2008 were above \$10/mmBtu and in some periods above \$12/mmBtu. It took several years for forecast trends to fully encompass the impacts of these new market dynamics in long term forecasts. Thus, DEF, its consultants at the time, EIA, and most industry participants forecast a higher price of gas during that period. As seen in these tables, the gap narrowed significantly over this period as forecasts assimilated the long term effects of changes in technology and market structure.

5. Please provide the percent error in DEF’s delivered coal price forecasts three to five years out using data which supported DEF’s 2010 through 2014 Ten Year Site Plans, per the following tables. Please provide an explanation for any forecast error rate in excess of 15 percent.

Accuracy of Coal Price Forecasts

Year	Coal Price Annual Forecast Error Rate (%)		
	Years Prior		
	5	4	3
2015			
2016			
2017			
Average			

Coal Price Forecasts

Year	Coal Price Annual Forecast (\$/MMbtu)		
	Years Prior		
	5	4	3
2015			
2016			
2017			
Average			

Coal Price

Year	Coal Price Annual Actuals (\$/MMbtu)		
	Years Prior		
	5	4	3

2015			
2016			
2017			
Average			

RESPONSE:

See the attached document Q05-20180152-EQ.xlsx; bearing bates number 20180152-DEF-000002.

6. Please refer to the direct testimony of DEF witness Borsch, page 6, lines 17-18. Please provide a copy of the fuel price forecast referred to in this section of testimony.

RESPONSE:

See the attached document Q06-20180152-EQ.xlsx; bearing bates numbers 20180152-DEF-000003 through 20180152-DEF-000007.

7. Please refer to the direct testimony of DEF witness Borsch, page 6, lines 21-23. Please provide a copy of the high case fuel price forecast (or analysis) referred to in this section of testimony.

RESPONSE:

See the attached document Q07-20180152-EQ.xlsx; bearing bates numbers 20180152-DEF-000008 through 20180152-DEF-000012.

8. Does DEF believe that its request to establish a regulatory asset and recover the Ridge Termination Payment through the Capacity Cost Recovery Clause is consistent with the 2017 Second Revised and Restated Settlement Agreement? Please explain.

RESPONSE:

Yes, the request is consistent with the 2017 Settlement Agreement. Specifically, Paragraph 38(a) of the 2017 Settlement provides: “Nothing shall preclude the Company from requesting the Commission to approve the recovery of the following types of costs: (a) Costs that are of a type which traditionally and historically would be, have been, or are presently recovered through cost recovery clauses or surcharges.” The costs for the Ridge PPA are recovered through the fuel and capacity cost recovery clause, and costs to terminate similar PPAs are recovered through the same clause for other utilities and for another DEF PPA (i.e., FPD).

9. Please provide documents and spreadsheets with formulas intact that DEF used to support its analysis of the CPVRR benefit to customers.

RESPONSE:

See the attached document Q09-20180152-EQ.xlsx; bearing bates numbers 20180152-DEF-000013 through 20180152-DEF-000017 and response to Q10.

10. Please refer to the system impact benefit in Row F, Exhibit BMHB-3, in the direct testimony of DEF witness Borsch.
- a. Please provide the system cost with and without the Ridge PPA.
 - b. Provide the spreadsheets with formulas intact that DEF used to support its analysis.
 - c. Explain whether the energy payment under the PPA is based on the 1991 avoided unit cited in the Ridge PPA.

RESPONSE:

- a. See the attached document Q10-20180152-EQ.xlsx; bearing bates numbers 20180152-DEF-000018 through 20180152-DEF-000030. All values are in millions of dollars unless otherwise indicated.
 - b. See the attached document Q10-20180152-EQ.xlsx; bearing bates numbers 20180152-DEF-000018 through 20180152-DEF-000030. All values are in millions of dollars unless otherwise indicated.
 - c. Yes. The payment structure has been modified in a settlement approved by the PSC along with the coal proxy recently approved by the PSC but the energy payments continue to be based on the avoided 1991 coal unit.
11. Please explain whether the termination agreement will cause any units to be accelerated. As part of your response, provide an update of DEF's reliability reserve margin provided in Schedules 7.1 and 7.2 in DEF's 2017 Ten Year Site Plan.

RESPONSE:

The termination agreement will not cause any units to be accelerated. Ridge's capacity, 39.6 MW, will be covered with the capacity from the existing units and the addition of the Citrus Combined Cycle.

See the attached document Q11-20180152-EQ; bearing bates numbers 20180152-DEF-000031 through 20180152-DEF-000032.

The updated schedules reflect both the termination of the Ridge Generating capacity and the capacity from the termination of the Florida Power Development contract approved by the Commission in docket number 20170274-EI.

12. Please explain the impact of the termination agreement to the fuel mix. As part of your response, provide an update of DEF's fuel mix provided in Schedules 6.1 and 6.2 in DEF's 2017 Ten Year Site Plan.

RESPONSE:

See the attached document Q12-20180152-EQ; bearing bates numbers 20180152-DEF-000033 through 20180152-DEF-000034.

Accuracy of Natural Gas Price Forecast

Year	Natural Gas Price Annual Forecast Error Rate		
	Years Prior		
	5	4	3
2015	77%	46%	19%
2016	73%	42%	29%
2017	41%	31%	23%
Average	64%	39%	24%

Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast (\$/MMbtu)		
	Years Prior		
	5	4	3
2015	8.25	6.82	5.56
2016	7.07	5.80	5.28
2017	6.03	5.56	5.23
Average	7.12	6.06	5.36

Natural Gas Price

Year	Natural Gas Price Annual Actuals (\$/MMbtu)		
	Years Prior		
	5	4	3
2015	4.67	4.67	4.67
2016	4.09	4.09	4.09
2017	4.26	4.26	4.26
Average	4.34	4.34	4.34

Accuracy of Coal Price Forecast

Year	Coal Price Annual Forecast Error Rate		
	Years Prior		
	5	4	3
2015	2%	10%	-3%
2016	17%	3%	-19%
2017	8%	-16%	6%
Average	9%	-1%	-5%

Coal Price Forecasts

Year	Coal Price Annual Forecast (\$/MMbtu)		
	Years Prior		
	5	4	3
2015	3.79	4.07	3.62
2016	4.24	3.74	2.93
2017	3.71	2.89	3.63
Average	3.91	3.57	3.39

Coal Price

Year	Coal Price Actuals/MMbtu)		
	Years Prior		
	5	4	3
2015	3.72	3.72	3.72
2016	3.62	3.62	3.62
2017	3.44	3.44	3.44
Average	3.59	3.59	3.59

Year	COAL PRICE (\$/Mmbtu)	TRANSPORTATION COST (\$/Mmbtu)	DELIVERED COST (\$/Mmbtu)
2018	\$ 0.82	\$ 1.16	\$ 1.99
2019	\$ 0.84	\$ 1.19	\$ 2.04
2020	\$ 0.87	\$ 1.22	\$ 2.10
2021	\$ 0.86	\$ 1.25	\$ 2.11
2022	\$ 0.96	\$ 1.29	\$ 2.25
2023	\$ 1.15	\$ 1.31	\$ 2.47

Date	Base HH Regular Supply Cost	Basis and Transportation (\$/Mmbtu)	Delivered Price (\$/Mmbtu)
1/1/2018	\$ 3.44	\$ 0.145	\$ 3.581
2/1/2018	\$ 3.43	\$ 0.171	\$ 3.604
3/1/2018	\$ 3.38	\$ 0.174	\$ 3.555
4/1/2018	\$ 2.99	\$ 0.145	\$ 3.131
5/1/2018	\$ 2.95	\$ 0.154	\$ 3.101
6/1/2018	\$ 2.97	\$ 0.165	\$ 3.135
7/1/2018	\$ 2.99	\$ 0.166	\$ 3.159
8/1/2018	\$ 3.00	\$ 0.187	\$ 3.182
9/1/2018	\$ 2.97	\$ 0.159	\$ 3.133
10/1/2018	\$ 3.00	\$ 0.160	\$ 3.155
11/1/2018	\$ 3.04	\$ 0.175	\$ 3.219
12/1/2018	\$ 3.18	\$ 0.183	\$ 3.360
1/1/2019	\$ 3.26	\$ 0.187	\$ 3.451
2/1/2019	\$ 3.24	\$ 0.186	\$ 3.430
3/1/2019	\$ 3.18	\$ 0.184	\$ 3.363
4/1/2019	\$ 2.79	\$ 0.162	\$ 2.947
5/1/2019	\$ 2.75	\$ 0.162	\$ 2.911
6/1/2019	\$ 2.77	\$ 0.167	\$ 2.939
7/1/2019	\$ 2.80	\$ 0.178	\$ 2.973
8/1/2019	\$ 2.80	\$ 0.189	\$ 2.988
9/1/2019	\$ 2.79	\$ 0.165	\$ 2.950
10/1/2019	\$ 2.81	\$ 0.162	\$ 2.972
11/1/2019	\$ 2.88	\$ 0.166	\$ 3.044
12/1/2019	\$ 3.03	\$ 0.176	\$ 3.204
1/1/2020	\$ 3.13	\$ 0.181	\$ 3.311
2/1/2020	\$ 3.11	\$ 0.179	\$ 3.284
3/1/2020	\$ 3.05	\$ 0.177	\$ 3.225
4/1/2020	\$ 2.73	\$ 0.159	\$ 2.885
5/1/2020	\$ 2.70	\$ 0.160	\$ 2.858
6/1/2020	\$ 2.72	\$ 0.169	\$ 2.890
7/1/2020	\$ 2.75	\$ 0.186	\$ 2.933
8/1/2020	\$ 2.76	\$ 0.197	\$ 2.961
9/1/2020	\$ 2.76	\$ 0.167	\$ 2.926
10/1/2020	\$ 2.79	\$ 0.162	\$ 2.948
11/1/2020	\$ 2.86	\$ 0.166	\$ 3.025
12/1/2020	\$ 3.00	\$ 0.174	\$ 3.173
1/1/2021	\$ 3.11	\$ 0.179	\$ 3.285
2/1/2021	\$ 3.08	\$ 0.178	\$ 3.258
3/1/2021	\$ 3.02	\$ 0.176	\$ 3.198
4/1/2021	\$ 2.71	\$ 0.159	\$ 2.866
5/1/2021	\$ 2.68	\$ 0.158	\$ 2.842
6/1/2021	\$ 2.71	\$ 0.176	\$ 2.883
7/1/2021	\$ 2.73	\$ 0.190	\$ 2.921

Date	Base HH Regular Supply Cost	Basis and Transportation (\$/Mmbtu)	Delivered Price (\$/Mmbtu)
8/1/2021	\$ 2.75	\$ 0.196	\$ 2.947
9/1/2021	\$ 2.75	\$ 0.163	\$ 2.912
10/1/2021	\$ 2.78	\$ 0.162	\$ 2.937
11/1/2021	\$ 2.85	\$ 0.167	\$ 3.017
12/1/2021	\$ 3.00	\$ 0.176	\$ 3.177
1/1/2022	\$ 3.11	\$ 0.181	\$ 3.292
2/1/2022	\$ 3.09	\$ 0.179	\$ 3.264
3/1/2022	\$ 3.03	\$ 0.179	\$ 3.204
4/1/2022	\$ 2.71	\$ 0.157	\$ 2.862
5/1/2022	\$ 2.69	\$ 0.160	\$ 2.849
6/1/2022	\$ 2.72	\$ 0.173	\$ 2.888
7/1/2022	\$ 2.74	\$ 0.196	\$ 2.939
8/1/2022	\$ 2.77	\$ 0.205	\$ 2.973
9/1/2022	\$ 2.77	\$ 0.170	\$ 2.941
10/1/2022	\$ 2.81	\$ 0.163	\$ 2.973
11/1/2022	\$ 2.90	\$ 0.169	\$ 3.066
12/1/2022	\$ 3.06	\$ 0.180	\$ 3.239
1/1/2023	\$ 3.17	\$ 0.183	\$ 3.358
2/1/2023	\$ 3.16	\$ 0.182	\$ 3.342
3/1/2023	\$ 3.11	\$ 0.183	\$ 3.292
4/1/2023	\$ 2.79	\$ 0.163	\$ 2.951
5/1/2023	\$ 2.79	\$ 0.164	\$ 2.957
6/1/2023	\$ 2.83	\$ 0.184	\$ 3.011
7/1/2023	\$ 2.87	\$ 0.201	\$ 3.069
8/1/2023	\$ 2.93	\$ 0.219	\$ 3.145
9/1/2023	\$ 2.95	\$ 0.179	\$ 3.129
10/1/2023	\$ 2.99	\$ 0.172	\$ 3.166
11/1/2023	\$ 3.11	\$ 0.179	\$ 3.287
12/1/2023	\$ 3.28	\$ 0.191	\$ 3.470

Date	OIL PRICE (\$/Mmbtu)	TRANSPORTATION COST (\$/Mmbtu)	DELIVERED COST (\$/Mmbtu)
1/1/2018	\$ 12.18	\$ 0.36	\$ 12.53
2/1/2018	\$ 12.13	\$ 0.36	\$ 12.49
3/1/2018	\$ 12.05	\$ 0.36	\$ 12.41
4/1/2018	\$ 12.01	\$ 0.36	\$ 12.37
5/1/2018	\$ 11.96	\$ 0.36	\$ 12.32
6/1/2018	\$ 11.96	\$ 0.36	\$ 12.32
7/1/2018	\$ 12.00	\$ 0.36	\$ 12.36
8/1/2018	\$ 12.04	\$ 0.36	\$ 12.40
9/1/2018	\$ 12.08	\$ 0.36	\$ 12.44
10/1/2018	\$ 12.04	\$ 0.36	\$ 12.40
11/1/2018	\$ 11.98	\$ 0.36	\$ 12.34
12/1/2018	\$ 11.92	\$ 0.36	\$ 12.28
1/1/2019	\$ 12.05	\$ 0.37	\$ 12.41
2/1/2019	\$ 12.01	\$ 0.37	\$ 12.37
3/1/2019	\$ 11.93	\$ 0.37	\$ 12.29
4/1/2019	\$ 11.88	\$ 0.37	\$ 12.25
5/1/2019	\$ 11.83	\$ 0.37	\$ 12.20
6/1/2019	\$ 11.84	\$ 0.37	\$ 12.20
7/1/2019	\$ 11.88	\$ 0.37	\$ 12.24
8/1/2019	\$ 11.91	\$ 0.37	\$ 12.28
9/1/2019	\$ 11.95	\$ 0.37	\$ 12.32
10/1/2019	\$ 11.91	\$ 0.37	\$ 12.28
11/1/2019	\$ 11.86	\$ 0.37	\$ 12.22
12/1/2019	\$ 11.80	\$ 0.37	\$ 12.17
1/1/2020	\$ 12.00	\$ 0.37	\$ 12.37
2/1/2020	\$ 11.96	\$ 0.37	\$ 12.33
3/1/2020	\$ 11.88	\$ 0.37	\$ 12.25
4/1/2020	\$ 11.84	\$ 0.37	\$ 12.21
5/1/2020	\$ 11.79	\$ 0.37	\$ 12.16
6/1/2020	\$ 11.80	\$ 0.37	\$ 12.17
7/1/2020	\$ 11.84	\$ 0.37	\$ 12.21
8/1/2020	\$ 11.89	\$ 0.37	\$ 12.26
9/1/2020	\$ 11.95	\$ 0.37	\$ 12.32
10/1/2020	\$ 11.93	\$ 0.37	\$ 12.30
11/1/2020	\$ 11.89	\$ 0.37	\$ 12.26
12/1/2020	\$ 11.85	\$ 0.37	\$ 12.22
1/1/2021	\$ 12.17	\$ 0.38	\$ 12.54
2/1/2021	\$ 12.15	\$ 0.38	\$ 12.52
3/1/2021	\$ 12.09	\$ 0.38	\$ 12.47
4/1/2021	\$ 12.07	\$ 0.38	\$ 12.45
5/1/2021	\$ 12.04	\$ 0.38	\$ 12.42
6/1/2021	\$ 12.07	\$ 0.38	\$ 12.44
7/1/2021	\$ 12.13	\$ 0.38	\$ 12.51

Date	OIL PRICE (\$/Mmbtu)	TRANSPORTATION COST (\$/Mmbtu)	DELIVERED COST (\$/Mmbtu)
8/1/2021	\$ 12.19	\$ 0.38	\$ 12.56
9/1/2021	\$ 12.25	\$ 0.38	\$ 12.62
10/1/2021	\$ 12.22	\$ 0.38	\$ 12.60
11/1/2021	\$ 12.18	\$ 0.38	\$ 12.56
12/1/2021	\$ 12.14	\$ 0.38	\$ 12.52
1/1/2022	\$ 12.47	\$ 0.38	\$ 12.85
2/1/2022	\$ 12.45	\$ 0.38	\$ 12.83
3/1/2022	\$ 12.39	\$ 0.38	\$ 12.77
4/1/2022	\$ 12.37	\$ 0.38	\$ 12.75
5/1/2022	\$ 12.34	\$ 0.38	\$ 12.72
6/1/2022	\$ 12.37	\$ 0.38	\$ 12.75
7/1/2022	\$ 12.43	\$ 0.38	\$ 12.81
8/1/2022	\$ 12.49	\$ 0.38	\$ 12.87
9/1/2022	\$ 12.55	\$ 0.38	\$ 12.93
10/1/2022	\$ 12.56	\$ 0.38	\$ 12.95
11/1/2022	\$ 12.57	\$ 0.38	\$ 12.95
12/1/2022	\$ 12.57	\$ 0.38	\$ 12.95
1/1/2023	\$ 12.97	\$ 0.39	\$ 13.36
2/1/2023	\$ 13.00	\$ 0.39	\$ 13.39
3/1/2023	\$ 13.00	\$ 0.39	\$ 13.39
4/1/2023	\$ 13.03	\$ 0.39	\$ 13.41
5/1/2023	\$ 13.05	\$ 0.39	\$ 13.44
6/1/2023	\$ 13.13	\$ 0.39	\$ 13.52
7/1/2023	\$ 13.24	\$ 0.39	\$ 13.62
8/1/2023	\$ 13.33	\$ 0.39	\$ 13.72
9/1/2023	\$ 13.43	\$ 0.39	\$ 13.82
10/1/2023	\$ 13.46	\$ 0.39	\$ 13.84
11/1/2023	\$ 13.47	\$ 0.39	\$ 13.86
12/1/2023	\$ 13.49	\$ 0.39	\$ 13.88

Year	COAL PRICE (\$/Mmbtu)	TRANSPORTATION COST (\$/Mmbtu)	DELIVERED COST (\$/Mmbtu)
2018	\$ 0.82	\$ 1.16	\$ 1.99
2019	\$ 0.84	\$ 1.19	\$ 2.04
2020	\$ 0.92	\$ 1.22	\$ 2.14
2021	\$ 0.99	\$ 1.25	\$ 2.25
2022	\$ 1.10	\$ 1.29	\$ 2.39
2023	\$ 1.20	\$ 1.31	\$ 2.52

Date	Base HH Regular Supply Cost	Basis and Transportation (\$/Mmbtu)	Delivered Price (\$/Mmbtu)
1/1/2018	\$ 3.44	\$ 0.145	\$ 3.581
2/1/2018	\$ 3.43	\$ 0.171	\$ 3.604
3/1/2018	\$ 3.38	\$ 0.174	\$ 3.555
4/1/2018	\$ 2.99	\$ 0.145	\$ 3.131
5/1/2018	\$ 2.95	\$ 0.154	\$ 3.101
6/1/2018	\$ 2.97	\$ 0.165	\$ 3.135
7/1/2018	\$ 2.99	\$ 0.166	\$ 3.159
8/1/2018	\$ 3.00	\$ 0.187	\$ 3.182
9/1/2018	\$ 2.97	\$ 0.159	\$ 3.133
10/1/2018	\$ 3.00	\$ 0.160	\$ 3.155
11/1/2018	\$ 3.04	\$ 0.175	\$ 3.219
12/1/2018	\$ 3.18	\$ 0.183	\$ 3.360
1/1/2019	\$ 3.26	\$ 0.187	\$ 3.451
2/1/2019	\$ 3.24	\$ 0.186	\$ 3.430
3/1/2019	\$ 3.18	\$ 0.184	\$ 3.363
4/1/2019	\$ 2.79	\$ 0.162	\$ 2.947
5/1/2019	\$ 2.75	\$ 0.162	\$ 2.911
6/1/2019	\$ 2.77	\$ 0.167	\$ 2.939
7/1/2019	\$ 2.80	\$ 0.178	\$ 2.973
8/1/2019	\$ 2.80	\$ 0.189	\$ 2.988
9/1/2019	\$ 2.79	\$ 0.165	\$ 2.950
10/1/2019	\$ 2.81	\$ 0.162	\$ 2.972
11/1/2019	\$ 2.88	\$ 0.166	\$ 3.044
12/1/2019	\$ 3.03	\$ 0.176	\$ 3.204
1/1/2020	\$ 3.13	\$ 0.181	\$ 3.311
2/1/2020	\$ 3.11	\$ 0.179	\$ 3.284
3/1/2020	\$ 3.10	\$ 0.180	\$ 3.280
4/1/2020	\$ 2.82	\$ 0.163	\$ 2.985
5/1/2020	\$ 2.83	\$ 0.167	\$ 3.001
6/1/2020	\$ 2.89	\$ 0.177	\$ 3.071
7/1/2020	\$ 2.97	\$ 0.197	\$ 3.165
8/1/2020	\$ 3.03	\$ 0.209	\$ 3.244
9/1/2020	\$ 3.08	\$ 0.182	\$ 3.265
10/1/2020	\$ 3.16	\$ 0.180	\$ 3.340
11/1/2020	\$ 3.41	\$ 0.191	\$ 3.599
12/1/2020	\$ 3.60	\$ 0.202	\$ 3.806
1/1/2021	\$ 3.84	\$ 0.213	\$ 4.056
2/1/2021	\$ 3.90	\$ 0.216	\$ 4.119
3/1/2021	\$ 3.84	\$ 0.214	\$ 4.053
4/1/2021	\$ 3.47	\$ 0.194	\$ 3.662
5/1/2021	\$ 3.51	\$ 0.197	\$ 3.710
6/1/2021	\$ 3.59	\$ 0.216	\$ 3.809
7/1/2021	\$ 3.67	\$ 0.233	\$ 3.906

Date	Base HH Regular Supply Cost	Basis and Transportation (\$/Mmbtu)	Delivered Price (\$/Mmbtu)
8/1/2021	\$ 3.76	\$ 0.243	\$ 4.003
9/1/2021	\$ 3.85	\$ 0.214	\$ 4.065
10/1/2021	\$ 3.95	\$ 0.216	\$ 4.164
11/1/2021	\$ 4.25	\$ 0.231	\$ 4.484
12/1/2021	\$ 4.51	\$ 0.246	\$ 4.755
1/1/2022	\$ 4.77	\$ 0.258	\$ 5.024
2/1/2022	\$ 4.85	\$ 0.260	\$ 5.108
3/1/2022	\$ 4.82	\$ 0.262	\$ 5.085
4/1/2022	\$ 4.33	\$ 0.231	\$ 4.559
5/1/2022	\$ 4.39	\$ 0.238	\$ 4.633
6/1/2022	\$ 4.49	\$ 0.255	\$ 4.745
7/1/2022	\$ 4.61	\$ 0.282	\$ 4.889
8/1/2022	\$ 4.78	\$ 0.298	\$ 5.083
9/1/2022	\$ 4.97	\$ 0.271	\$ 5.238
10/1/2022	\$ 5.08	\$ 0.268	\$ 5.348
11/1/2022	\$ 5.46	\$ 0.287	\$ 5.744
12/1/2022	\$ 5.79	\$ 0.305	\$ 6.093
1/1/2023	\$ 5.96	\$ 0.311	\$ 6.271
2/1/2023	\$ 6.06	\$ 0.316	\$ 6.380
3/1/2023	\$ 5.97	\$ 0.315	\$ 6.283
4/1/2023	\$ 5.36	\$ 0.282	\$ 5.644
5/1/2023	\$ 5.47	\$ 0.288	\$ 5.760
6/1/2023	\$ 5.51	\$ 0.307	\$ 5.812
7/1/2023	\$ 5.57	\$ 0.326	\$ 5.893
8/1/2023	\$ 5.80	\$ 0.352	\$ 6.150
9/1/2023	\$ 5.87	\$ 0.314	\$ 6.183
10/1/2023	\$ 5.90	\$ 0.306	\$ 6.210
11/1/2023	\$ 6.20	\$ 0.322	\$ 6.521
12/1/2023	\$ 6.47	\$ 0.338	\$ 6.805

Date	OIL PRICE (\$/Mmbtu)	TRANSPORTATION COST (\$/Mmbtu)	DELIVERED COST (\$/Mmbtu)
1/1/2018	\$ 12.18	\$ 0.36	\$ 12.53
2/1/2018	\$ 12.13	\$ 0.36	\$ 12.49
3/1/2018	\$ 12.05	\$ 0.36	\$ 12.41
4/1/2018	\$ 12.01	\$ 0.36	\$ 12.37
5/1/2018	\$ 11.96	\$ 0.36	\$ 12.32
6/1/2018	\$ 11.96	\$ 0.36	\$ 12.32
7/1/2018	\$ 12.00	\$ 0.36	\$ 12.36
8/1/2018	\$ 12.04	\$ 0.36	\$ 12.40
9/1/2018	\$ 12.08	\$ 0.36	\$ 12.44
10/1/2018	\$ 12.04	\$ 0.36	\$ 12.40
11/1/2018	\$ 11.98	\$ 0.36	\$ 12.34
12/1/2018	\$ 11.92	\$ 0.36	\$ 12.28
1/1/2019	\$ 12.05	\$ 0.37	\$ 12.41
2/1/2019	\$ 12.01	\$ 0.37	\$ 12.37
3/1/2019	\$ 11.93	\$ 0.37	\$ 12.29
4/1/2019	\$ 11.88	\$ 0.37	\$ 12.25
5/1/2019	\$ 11.83	\$ 0.37	\$ 12.20
6/1/2019	\$ 11.84	\$ 0.37	\$ 12.20
7/1/2019	\$ 11.88	\$ 0.37	\$ 12.24
8/1/2019	\$ 11.91	\$ 0.37	\$ 12.28
9/1/2019	\$ 11.95	\$ 0.37	\$ 12.32
10/1/2019	\$ 11.91	\$ 0.37	\$ 12.28
11/1/2019	\$ 11.86	\$ 0.37	\$ 12.22
12/1/2019	\$ 11.80	\$ 0.37	\$ 12.17
1/1/2020	\$ 12.00	\$ 0.37	\$ 12.37
2/1/2020	\$ 11.96	\$ 0.37	\$ 12.33
3/1/2020	\$ 11.88	\$ 0.37	\$ 12.25
4/1/2020	\$ 11.84	\$ 0.37	\$ 12.21
5/1/2020	\$ 11.79	\$ 0.37	\$ 12.16
6/1/2020	\$ 11.80	\$ 0.37	\$ 12.17
7/1/2020	\$ 11.84	\$ 0.37	\$ 12.21
8/1/2020	\$ 11.89	\$ 0.37	\$ 12.26
9/1/2020	\$ 11.95	\$ 0.37	\$ 12.32
10/1/2020	\$ 11.93	\$ 0.37	\$ 12.30
11/1/2020	\$ 11.89	\$ 0.37	\$ 12.26
12/1/2020	\$ 11.85	\$ 0.37	\$ 12.22
1/1/2021	\$ 12.17	\$ 0.38	\$ 12.54
2/1/2021	\$ 12.15	\$ 0.38	\$ 12.52
3/1/2021	\$ 12.09	\$ 0.38	\$ 12.47
4/1/2021	\$ 12.07	\$ 0.38	\$ 12.45
5/1/2021	\$ 12.04	\$ 0.38	\$ 12.42
6/1/2021	\$ 12.07	\$ 0.38	\$ 12.44

Date	OIL PRICE (\$/Mmbtu)	TRANSPORTATION COST (\$/Mmbtu)	DELIVERED COST (\$/Mmbtu)
7/1/2021	\$ 12.13	\$ 0.38	\$ 12.51
8/1/2021	\$ 12.19	\$ 0.38	\$ 12.56
9/1/2021	\$ 12.25	\$ 0.38	\$ 12.62
10/1/2021	\$ 12.22	\$ 0.38	\$ 12.60
11/1/2021	\$ 12.18	\$ 0.38	\$ 12.56
12/1/2021	\$ 12.14	\$ 0.38	\$ 12.52
1/1/2022	\$ 12.47	\$ 0.38	\$ 12.85
2/1/2022	\$ 12.45	\$ 0.38	\$ 12.83
3/1/2022	\$ 12.39	\$ 0.38	\$ 12.77
4/1/2022	\$ 12.37	\$ 0.38	\$ 12.75
5/1/2022	\$ 12.34	\$ 0.38	\$ 12.72
6/1/2022	\$ 12.37	\$ 0.38	\$ 12.75
7/1/2022	\$ 12.43	\$ 0.38	\$ 12.81
8/1/2022	\$ 12.49	\$ 0.38	\$ 12.87
9/1/2022	\$ 12.55	\$ 0.38	\$ 12.93
10/1/2022	\$ 12.56	\$ 0.38	\$ 12.95
11/1/2022	\$ 12.57	\$ 0.38	\$ 12.95
12/1/2022	\$ 12.57	\$ 0.38	\$ 12.95
1/1/2023	\$ 12.97	\$ 0.39	\$ 13.36
2/1/2023	\$ 13.00	\$ 0.39	\$ 13.39
3/1/2023	\$ 13.00	\$ 0.39	\$ 13.39
4/1/2023	\$ 13.03	\$ 0.39	\$ 13.41
5/1/2023	\$ 13.05	\$ 0.39	\$ 13.44
6/1/2023	\$ 13.13	\$ 0.39	\$ 13.52
7/1/2023	\$ 13.24	\$ 0.39	\$ 13.62
8/1/2023	\$ 13.33	\$ 0.39	\$ 13.72
9/1/2023	\$ 13.43	\$ 0.39	\$ 13.82
10/1/2023	\$ 13.46	\$ 0.39	\$ 13.84
11/1/2023	\$ 13.47	\$ 0.39	\$ 13.86
12/1/2023	\$ 13.49	\$ 0.39	\$ 13.88

Ridge Termination - Results of DEF's Economic Evaluation - Upper Band (260 GWh)
\$ in millions

		2019	2020	2021	2022	2023	Nominal Total	Present Value
A	Regulatory Asset Amortization	6.9	6.9	6.9	6.9	6.9	34.5	28.2
B	Interest Expense	0.6	0.5	0.4	0.2	0.1	1.8	1.6
C	Return on Equity	1.3	1.0	0.7	0.4	0.1	3.7	3.2
D	Income Tax	0.5	0.4	0.3	0.2	0.1	1.3	1.1
E = A + B + C + D	Total cost of Ridge Buyout	9.3	8.8	8.3	7.7	7.2	41.3	34.0
F	DEF System Impact	(6.7)	(7.1)	(7.2)	(7.9)	(8.3)	(37.2)	(30.2)
G	Avoided Capacity Payment of PPA	(9.6)	(9.6)	(9.6)	(9.6)	(9.6)	(48.1)	(39.3)
H = F + G	Net System Impact from Termination	(16.3)	(16.7)	(16.9)	(17.5)	(17.9)	(85.3)	(69.5)
I = E + H	Net Customer (Savings) / Cost	(7.0)	(7.9)	(8.6)	(9.8)	(10.8)	(44.0)	(35.4)

Ridge Termination - Results of DEF's Economic Evaluation - Middle Band (246 GWh)
\$ in millions

		2019	2020	2021	2022	2023	Nominal Total	Present Value
A	Regulatory Asset Amortization	6.9	6.9	6.9	6.9	6.9	34.5	28.2
B	Interest Expense	0.6	0.5	0.4	0.2	0.1	1.8	1.6
C	Return on Equity	1.3	1.0	0.7	0.4	0.1	3.7	3.2
D	Income Tax	0.5	0.4	0.3	0.2	0.1	1.3	1.1
E = A + B + C + D	Total cost of Ridge Buyout	9.3	8.8	8.3	7.7	7.2	41.3	34.0
F	DEF System Impact	(6.3)	(6.6)	(6.8)	(7.4)	(7.8)	(34.8)	(28.2)
G	Avoided Capacity Payment of PPA	(9.6)	(9.6)	(9.6)	(9.6)	(9.6)	(48.1)	(39.3)
H = F + G	Net System Impact from Termination	(15.9)	(16.2)	(16.4)	(17.0)	(17.4)	(82.9)	(67.5)
I = E + H	Net Customer (Savings) / Cost	(6.6)	(7.5)	(8.1)	(9.3)	(10.2)	(41.7)	(33.5)

Ridge Termination - Results of DEF's Economic Evaluation - Lower Band (222 GWh)
\$ in millions

		2019	2020	2021	2022	2023	Nominal Total	Present Value
A	Regulatory Asset Amortization	6.9	6.9	6.9	6.9	6.9	34.5	28.2
B	Interest Expense	0.6	0.5	0.4	0.2	0.1	1.8	1.6
C	Return on Equity	1.3	1.0	0.7	0.4	0.1	3.7	3.2
D	Income Tax	0.5	0.4	0.3	0.2	0.1	1.3	1.1
E = A + B + C + D	Total cost of Ridge Buyout	9.3	8.8	8.3	7.7	7.2	41.3	34.0
F	DEF System Impact	(5.6)	(5.8)	(5.9)	(6.6)	(6.9)	(30.8)	(24.9)
G	Avoided Capacity Payment of PPA	(9.6)	(9.6)	(9.6)	(9.6)	(9.6)	(48.1)	(39.3)
H = F + G	Net System Impact from Termination	(15.2)	(15.4)	(15.6)	(16.2)	(16.5)	(78.8)	(64.2)
I = E + H	Net Customer (Savings) / Cost	(5.8)	(6.7)	(7.3)	(8.5)	(9.3)	(37.6)	(30.2)

Calculation of Regulatory Asset Amortization and Return
\$'s millions

Year	Months	Beg Bal	Amort	End Bal	Avg Bal	Interest	After-Tax Equity	Tax	Total Return	Total Rev Req
2019	12	34.5	6.9	27.6	31.1	0.6	1.3	0.5	2.4	9.3
2020	12	27.6	6.9	20.7	24.2	0.5	1.0	0.4	1.9	8.8
2021	12	20.7	6.9	13.8	17.3	0.4	0.7	0.3	1.4	8.3
2022	12	13.8	6.9	6.9	10.4	0.2	0.4	0.2	0.8	7.7
2023	12	6.9	6.9	-	3.5	0.1	0.1	0.1	0.3	7.2

Duke Energy Florida, LLC
 Capital Structure and Cost Rates Applied to Capital Projects
 Estimated for the Period of : January 2019 through December 2019

Line	Adjusted Retail \$000's	Ratio	Cost Rate	Weighted Cost Rate	Pretax Weighted Cost Rate
1 Common Equity	\$ 4,374,787	40.92%	10.50%	4.30%	5.75%
2 Long Term Debt	\$ 4,497,052	42.06%	4.90%	2.06%	2.06%
3 Short Term Debt	\$ (193,058)	-1.81%	0.88%	-0.02%	-0.02%
4 Customer Deposits - Active	179,649	1.68%	2.35%	0.04%	0.04%
5 Customer Deposits - Inactive	1,597	0.01%	0.00%	0.00%	0.00%
6 ITC	5,239	0.05%	7.85%	0.00%	0.00%
8 ADIT	1,826,909	17.09%	0.00%	0.00%	0.00%
	<u>\$ 10,692,175</u>	<u>100.00%</u>		<u>6.38%</u>	<u>7.84%</u>
			Total Debt	2.09%	2.09%
			Total Equity	4.30%	5.75%

Mid Fuel	<u>Buyout</u>		<u>Buyout</u>		<u>Buyout</u>	
	<u>222 GWh</u>	<u>222 GWh</u>	<u>246 GWh</u>	<u>246 GWh</u>	<u>260 GWh</u>	<u>260 GWh</u>
Gas Reservation Charges	\$1,840	\$1,840	\$1,840	\$1,840	\$1,840	\$1,840
Fuel Costs	\$5,181	\$5,209	\$5,181	\$5,213	\$5,182	\$5,216
Non Fuel O&M Costs	\$2,872	\$2,908	\$2,872	\$2,908	\$2,872	\$2,908
Environmental Costs	\$59	\$58	\$59	\$58	\$59	\$58
CO2 Costs	\$0	\$0	\$0	\$0	\$0	\$0
Total Production Costs	\$9,951	\$10,015	\$9,952	\$10,019	\$9,952	\$10,021

<u>222_GWh-Buyout</u>	<u>246_GWh-Buyout</u>	<u>260_GWh-Buyout</u>
<u>222_GWh</u>	<u>246_GWh</u>	<u>260_GWh</u>
\$0	\$0	\$0
(\$29)	(\$32)	(\$34)
(\$36)	(\$36)	(\$36)
\$0	\$0	\$0
\$0	\$0	\$0
(\$64)	(\$68)	(\$69)

High Fuel	<u>Buyout</u>		<u>Buyout</u>		<u>Buyout</u>	
	<u>222 GWh</u>	<u>222 GWh</u>	<u>246 GWh</u>	<u>246 GWh</u>	<u>260 GWh</u>	<u>260 GWh</u>
Gas Reservation Charges	\$1,840	\$1,840	\$1,840	\$1,840	\$1,840	\$1,840
Fuel Costs	\$6,189	\$6,211	\$6,190	\$6,214	\$6,190	\$6,216
Non Fuel O&M Costs	\$2,863	\$2,898	\$2,863	\$2,898	\$2,863	\$2,897
Environmental Costs	\$70	\$70	\$70	\$70	\$70	\$70
CO2 Costs	\$0	\$0	\$0	\$0	\$0	\$0
Total Production Costs	\$10,962	\$11,019	\$10,962	\$11,022	\$10,963	\$11,024

<u>222_GWh-Buyout</u>	<u>246_GWh-Buyout</u>	<u>260_GWh-Buyout</u>
<u>222_GWh</u>	<u>246_GWh</u>	<u>260_GWh</u>
\$0	\$0	\$0
(\$22)	(\$24)	(\$26)
(\$35)	(\$35)	(\$35)
\$0	\$0	\$0
\$0	\$0	\$0
(\$57)	(\$59)	(\$61)

7.15%	<u>2018 RIDGE 222 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
5,209	Fuel Costs	1,091	991	992	991	1,007	1,073
2,908	Non Fuel O&M Costs	519	541	578	580	603	640
58	Environmental Costs	16	12	11	11	10	9
-	CO2	-	-	-	-	-	-
10,015	Total Production Costs	1,889	1,930	1,969	1,967	2,004	2,105
 <u>Differentials</u>							
	Total Production Costs		(15.2)	(15.4)	(15.6)	(16.2)	(16.5)
	Avoided Capacity Payment of PPA		9.6	9.6	9.6	9.6	9.6
	DEF System Impact		(5.6)	(5.8)	(5.9)	(6.6)	(6.9)

7.15%	<u>2018 RIDGE 222 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
5,181	Fuel Costs	1,091	984	986	984	999	1,065
2,872	Non Fuel O&M Costs	519	532	569	571	594	631
59	Environmental Costs	16	12	11	11	10	9
-	CO2	-	-	-	-	-	-
9,951	Total Production Costs	1,889	1,915	1,954	1,952	1,988	2,089

7.15%	<u>2018 RIDGE 246 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
5,213	Fuel Costs	1,092	991	993	992	1,008	1,074
2,908	Non Fuel O&M Costs	519	541	578	580	603	640
58	Environmental Costs	16	12	11	11	10	9
-	CO2	-	-	-	-	-	-
10,019	Total Production Costs	1,889	1,931	1,970	1,968	2,005	2,106
<u>Differentials</u>							
	Total Production Costs		(15.9)	(16.2)	(16.4)	(17.0)	(17.4)
	Avoided Capacity Payment of PPA		9.6	9.6	9.6	9.6	9.6
	DEF System Impact		(6.3)	(6.6)	(6.8)	(7.4)	(7.8)

7.15%	<u>2018 RIDGE 246 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
5,181	Fuel Costs	1,092	984	986	984	999	1,065
2,872	Non Fuel O&M Costs	519	532	569	571	594	631
59	Environmental Costs	16	12	11	11	10	9
-	CO2	-	-	-	-	-	-
9,952	Total Production Costs	1,889	1,915	1,954	1,952	1,988	2,089

7.15%	<u>2018 RIDGE 260 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
5,216	Fuel Costs	1,092	992	994	992	1,008	1,074
2,908	Non Fuel O&M Costs	519	540	578	580	603	640
58	Environmental Costs	16	12	11	11	10	9
-	CO2	-	-	-	-	-	-
10,021	Total Production Costs	1,890	1,931	1,971	1,969	2,005	2,107
	<u>Differentials</u>						
	Total Production Costs		(16.3)	(16.7)	(16.9)	(17.5)	(17.9)
	Avoided Capacity Payment of PPA		9.6	9.6	9.6	9.6	9.6
	DEF System Impact		(6.7)	(7.1)	(7.2)	(7.9)	(8.3)

7.15%	<u>2018 RIDGE 260 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
5,182	Fuel Costs	1,092	984	986	984	999	1,065
2,872	Non Fuel O&M Costs	519	532	569	571	594	631
59	Environmental Costs	16	12	11	11	10	9
-	CO2	-	-	-	-	-	-
9,952	Total Production Costs	1,890	1,915	1,954	1,952	1,988	2,089

7.15%	<u>2018 RIDGE 222 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
6,211	Fuel Costs	1,091	991	1,048	1,218	1,444	1,689
2,898	Non Fuel O&M Costs	519	541	577	577	599	633
70	Environmental Costs	16	12	12	14	15	16
-	CO2	-	-	-	-	-	-
11,019	Total Production Costs	1,889	1,930	2,026	2,195	2,442	2,722

7.15%	<u>2018 RIDGE 222 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
6,189	Fuel Costs	1,091	984	1,042	1,213	1,439	1,686
2,863	Non Fuel O&M Costs	519	532	568	569	590	625
70	Environmental Costs	16	12	12	14	15	16
-	CO2	-	-	-	-	-	-
10,962	Total Production Costs	1,889	1,915	2,010	2,182	2,429	2,711

7.15%	<u>2018 RIDGE 246 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
6,214	Fuel Costs	1,092	991	1,049	1,219	1,445	1,689
2,898	Non Fuel O&M Costs	519	541	577	577	599	633
70	Environmental Costs	16	12	12	14	15	16
-	CO2	-	-	-	-	-	-
11,022	Total Production Costs	1,889	1,931	2,026	2,196	2,442	2,723

7.15%	<u>2018 RIDGE 246 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
6,190	Fuel Costs	1,092	984	1,042	1,213	1,439	1,686
2,863	Non Fuel O&M Costs	519	532	568	569	590	625
70	Environmental Costs	16	12	12	14	15	16
-	CO2	-	-	-	-	-	-
10,962	Total Production Costs	1,889	1,915	2,010	2,182	2,429	2,711

7.15%	<u>2018 RIDGE 260 GWh</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840	Gas Reservation Charges	263	387	388	385	384	384
6,216	Fuel Costs	1,092	992	1,050	1,219	1,445	1,690
2,897	Non Fuel O&M Costs	519	540	577	577	599	633
70	Environmental Costs	16	12	12	14	15	16
-	CO2	-	-	-	-	-	-
11,024	Total Production Costs	1,890	1,931	2,027	2,196	2,443	2,723

7.15% 2018 RIDGE 260 GWh	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
1,840 Gas Reservation Charges	263	387	388	385	384	384
6,190 Fuel Costs	1,092	984	1,042	1,213	1,439	1,686
2,863 Non Fuel O&M Costs	519	532	568	569	590	625
70 Environmental Costs	16	12	12	14	15	16
- CO2	-	-	-	-	-	-
10,963 Total Production Costs	1,890	1,915	2,010	2,182	2,429	2,711

DUKE ENERGY FLORIDA

Duke Energy Florida
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**SCHEDULE 7.1
FORECAST OF CAPACITY, DEMAND AND SCHEDULED MAINTENANCE
AT TIME OF SUMMER PEAK**

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	TOTAL INSTALLED CAPACITY	FIRM ^a CAPACITY IMPORT	FIRM CAPACITY EXPORT	QF ^b	TOTAL CAPACITY AVAILABLE	SYSTEM FIRM SUMMER PEAK DEMAND	RESERVE MARGIN BEFORE MAINTENANCE	RESERVE MARGIN % OF PEAK	SCHEDULED MAINTENANCE	RESERVE MARGIN AFTER MAINTENANCE	RESERVE MARGIN % OF PEAK
	MW	MW	MW	MW	MW	MW	MW		MW	MW	
2018	8,860	1,878	0	117	10,856	8,757	2,099	24%	0	2,099	24%
2019	9,777	1,878	0	78	11,733	9,043	2,690	30%	0	2,690	30%
2020	9,840	1,878	0	138	11,856	9,057	2,799	31%	0	2,799	31%
2021	9,964	1,454	0	138	11,556	8,990	2,567	29%	0	2,567	29%
2022	10,083	1,454	0	138	11,674	9,065	2,610	29%	0	2,610	29%
2023	10,123	1,454	0	138	11,715	9,150	2,565	28%	0	2,565	28%

Notes:

a. FIRM Capacity Import includes Cogeneration, Utility and Independent Power Producers, and Short Term Purchase Contracts.

b. QF includes Firm Renewables

DUKE ENERGY FLORIDA

Duke Energy Florida
Docket No. 20180152
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SCHEDULE 7.2
FORECAST OF CAPACITY, DEMAND AND SCHEDULED MAINTENANCE
AT TIME OF WINTER PEAK

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	TOTAL INSTALLED CAPACITY	FIRM ^a CAPACITY IMPORT	FIRM CAPACITY EXPORT	QF ^b MW	TOTAL CAPACITY AVAILABLE	SYSTEM FIRM WINTER PEAK DEMAND	RESERVE MARGIN BEFORE MAINTENANCE	% OF PEAK	SCHEDULED MAINTENANCE	RESERVE MARGIN AFTER MAINTENANCE	% OF PEAK
	MW	MW	MW	MW	MW	MW	MW		MW	MW	
2017/18	9,807	1,961	0	177	11,946	9,089	2,857	31%	0	2,857	31%
2018/19	10,847	1,961	0	78	12,886	9,131	3,755	41%	0	3,755	41%
2019/20	10,847	1,961	0	138	12,946	9,390	3,556	38%	0	3,556	38%
2020/21	10,797	1,961	0	138	12,896	8,905	3,992	45%	0	3,992	45%
2021/22	10,797	1,537	0	138	12,472	9,043	3,430	38%	0	3,430	38%
2022/23	10,797	1,537	0	138	12,472	9,119	3,353	37%	0	3,353	37%
2023/24	10,797	1,422	0	138	12,357	9,197	3,160	34%	0	3,160	34%

Notes:

- a. FIRM Capacity Import includes Cogeneration, Utility and Independent Power Producers, and Short Term Purchase Contracts.
- b. QF includes Firm Renewables

DUKE ENERGY FLORIDA

SCHEDULE 6.1
ENERGY SOURCES (GWh)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
				-ACTUAL-							
			UNITS	2016	2017	2018	2019	2020	2021	2022	2023
(1)	ANNUAL FIRM INTERCHANGE 1/		GWh	4,072	2,037	1,616	872	959	1,269	1,323	1,709
(2)	NUCLEAR		GWh	0	0	0	0	0	0	0	0
(3)	COAL		GWh	8,885	8,722	11,495	9,254	8,355	8,345	6,603	5,303
(4)	RESIDUAL	TOTAL	GWh	0	0	0	0	0	0	0	0
(5)		STEAM	GWh	0	0	0	0	0	0	0	0
(6)		CC	GWh	0	0	0	0	0	0	0	0
(7)		CT	GWh	0	0	0	0	0	0	0	0
(8)		DIESEL	GWh	0	0	0	0	0	0	0	0
(9)	DISTILLATE	TOTAL	GWh	77	62	80	31	19	29	28	53
(10)		STEAM	GWh	34	33	0	0	0	0	0	0
(11)		CC	GWh	0	0	0	0	0	0	0	0
(12)		CT	GWh	43	29	80	31	19	29	28	53
(13)		DIESEL	GWh	0	0	0	0	0	0	0	0
(14)	NATURAL GAS	TOTAL	GWh	24,807	27,307	25,260	29,225	29,577	29,547	31,073	32,054
(15)		STEAM	GWh	3,910	2,869	1,647	914	731	738	816	850
(16)		CC	GWh	20,269	23,974	22,948	27,797	28,369	28,267	29,737	30,602
(17)		CT	GWh	628	464	665	513	478	543	520	602
(18)	OTHER 2/										
	QF PURCHASES		GWh	1,831	1,754	1,919	1,920	1,929	1,923	1,923	1,922
	RENEWABLES OTHER		GWh	0	0	0	0	0	0	0	0
	RENEWABLES MSW		GWh	714	896	1,057	797	802	800	800	800
	RENEWABLES BIOMASS		GWh	512	584	186	33	390	389	389	389
	RENEWABLES SOLAR		GWh	5	16	47	403	1,241	2,137	2,950	3,286
	IMPORT FROM OUT OF STATE		GWh	1,982	1,545	1,400	797	791	116	0	0
	EXPORT TO OUT OF STATE		GWh	-31	-4	0	0	0	0	0	0
(19)	NET ENERGY FOR LOAD		GWh	42,854	42,919	43,060	43,331	44,063	44,555	45,088	45,515

1/ NET ENERGY PURCHASED (+) OR SOLD (-) WITHIN THE FRCC REGION.

2/ NET ENERGY PURCHASED (+) OR SOLD (-).

DUKE ENERGY FLORIDA

SCHEDULE 6.2
ENERGY SOURCES (PERCENT)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
				-ACTUAL-							
			UNITS	2016	2017	2018	2019	2020	2021	2022	2023
(1)	ANNUAL FIRM INTERCHANGE 1/		%	9.5%	4.7%	3.8%	2.0%	2.2%	2.8%	2.9%	3.8%
(2)	NUCLEAR		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(3)	COAL		%	20.7%	20.3%	26.7%	21.4%	19.0%	18.7%	14.6%	11.7%
(4)	RESIDUAL	TOTAL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(5)		STEAM	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(6)		CC	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(7)		CT	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(8)		DIESEL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(9)	DISTILLATE	TOTAL	%	0.2%	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%	0.1%
(10)		STEAM	%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(11)		CC	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(12)		CT	%	0.1%	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%	0.1%
(13)		DIESEL	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(14)	NATURAL GAS	TOTAL	%	57.9%	63.6%	58.7%	67.4%	67.1%	66.3%	68.9%	70.4%
(15)		STEAM	%	9.1%	6.7%	3.8%	2.1%	1.7%	1.7%	1.8%	1.9%
(16)		CC	%	47.3%	55.9%	53.3%	64.2%	64.4%	63.4%	66.0%	67.2%
(17)		CT	%	1.5%	1.1%	1.5%	1.2%	1.1%	1.2%	1.2%	1.3%
(18)	OTHER 2/										
	QF PURCHASES		%	4.3%	4.1%	4.5%	4.4%	4.4%	4.3%	4.3%	4.2%
	RENEWABLES OTHER		%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	RENEWABLES MSW		%	1.7%	2.1%	2.5%	1.8%	1.8%	1.8%	1.8%	1.8%
	RENEWABLES BIOMASS		%	1.2%	1.4%	0.4%	0.1%	0.9%	0.9%	0.9%	0.9%
	RENEWABLES SOLAR		%	0.0%	0.0%	0.1%	0.9%	2.8%	4.8%	6.5%	7.2%
	IMPORT FROM OUT OF STATE		%	4.6%	3.6%	3.3%	1.8%	1.8%	0.3%	0.0%	0.0%
	EXPORT TO OUT OF STATE		%	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(19)	NET ENERGY FOR LOAD		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

1/ NET ENERGY PURCHASED (+) OR SOLD (-) WITHIN THE FRCC REGION.

2/ NET ENERGY PURCHASED (+) OR SOLD (-).