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February 5, 2018

VIA: ELECTRONIC FILING

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

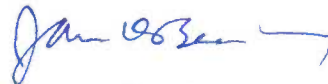
Re: Petition for a limited proceeding to approve first solar base rate adjustment (SoBRA) effective September 1, 2018; FPSC Docket No. 20170260-EI

Dear Ms. Stauffer:

Attached for filing in the above docket are Tampa Electric Company's responses to Staff's First Data Request (Nos. 1-15) dated January 19, 2018. Portions of response to Data Request No. 10 are confidential and were separately filed on February 2, 2018, subject to a Request for Confidential Classification and Motion for Temporary Protective Order.

Thank you for your assistance in connection with this matter.

Sincerely,



James D. Beasley

JDB/pp
Attachment

**TAMPA ELECTRIC COMPANY
DOCKET NO. 20170260-EI
STAFF'S FIRST DATA REQUEST
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1. Please refer to the Direct Testimony of TECO witness R. James Rocha, page 16, lines 11-25.
 - a. Please fully explain how the Company developed the \$205.3 million projected value of fuel savings presented in this section of testimony.
 - b. Please identify the source and date of TECO's fuel price forecast used in developing the Current Present Value of Revenue Requirements (CPVRR) analysis of the proposed First Solar Base Rate Adjustment (SoBRA) Transaction.
 - c. Please identify the date, if known, of TECO's next/updated fuel price forecast that will be used for Company/business planning purposes.
 - d. Please discuss TECO's fuel forecast methodology. Please also remark on approximate the length of a time TECO has employed this same or very similar fuel forecasting methodology for company planning purposes.
 - e. Please fully explain how TECO developed the \$12 million projected value of (reduced) emissions presented in this section of testimony. Please also specify what particular "emissions" are being referred to and associate a dollar figure to the specific emission type.
 - f. Please identify the sources and dates of all environmental compliance cost related forecasts TECO used in developing its CPVRR analysis of the proposed First SoBRA Transaction.
 - g. Please discuss TECO's environmental compliance cost related forecast methodology. Please also remark on approximate the length of a time TECO has employed this same or very similar methodology.
 - h. Please provide a detailed explanation of the sensitivity analyses TECO performed with regard to forecasted fuel prices and forecasted market prices for carbon dioxide (CO₂) in testing the robustness of the projected cost savings.

- A. The requested information is provided below.
 - a. Using the company's Integrated Resource Planning process, a long term base case model was prepared without the first tranche of solar generation. Next, starting from this base case, a change case model was prepared with the first tranche, 145 MW of solar generation in-service September 2018. Both the base case and change case were run with the production cost modeling software to determine fuel costs for both cases. The change case system fuel cost was then subtracted from the base case system fuel cost equating to \$205.3 million in savings to customers.

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- b.** The fuel forecast used in the CPVRR analysis for the first tranche of solar is the same fuel forecast used in preparing the 2018 projected costs and cost recovery factors approved in Docket No. 20170001-EI.
- c.** The fuel price forecast will be updated in Summer 2018 to prepare the 2019 projected fuel cost recovery factors.
- d.** Tampa Electric has used the same methodology to forecast fuel commodity prices for approximately the last ten years. The methodology is consistent across commodities. It uses market indicators (e.g., NYMEX futures contracts) to estimate the near-term price (one to three years). The methodology then uses a commercially available, published fuel commodity price forecast from an independent energy consulting firm (e.g., PIRA, Wood MacKenzie) for the mid-term (two to twenty years). The final long-term portion of the fuel price forecast is then escalated using an independent source for the annual price changes (e.g., EIA Long Term Energy Outlook). Blending of sources is used to transition between time periods. The forecast is produced early each summer to support the late-summer fuel clause actual-estimate and projection filings and is used for one year until the next official forecast is produced. The specific sources, time periods and blending approach has changed occasionally over the past ten years, but the fundamental approach of using independent sources for the forecast period that they are most appropriate has not changed.
- e.** A long-term base case model was prepared without the first tranche of solar. Next, starting from this base case, a change case model was prepared with the first tranche, 145 MW of solar in-service September 2018. Both the base case and change case were run with the production cost modeling software to determine CO₂ and NO_x volumes for both cases using the company's emission factors. Tampa Electric then calculated the avoided emissions between these two cases and multiplied them by a CO₂ price forecast from a global consulting services company, ICF International, Inc., and an estimated NO_x cost estimated using a previous sale of Tampa Electric's NO_x Ozone Season allowances. These calculations resulted in \$12 million of projected value of reduced emissions from NO_x and CO₂, approximately \$11.3 million of CO₂ and \$0.8 million of

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NO_x forecasted. Several policies and regulations relating to emissions valuation are in various stages of development and/or litigation and the anticipated value of emission reductions is captured in the forecast.

- f.** The CO₂ price forecast used in the cost effectiveness analysis for the first tranche of solar was purchased from a global consulting services company, ICF International, Inc., and developed in the third quarter of 2017. The NO_x price forecast is estimated using an actual sale of Tampa Electric's NO_x Ozone Season allowances in 2016 and escalated by one percent a year after 2017.
- g.** Tampa Electric has been tracking CO₂ impacts since the initial Clean Power Plan talks began around June 2014. Since that time, the company has assessed carbon emissions as a below-the-line consideration for each project.
- h.** The fuel forecast sensitivities used in the CPVRR analysis for the first tranche of solar are from the same fuel forecast used in preparing the 2018 projected cost recovery factors approved in Docket No. 20170001-EI. The high and low fuel forecasts were prepared contemporaneously with the base fuel forecast and are shown in the company's response to Data Request No. 9. The results of the high and low fuel forecast sensitivities are shown in the following tables.

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Delta CPWRR Revenue Requirements - Base Fuel Sensitivity (2017 NPV)	Cost/(Savings) (\$ millions)
Capital RR - Other New Units	(\$138.1)
Capital RR - Solar New Arrays (w/Interconnect)	\$167.9
RR of Land for Solar	\$31.2
System VOM	(\$10.1)
FOM - Other Future Units	(\$5.2)
FOM - Solar Future Arrays	\$15.8
System Fuel	(\$205.3)
Sub Total w/o NO_x or CO₂ Cost	(\$143.9)
Plus Emissions Costs	
CO ₂ - Base	(\$11.3)
CO ₂ - High	(\$41.8)
CO ₂ - Low	\$0.0
NO _x - Base	(\$0.8)
Total w/ CO₂ (Base) & NO_x Cost	(\$155.9)
Total w/ CO₂ (High) & NO_x Cost	(\$186.4)
Total w/ CO₂ (Low) & NO_x Cost	(\$144.7)

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Delta CPWRR Revenue Requirements - High Fuel Sensitivity (2017 NPV)	Cost/(Savings) (\$ millions)
Capital RR - Other New Units	(\$138.1)
Capital RR - Solar New Arrays (w/Interconnect)	\$167.9
RR of Land for Solar	\$31.2
System VOM	(\$9.7)
FOM - Other Future Units	(\$5.2)
FOM - Solar Future Arrays	\$15.8
System Fuel	(\$270.1)
Sub Total w/o NO_x or CO₂ Cost	(\$208.2)
Plus Emissions Costs	
CO ₂ - Base	(\$11.3)
CO ₂ - High	(\$41.1)
CO ₂ - Low	\$0.0
NO _x - Base	(\$0.4)
Total w/ CO₂ (Base) & NO_x Cost	(\$219.9)
Total w/ CO₂ (High) & NO_x Cost	(\$249.7)
Total w/ CO₂ (Low) & NO_x Cost	(\$208.6)

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Delta CPWRR Revenue Requirements - Low Fuel Sensitivity (2017 NPV)	Cost/(Savings) (\$ millions)
Capital RR - Other New Units	(\$138.1)
Capital RR - Solar New Arrays (w/Interconnect)	\$167.9
RR of Land for Solar	\$31.2
System VOM	(\$10.7)
FOM - Other Future Units	(\$5.2)
FOM - Solar Future Arrays	\$15.8
System Fuel	(\$150.7)
Sub Total w/o NO_x or CO₂ Cost	(\$89.8)
Plus Emissions Costs	
CO ₂ - Base	(\$12.6)
CO ₂ - High	(\$46.2)
CO ₂ - Low	\$0.0
NO _x - Base	(\$1.0)
Total w/ CO₂ (Base) & NO_x Cost	(\$103.5)
Total w/ CO₂ (High) & NO_x Cost	(\$137.0)
Total w/ CO₂ (Low) & NO_x Cost	(\$90.9)

The sensitivity analyses of CO₂ emissions costs were performed by using the dollars per ton of ICF's 2017 Q3 forecast for the high, low and base sensitivities. These dollars per ton were then multiplied by the actual tons of CO₂ emitted in each run. The delta of the emissions costs from the change case to the base case equates to the estimated reduction in CO₂ emissions costs. The CO₂ emissions cost sensitivities were applied separately from the fuel sensitivities.

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2. Please provide a summary of all the existing federal, state, and local government policies and rules regarding the regulation of CO₂ emissions. Please also discuss the economic impacts of any such policies or rules.
- A. The following is a summary of the potentially relevant existing federal policies and rules regarding the regulation of CO₂ emissions and economic impacts if applicable. There are currently no state or local policies or rules relevant to the subject testimony.

Greenhouse Gas Mandatory Reporting Rule – 40 CFR 98: In 2009, the Environmental Protection Agency (“EPA”) promulgated a regulation to require reporting of greenhouse gas emissions from multiple sectors of the economy. The final rule applies to fossil fuel suppliers and industrial gas suppliers, direct greenhouse gas emitters and manufacturers of heavy-duty and off-road vehicles and engines. The rule does not require control of greenhouse gases, rather it requires only that sources above certain threshold levels monitor and report emissions. Tampa Electric’s Greenhouse Gas (“GHG”) Reporting program was approved by the Commission in Docket No. 090508-EI, Order No. PSC-10-0157-PAA-EI, issued March 22, 2010, and is a result of the EPA’s Mandatory reporting rule requiring annual reporting of greenhouse gas emissions. Tampa Electric was required to report greenhouse gas emissions for the first time in 2011. Reporting for the EPA’s Greenhouse Gas Mandatory Reporting rule will continue in 2018. For 2018, this activity is projected to result in approximately \$93,149 of O&M expenditures.

Prevention of Significant Deterioration - 40 CFR 52: This EPA rule became effective January 2, 2011. It addresses the GHG emission threshold triggers that would require permitting review of new and/or major modifications to existing stationary sources of GHG emissions. A subsequent U. S. Supreme Court ruling narrowed the EPA’s authority to implement this rule, but the key provisions remain applicable to Tampa Electric. While this rule does not have an immediate impact on Tampa Electric’s operations, GHG permitting was completed for Tampa Electric’s most recent base load unit, the Polk Unit 2 – 5 conversion to combined cycle. These standards do not directly pertain to the scope of the subject testimony; however, the standards are not expected to have any significant economic impact to Tampa Electric’s current plans to meet load demand.

New Source Performance Standards (NSPS) – 40 CFR 60 Subpart TTTT: The New Source Performance Standards (NSPS) for CO₂ emissions from

new electric generating units were promulgated on October 23, 2015. The rule is applicable to any steam generating unit, integrated gasification combined cycle, or stationary CTG that commenced construction after January 8, 2014, or commenced modification or reconstruction after June 18, 2014. This rule is being challenged in the D.C. Circuit, and the case is currently in temporary abeyance. These standards do not directly pertain to the scope of the subject testimony; however, the standards are not expected to have any significant economic impact to Tampa Electric's current plans to meet load demand.

Standards for Modified/Reconstructed Sources - 40 CFR 60 Subpart TTTT: On October 23, 2015, EPA published final standards for existing units that are modified or reconstructed. This rule is being challenged in the D.C. Circuit. These standards do not directly pertain to the scope of the subject testimony; however, the standards are not expected to have any significant economic impact to Tampa Electric's current plans to meet load demand.

Emission Guidelines and State Standards for Existing Sources (Clean Power Plan) - 40 CFR 60 Subpart UUUU: On October 23, 2015, EPA published final Emission Guidelines for existing utility units, setting individual statewide emission rate goals, and directing states to submit initial plans to achieve the goal by September 6, 2016. On Feb. 9, 2016 the Supreme Court stayed implementation of the rule. Florida Department of Environmental Protection ("FDEP") is not actively working on any state plan due to the Supreme Court's stay. These standards were designed to incentivize renewable energy development that is in the scope of the proposed projects. However, on October 16, 2017, EPA published a notice of its intent to repeal the Clean Power Plan rules for existing units. On December 28, 2017, EPA published an Advance Notice of Proposed Rulemaking to solicit comments on EPA's consideration of a new rule to limit GHGs from existing electric generating units. Since the Clean Power Plan replacement rule is in the early stages of development, Tampa Electric utilized the ICF International, Inc. study developed in the third quarter of 2017 to provide a forecasted cost of CO₂ emissions.

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- 3.** To date, has TECO incurred any costs related to emissions of CO₂? If so, please discuss the economic details as well as the method of cost recovery.

- A.** As described in the response to Data Request No. 2, Tampa Electric's GHG Reporting program is the only program for which Tampa Electric has incurred costs subject to cost recovery. The project was approved by the Commission in Docket No. 090508-EI, Order No. PSC-10-0157-PAA-EI, issued March 22, 2010, and is a result of the EPA's Mandatory Reporting Rule requiring annual reporting of greenhouse gas emissions. Tampa Electric was required to report greenhouse gas emissions for the first time in 2011. Reporting for the EPA's Greenhouse Gas Mandatory Reporting Rule will continue in 2018. For 2018, this activity is projected to result in approximately \$93,149 of O&M expenditures.

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- 4.** If the response is negative, when does TECO believe it will be affected by CO2 emissions regulation/costs of emitting?
 - A.** The Clean Power Plan proposed repeal and replacement rule development is in progress, and it is possible that final rules could be promulgated by the end of 2018. However, as with prior rules, litigation is extremely likely and uncertainty relating to final regulations and cost of emitting GHG's is expected to continue for several years.

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- 5.** Please refer to the Direct Testimony of TECO witness Rocha, page 17, lines 1-14. Please discuss how the CO₂, nitrogen oxide (NO_x), and sulfur dioxide (SO₂) reduction amounts presented in this section of testimony were formulated and concluded.

- A.** The emissions reductions stated in the direct testimony of witness Rocha at page 17, lines 1-14, are a direct result of the two cases described in the company's response to Data Request No. 1(a). The tons of CO₂, NO_x, and SO₂ are calculated based on the dispatch of Tampa Electric's generation fleet, then applying an emission rate for each fuel type consumed. The emission rates are calculated based on actual average emission rates derived from Continuous Emissions Monitoring Systems associated with specific emission units operating on specific fuels as projected by Tampa Electric's Resource Planning model runs of the two cases described above. Although SO₂ reductions will also be realized, the current market value of SO₂ in the Acid Rain Program is too low to be material to this evaluation. However, rules such as the Cross State Air Pollution Rule are in various stages of development and litigation. If Tampa Electric becomes subject to future updates of these rules, the value of SO₂ reduction could become relevant to this analysis.

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- 6.** Please refer to the Direct Testimony of TECO witness Rocha, page 16, lines 14-18. If the \$155.9 million customer savings figure presented in this section of testimony includes costs related to CO₂ emission, please provide an alternative CPVRR assuming zero CO₂ costs throughout the analysis term.

- A.** As shown in the direct testimony of witness Rocha, Exhibit No. RJR-1, Document No. 4, the differential CPVRR is favorable for customers by \$143.9 million before any value for reduced emissions is included. The estimated emissions reductions in Tampa Electric's analysis are \$11.3 million of CO₂ and \$0.8 million of NO_x forecasted (\$12.0 million after rounding). The differential CPVRR is favorable for customers by \$144.7 million without CO₂ emission reductions and including the value of reduced NO_x emissions.

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7. Please provide the percent error in TECO's delivered natural gas price forecasts out 5 to 10 years for TECO's 2002 through 2007 Ten Year Site Plans, per the following tables.

Accuracy of Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast Error Rate (%)					
	Years Prior					
	10	9	8	7	6	5
2012						
2013						
2014						
2015						
2016						
2017						
Average						

Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast (\$/MMbtu)					
	Years Prior					
	10	9	8	7	6	5
2012						
2013						
2014						
2015						
2016						
2017						
Average						

Natural Gas Price

Year	Natural Gas Price Annual Actuals (\$/MMbtu)					
	Years Prior					
	10	9	8	7	6	5
2012						
2013						
2014						
2015						
2016						
2017						
Average						

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- A.** Tampa Electric recommends caution in drawing conclusions from the requested window of information. These forecasts were produced in 2002 – 2007 for the years 2012 – 2017. At the time the forecasts were produced, the shale gas revolution was unknown and thus expectations were for higher natural gas costs. Once the shale gas revolution began in approximately 2009/2010, actual natural gas prices for subsequent years (2012 – 2017) ended up much lower than had been expected a decade before.

The requested information is provided in the following tables.

Accuracy of Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast Error Rate (%)					
	Years Prior					
	10	9	8	7	6	5
2012	-8%	-26%	-20%	-34%	-37%	-23%
2013	-7%	-25%	-6%	-31%	-35%	-21%
2014	-2%	-21%	-7%	-24%	-31%	-16%
2015	-32%	-44%	-29%	-44%	-51%	-42%
2016	-37%	-49%	-41%	-49%	-54%	-48%
2017	-39%	-50%	-46%	-51%	-55%	-51%
Average	-22%	-36%	-26%	-39%	-44%	-35%

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Natural Gas Price Forecasts

Year	Natural Gas Price Annual Forecast (\$/mmBtu)					
	Years Prior					
	10	9	8	7	6	5
2012	5.48	6.80	6.30	7.71	7.98	6.55
2013	5.69	7.04	5.62	7.62	8.17	6.72
2014	5.91	7.29	6.21	7.57	8.37	6.91
2015	6.16	7.55	5.87	7.52	8.58	7.25
2016	6.39	7.82	6.82	7.84	8.79	7.70
2017	6.62	8.10	7.46	8.18	9.01	8.26
Average	6.04	7.43	6.38	7.74	8.48	7.23
Notes:	A	B	C	D	E	F
<p>A. Forecasted prices for this column are from 2002 TYSP B. Forecasted prices for this column are from 2003 TYSP C. Forecasted prices for this column are from 2004 TYSP D. Forecasted prices for this column are from 2005 TYSP E. Forecasted prices for this column are from 2006 TYSP F. Forecasted prices for this column are from 2007 TYSP</p>						

Natural Gas Price

Year	Natural Gas Price Annual Actuals (\$/mmBtu)					
	Years Prior					
	10	9	8	7	6	5
2012	5.06					
2013	5.29					
2014	5.79					
2015	4.20					
2016	4.02					
2017	4.01					
Average	4.73					
Notes:	G					
G. Actual Fuel Prices						

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8. Please provide the percent error in TECO's delivered coal price forecasts out 5 to 10 years for TECO's 2002 through 2007 Ten Year Site Plans, per the following tables.

Accuracy of Coal Price Forecasts

Year	Coal Price Annual Forecast Error Rate (%)					
	Years Prior					
	10	9	8	7	6	5
2012						
2013						
2014						
2015						
2016						
2017						
Average						

Coal Price Forecasts

Year	Coal Price Annual Forecast (\$/MMbtu)					
	Years Prior					
	10	9	8	7	6	5
2012						
2013						
2014						
2015						
2016						
2017						
Average						

Coal Price

Year	Coal Price Annual Actuals (\$/MMbtu)					
	Years Prior					
	10	9	8	7	6	5
2012						
2013						
2014						
2015						
2016						
2017						
Average						

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- A.** Tampa Electric recommends caution in drawing conclusions from the requested window of information. The forecasts are from 2002 through 2007, 10 to 15 years prior to the forecasted period. Tampa Electric uses a reasonable methodology and sound sources for developing its long-term fuel price forecasts.

The requested information is provided in the following tables.

Accuracy of Coal Price Forecasts

Year	Coal Price Annual Forecast Error Rate (%)					
	Years Prior					
	10	9	8	7	6	5
2012	66%	63%	60%	27%	37%	17%
2013	59%	56%	53%	19%	31%	11%
2014	63%	61%	58%	25%	35%	12%
2015	54%	52%	49%	19%	28%	5%
2016	59%	57%	55%	19%	33%	7%
2017	40%	39%	36%	3%	17%	-8%
Average	57%	54%	52%	18%	30%	7%

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Coal Price Forecasts

Year	Coal Price Annual Forecast (\$/mmBtu)					
	Years Prior					
	10	9	8	7	6	5
2012	2.06	2.10	2.14	2.69	2.50	2.92
2013	2.10	2.13	2.17	2.79	2.54	2.99
2014	2.14	2.17	2.21	2.79	2.57	3.10
2015	2.18	2.21	2.24	2.81	2.61	3.20
2016	2.21	2.24	2.28	2.96	2.65	3.30
2017	2.25	2.27	2.32	3.05	2.69	3.42
Average	2.16	2.19	2.23	2.85	2.59	3.16
Notes:	A	B	C	D	E	F
<p>A. Forecasted prices for this column are from 2002 TYSP B. Forecasted prices for this column are from 2003 TYSP C. Forecasted prices for this column are from 2004 TYSP D. Forecasted prices for this column are from 2005 TYSP E. Forecasted prices for this column are from 2006 TYSP F. Forecasted prices for this column are from 2007 TYSP</p>						

Coal Price

Year	Coal Price Annual Actuals (\$/mmBtu)					
	Years Prior					
	10	9	8	7	6	5
2012	3.43					
2013	3.33					
2014	3.48					
2015	3.35					
2016	3.52					
2017	3.15					
Average	3.38					
Notes:	G					
G. Actual Fuel Prices						

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- 9.** Please refer to the Direct Testimony of TECO witness Rocha, page 16, lines 11-25. Please provide a copy of the Company's fuel forecast relied upon in developing its CPVRR analysis referenced in this section of testimony.

- A.** Please refer to the Direct Testimony of witness Rocha, Exhibit No. RJR-1, Document No. 2, Bates page 22, for the base fuel forecast. The high and low fuel forecasts are provided in the following table.

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	July 2017 High Fuel Forecast (\$/mmBtu)		July 2017 Low Fuel Forecast (\$/mmBtu)		
	Coal	Natural Gas	Coal	Natural Gas	
2017	2.49	4.98	2017	1.87	2.43
2018	2.61	4.59	2018	1.95	2.24
2019	3.02	4.65	2019	2.27	2.27
2020	3.33	5.08	2020	2.49	2.48
2021	3.54	5.42	2021	2.65	2.64
2022	3.59	5.60	2022	2.69	2.73
2023	3.65	5.99	2023	2.73	2.92
2024	3.70	6.35	2024	2.77	3.09
2025	3.74	6.71	2025	2.80	3.27
2026	3.83	7.07	2026	2.87	3.44
2027	3.93	7.45	2027	2.95	3.63
2028	4.18	8.29	2028	3.13	4.04
2029	4.41	8.67	2029	3.31	4.22
2030	4.73	9.48	2030	3.55	4.61
2031	4.82	9.83	2031	3.61	4.79
2032	5.04	10.65	2032	3.77	5.18
2033	5.05	10.76	2033	3.78	5.24
2034	5.22	11.50	2034	3.91	5.59
2035	5.32	11.96	2035	3.98	5.82
2036	5.49	12.18	2036	4.11	5.93
2037	5.68	12.47	2037	4.26	6.07
2038	5.87	12.71	2038	4.40	6.18
2039	6.09	13.07	2039	4.56	6.36
2040	6.30	13.34	2040	4.72	6.49
2041	6.54	13.70	2041	4.90	6.67
2042	6.85	14.28	2042	5.13	6.95
2043	7.21	14.97	2043	5.41	7.28
2044	7.53	15.47	2044	5.64	7.53
2045	7.87	16.04	2045	5.90	7.80
2046	8.24	16.61	2046	6.17	8.08
2047	8.71	17.43	2047	6.53	8.48

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- 10.** Please refer to the Direct Testimony of TECO witness Rocha, page 16, lines 11-25. Please provide copies of any environmental compliance cost related documents the Company relied upon in developing the CPVRR analysis of its proposed First SoBRA Transaction.

- A.** Please see ICF 2017 Q3 CO₂ study attached.

BATES STAMPED PAGES

22 THROUGH 36

ARE REDACTED

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- 11.** Please refer to the Direct Testimony of TECO witness Rocha, page 16, lines 21-25. Please provide all (if any) alternative fuel and emissions forecasts TECO used to gauge the robustness of its proposed SoBRA transaction.

- A.** Please see the company's responses to Data Request No. 9 and 10 for the alternative forecasts and the response to Data Request No. 1(h) for an explanation of the sensitivity analyses.

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- 12.** Please refer to the Direct Testimony of TECO witness Rocha, page 16, lines 21-25. Please provide all documentation (if any) the Company may have related to the robustness testing (methodology) discussed in this section of testimony.

- A.** The company determined customers would realize savings through a range of possible future scenarios. The company performed sensitivities on fuel forecasts and emissions forecasts, the results of which have been submitted in the response to Data Request No. 1(h).

Please refer to the Direct Testimony of TECO witness J. Rocha and Exhibit RJR-1 for the following questions.

- 13.** Please refer to page 7, line 23, for the following questions.
- a.** Please provide a detailed explanation of the “bonus depreciation.”
 - b.** Please specify how the “bonus depreciation” was used in the annual revenue requirement calculation for TECO’s First SoBRA.
 - c.** Please provide working papers in Microsoft Excel, with formulas intact, to support your response to (b), above.

- A. a.** Bonus depreciation was authorized by federal legislation in order to stimulate the economy by providing one-time bonus tax depreciation for qualifying investments in the year of in-service. Code Section 168(k) provides a phased down bonus depreciation deduction for qualifying property placed in service by 12/31/2020 at the respective rates of 50%, 40%, and 30% for spending in 2017, 2018, and 2019, respectively. For the case of Tranche 1 as of the date of filing the company’s petition in this docket, it allowed for a 50% and 40% bonus deduction for 2017 and 2018 spending, respectively, on the investment of eligible business property.

However, the recent Tax Cuts and Jobs Act (“Act”) enacted on December 22, 2017 modified the deduction. The Act raises the bonus depreciation rate to 100%; however, regulated public utilities are specifically excluded from the definition of qualifying property and therefore exempt from the 100% bonus depreciation rate. The Act however provides for a transition rule which maintains the phased down bonus depreciation rates allowed for property acquired before September 28, 2017 and placed in service after September 27, 2017. Because of this transition period, for the case of Tranche 1, the company still assumed a 50% bonus depreciation for capital expenditures through December 31, 2017 and a 40% bonus depreciation for capital expenditures after December 31, 2017 with a corresponding no later than in-service date of December 31, 2018. It is important to note that the Department of the Treasury and/or the Internal Revenue Service are expected to issue clarification on the transition rules which could reduce the amount of qualifying property subject to bonus depreciation for Tranche 1.

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- b.** As defined by the federal legislation, Bonus Depreciation is applied in the first year of tax depreciation for each Tranche 1 solar project. Bonus depreciation only affects tax depreciation, which affects cumulative deferred taxes, which is then used to adjust rate base when calculating the return on capital.

- c.** Please see Excel file labeled “Q13 – Tranche 1 Full First Year Bonus Depreciation.xlsx.”

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- 14.** Please refer to pages 9 (lines 10 - 11) and 11 (lines 11 - 12) for the following questions.
- a.** Referring to page 11, please specify the amount of depreciation expense included in the Revenue Requirement for First SoBRA presented in Document No. 3 of Exhibit RJR-1.
 - b.** Referring to page 11, please explain in detail how the amount of depreciation expense discussed in Question (a) was derived.
 - c.** Please provide working papers in Microsoft Excel, with formulas intact, to support your response to (b) above.
 - d.** Is the “depreciation expense” referred on page 9, line 11, the same as what specified in Question (a)?
 - e.** Referring to page 9, please explain why the depreciation expense discussed in Questions (a) and (c) deem as “reasonable estimates.”
 - f.** For each affected depreciation accounts, please identify the following that were used in deriving the depreciation expense discussed in Question (a): (i) plant-in-service amount each month; (ii) the depreciation rate used.
- A.**
- a.** Book depreciation is \$6.1 million for a full year. Bonus depreciation only affects tax depreciation, which affects cumulative deferred taxes, which is then used to adjust rate base when calculating the return on capital.
 - b.** The detailed costs of the Tranche 1 projects are described in Mr. Ward’s testimony. The cost is subject to a cap and a subsequent true-up. Tampa Electric determined that the appropriate economic life of a photovoltaic solar facility is thirty years.
 - c.** Annual book depreciation is 1/30th of original cost. See the company’s response to Data Request No. 13(c), Excel file “Q13 – Tranche 1 Full First Year Bonus Depreciation.xlsx.”
 - d.** Yes.

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- e.** See the company's response to Data Request No. 14(b). In addition, Tampa Electric is aware that other solar projects regulated by the FPSC have used a thirty-year book life. Future SoBRA true-up filings will capture any differences from estimated costs.

- f.** The company uses a thirty-year book life, with straight line depreciation for tracking photovoltaic solar facilities.

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- 15.** Referring to page 12, line 18, please explain in detail how the referenced “book depreciation” was calculated.
- a. Please provide working papers in Microsoft Excel, with formulas intact, to support your response to Interrogatory No. 3.
- A.** Annual book depreciation is 1/30th of original cost.
- a. The company has been told by Staff that “to support your response to Interrogatory No. 3” should have said “for this calculation” and responds accordingly. See the company’s response to Data Request No. 13(c), Excel file “Q13 – Tranche 1 Full First Year Bonus Depreciation.xlsx.”