

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: May 10, 2022
TO: Adam Teitzman, Commission Clerk, Office of Commission Clerk
FROM: Takira Thompson, Engineering Specialist, Division of Engineering
RE: Docket No. 20220000-OT - Undocketed filings for 2022.

*TTT LK
POE*

Please file in the above mentioned docket file the attached document, Staff's Data Request #3 to FPL regarding the Ten-Year Site Plan.

TTT/pz

Attachment

From: [Patti Zellner](mailto:Patti.Zellner@psc.state.fl.us)
To: "mark.bubriski@fpl.com"
Cc: "[Nanci Nesmith@fpl.com](mailto:Nanci.Nesmith@fpl.com)"; "Lisa.Roddy@nexteraenergy.com"; "Richard.hume@fpl.com"; Phillip Ellis; Takira Thompson; Donald Phillips; Laura King; Patti Zellner; Joann Parsons
Subject: DN 20220000-OT (Undocketed filings for 2022) Ten-Year Site Plan Review - Staff's Data Request #3 to FPL
Date: Tuesday, May 10, 2022 11:55:11 AM
Attachments: [2022 TYSP - Data Request #3.\(to FPL\).pdf](#)
[2022 TYSP - Data Request #3.\(to FPL\).docx](#)

May 10, 2022

Dear Mr. Bubriski,

Attached is Staff's Data Request #3 to FPL (in PDF and WORD format) for the Ten-Year Site Plan Review process. Please submit your responses to this data request to both the Florida Public Service Commission's (FPSC) Division of Engineering and the FPSC Office of Commission Clerk by following the instructions below:

Submission to the FPSC Division of Engineering

1. Please email your responses to Donald Phillips and Takira Thompson by **Tuesday, May 24, 2022**.
 - a. Please submit all **narrative** and any **non-narrative** (if applicable) responses following their respective questions in a **single Microsoft Word** document, making sure to preserve question order.

Submission to the FPSC Office of Commission Clerk

1. Please convert and combine the responses sent to the FPSC Division of Engineering into a **single PDF** document.
2. Please electronically file this PDF document via the Commission's website no later than **Tuesday, May 24, 2022**.
 - a. Navigate to www.floridapsc.com.
 - b. At the top of the page, hover the mouse cursor over the "Clerk's Office" tab.
 - c. Select from the drop-down menu "Electronic Filing Web Form."
 - d. Please complete the form, referencing "Docket No. 20220000-OT."
 - e. Attach to the form the PDF created in Step 1 as the "Primary PDF."
 - f. Submit the form.

If you have any questions, please contact Donald Phillips or Takira Thompson.

Donald Phillips Office: (850) 413-6974 Email: DPhillip@psc.state.fl.us	Takira Thompson Office: (850) 413-6592 Email: TThomps@psc.state.fl.us
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Sincerely,
Patti Zellner, Administrative Assistant
Division of Engineering
Phone: (850) 413-6208
Email: pzellner@psc.state.fl.us

Enclosure

cc: Office of Commission Clerk (20220000-OT – Undocketed filings for 2022)

1. Please provide all correspondence between Florida Power & Light (FPL or Utility) Company and FERC, NERC, and the FRCC regarding the 2021 Texas event and/or Florida's level of preparedness for similar winter weather conditions. As part of this response, please provide all press releases regarding FPL's system and preparedness level.

Please refer to FPL's 2022 Ten-Year Site Plan for the following questions.

2. Please refer to page 6.
 - a. Please define "extreme Winter event" as referenced to establish FPL's Recommended Plan. As part of this response, please indicate whether the extreme Winter event forecast is based on a single day with extremely low temperatures, or multiple days with extremely low temperatures.
 - b. The second paragraph, third sentence, reads "FPL experienced very high Winter loads in 1989 and 2010." Please provide a comparison of these two special winter events FPL experienced including, but not limited to, the minimum temperatures, heating degree hours (HDHs), daily peak demands, number of customer outages of varying durations, and the number of customers affected by blackouts.
 - c. Please provide all documentation used to determine the need to prepare for an extreme Winter event. This response should include any studies or reports completed, the scope and objective of any such study or report, direction from/presentations to management, etc., if any.
 - i. Were any probability studies conducted to determine the chance of an extreme Winter event occurring in the future? If not, please explain why. If so, please provide these studies.
3. Please refer to page 7.
 - a. Were either of the two steps discussed in the first paragraph incorporated following Order No. 22708, issued after the 1989 extreme Winter event? If not, please explain why not.
 - b. Please identify the dollar amount spent since FPL began the enhanced winterization of its generating units in 2021.
 - c. Will the backup fuel capabilities FPL intends to add at Manatee Unit 3 & Ft. Myers Unit 2 for extreme Winter events be accessible during the Summer as well in case of pipeline interruptions? If not, please explain why not.
 - i. Please explain if there are any environmental restrictions for burning backup fuel at any of FPL's generating plants.
 - d. Please identify the original retirement date and the anticipated retirement date for each of the five generating units the Utility intends to delay retirement of. As part of this response, please identify the cost for delaying retirement of each unit, the total amount of additional Winter capacity (megawatts (MW)) each unit is expected to provide, and how quickly each unit can be ready for Winter service.

8. Please refer to pages 34 and 90.
 - a. Please explain why the Exelon Generation/Hillabee plant and Rainbow Energy/Oleander PPA (Winter 2022 PPAs) contracts were entered into for the Winter of 2021-2022. As part of this response, please explain if these contracts were entered into due to extreme weather concerns. If not, please explain why.
 - i. If these contracts were entered into due to extreme weather concerns, please explain how FPL determined that these assets would be capable of providing capacity during an extreme Winter event.
 - ii. Were the Exelon Generation/Hillabee plant PPA resources and/or the Rainbow Energy/Oleander plant PPA resources necessary in meeting FPL's Winter 2021/2022 load?
 - b. Please explain the discrepancy between the 320 MW Rainbow Contract and the 310 MW Oleandar Plant PPA.
 - c. For each of the Winter 2022 PPAs, please provide at a minimum: the cost of the contract, cost per MW of the contract, and the term length of the contract.
 - i. For each PPA, how much, if any, energy did FPL receive during the term? As a part of this response please detail whether the PPA delivered energy during the winter peak
 - d. Please detail the timeline leading to FPL entering into each of the Winter 2022 PAAs. This timeline should include at a minimum: when FPL identified the need, when FPL began its internal approval process, when FPL began the bidding process, and when FPL entered the agreement.
 - e. Please explain how FPL chose each of the Winter 2022 PPAs. This response should include an explanation of the bidding process, the number of bids FPL received, and how FPL determined that each PPA was the most cost-effective PPA.
 - f. Please detail the number of bids FPL received, if any, in the process that resulted in the Winter 2022 PPAs
 - g. How did FPL determine that the Winter 2022 PPAs were the most cost effective way to meet the projected Winter 2021/2022 load?
 - h. Did FPL explore alternatives to meeting the needs besides the Winter 2022 PPAs? If so, please detail the alternatives that FPL explored.
 - i. Explain if FPL considered the Winter 2022 PPAs necessary on a reserve margin basis. If so, please explain why FPL would consider them necessary given the lower values assumed in the later years of FPL's recommended plan.
9. Please refer to page 57.
 - a. In second full paragraph, 1., please identify the threshold temperatures used to determine the HDHs and cooling degree hours (CDHs) for the respective residential, commercial, and industrial energy models. Please explain whether these thresholds are the same as those that were used in previous TYSPs.
 - b. In third full paragraph, referring to the statement "[t]he temperatures for each weather station are weighted based on the energy sales associated with that region," please

- explain if the “energy sales” are the actual data through 2021; and whether the “weight” associated with each weather station is updated annually and thus reflects 2021 energy sales by region in this TYSP.
10. Please refer to the statistical customer forecasting models discussed on page 58.
 - a. Please identify all the input variables used in each model.
 - b. Please identify, with explanation, how many years of input data were used for the development of each model.
 11. Please refer to page 62.
 - a. Please elaborate on the “energy efficiency variable.” Is it a binary variable?
 - b. Please elaborate on “[t]he estimated impacts from code and standards are based on the energy efficiency variables in the respective energy models.”
 12. Please refer to page 63.
 - a. Please detail the derivation of the projected private solar-caused NEL reduction, in the amount of 4,000 gigawatt-hour (GWh) by 2031, vs. 2,000 GWh by 2030 projected in FPL's 2021 TYSP. Please also explain the reasons or causes for the significant difference.
 - b. Please provide FPL's latest private solar forecasts (the respective annual customer numbers by class and the annual solar energy generation by class) in MS Excel format. Please also identify the associated assumptions and forecasting model(s) utilized with specifications of the input variables and forecasting method employed.
 13. Please refer to page 64 for the following questions regarding the energy-efficiency codes and standards (EECS).
 - a. Please explain why the impact of the EECS on the Summer peak load is significantly higher than that on the Winter peak load.
 - b. FPL's 2022 TYSP projected that the cumulative impacts from the EECS will effectively reduce the Summer peak by approximately 19% by 2031, vs. 17% by 2030 which was projected in the 2021 TYSP. Please explain the reason and/or causes for the increased projections.
 - c. Please detail the derivation of the projected EECS-contributed Summer peak reduction, in the amount of 1,640 MW approximately by 2031.
 14. Pages 65 through 66 read:

For the second step of the process [of determining peak demand under conditions of extreme weather], the P50 normal weather peak loads were then adjusted to reflect the additional load associated with the difference in normal weather versus the actual weather conditions experienced in December 1989. Two multiple linear regression models were developed, one each for the FPL and Gulf legacy areas, using historical daily peak loads

for those days with heating load and weather variables that are consistent with those utilized in the normal weather peak load models.

- a. Was the 1989 weather event the most extreme winter weather event Gulf legacy area has had historically? If not, what was it?
- b. Please identify all the assumptions and source of the data used in the development of the multiple linear regression models. Clearly identify the source dates of each data series.
- c. Please identify and describe all dependent and independent variables in each of these regression models.
- d. In MS Excel format, please provide for each model: (1) the data series of the dependent variable, including also the predicted data series resulting from the regression; (2) the forecast data for the dependent variable and the independent variables.
- e. Please explain how FPL validated these regression models.
- f. Please explain how FPL expects to evaluate the accuracy of its forecasts resulting from these regression models.
- g. Please elaborate on "using historical daily peak loads for those days with heating load and weather variables that are consistent with those utilized in the normal weather peak load models." As in, please clarify with explanation the following:
 - i. "those days,"
 - ii. the specific date/period of the "historical daily peak loads" utilized,
 - iii. the specific date/period of the "heating load" utilized,
 - iv. the specific date/period of the "weather variables" utilized.
- h. Please elaborate on "[t]his was done by developing multiple linear regression models based on historical daily data for those days with heating load." As in, please clarify with explanation for the following:
 - i. the specific date/period of the "historical data,"
 - ii. "those days,"
 - iii. the specific date/period of the "heating load" utilized.
- i. What is FPL's basis for relying upon an extreme weather assumption (December 1989), in conjunction with historical normal load profiles, to model Winter Peak demand, and to use such models to prepare its annual Winter Peak demand forecast, thereby replacing the normal weather assumption FPL has traditionally relied upon to prepare its models and forecasts for generation planning?
- j. Please provide all documents FPL relied upon supporting the need for FPL's second step in its two step approach to modelling its Winter Peak load.
- k. Please identify any other utility(ies) known to FPL which rely upon extreme weather assumptions to prepare its models and forecasts of Winter Peak Demand for purposes of preparing its primary recommendation for generation planning to regulatory authorities.
- l. If applicable, please identify any generation planning orders or decisions, known to FPL and issued by regulatory authority(ies), that were supported by utilities' winter peak demand forecasts prepared using models and forecast data based on extreme weather assumptions.

- m. Did FPL consider any models and/or methodologies for representing extreme winter weather impacts to its Winter Peak Demand forecasts other than the method described under the heading "System Winter Peak?" If so, please provide a description of all such models and/or methodologies and provide all related supporting documents.
 - i. If FPL did consider other models or methodologies, please explain why such models/methodologies were ultimately not proposed by FPL in its 2022 TYSP.
 - ii. If FPL did not consider other models or methodologies, please explain why not.
- 15. Please refer to page 66, which states that rationale for FPL's extreme weather winter peak demand forecasting approach using normal weather are inadequate for estimating peak demand under extreme weather such as occurred in December 1989.
 - a. Is FPL's recommendation to rely upon its extreme weather winter peak demand forecast based on an assumption that all, or nearly all, customer interruptions due to extreme winter weather in the future should be prevented?
 - b. If the answer to question (a) is affirmative, please explain why FPL has made this assumption.
- 16. Please refer to page 70, Business as Usual Case - P50 Winter Forecast Schedule 2.1, Column (9) Commercial Average kWh Consumption Per Customer. Please explain the reasons or causes for the projected steady annual reduction in projected consumption per customer throughout the forecasting horizon.
- 17. Please refer to page 71, Schedule 2.2 FPL History of Energy Consumption, Column (12) Industrial Average kWh Consumption Per Customer. Please explain the reasons or causes for the 2021 annual reduction in projected consumption per customer, from 259,969 kWh in 2020 to 247,894 kWh in 2021, or 1.2 percent approximately.
- 18. Please refer to page 72, Business As Usual Case - P50 Winter Load Schedule 2.2 Forecast of Energy Consumption, Column (12) Industrial Average kWh Consumption Per Customer. Please explain the reasons or causes for the projected reductions in projected consumption per customer in 2022 and 2023.
- 19. Please refer to pages 77 and 78.
 - a. Please refer to Schedule 3.2 – FPL History of Winter Peak Demand, Column 10, and Schedule 3.2 – Forecast of Extreme Winter Peak Demand, Column 10. Please explain why FPL anticipates an increase in Net Firm Demand from 14,993 MW in 2021 to 30,270 MW in 2022.
 - b. Please refer to page 181, Schedule 7.2, Column 9. Please explain the discrepancy in the values between Schedule 7.2, Column 9, and Schedule 3.2 – Forecast of Winter Peak Demand, Column 10.

20. Please refer to page 78, Schedule 3.2 – Forecast of Extreme Winter Peak Demand, Columns 6 and 7. Please explain how these values were determined, and why these values are increasing annually.

21. Please respond to the following questions regarding the table below. The table compares FPL's Business As Usual Plan for Winter Peak Demand Forecast versus FPL's Extreme Winter Peak Demand Forecast for the ten year time horizon contained in FPL's 2022 TYSP, using the data appearing on FPL 2022 TYSP, page 78, Schedule 3.2.
 - a. Is the annual difference between FPL's Extreme Winter Demand Forecast and its Business as Usual Winter Peak Demand Forecast, shown in the last two columns of the table (i.e. 9,107 MW to 10,365 MW, or approximately 43 percent annually) an accurate representation of the increase in Winter Peak demand which FPL is requesting the Commission to recognize for planning purposes relative to what FPL would have requested using normal weather assumptions similar to that used in prior years?
 - b. In recommending its 2022 Extreme Winter Peak Demand forecast, does FPL believe that an extreme winter event such as that of December 1989 is expected to occur with approximately the same frequency as in the past? If not, please explain any change in frequency expected and provide all relevant support.
 - c. Is it correct that FPL has prepared past Winter Peak Demand models and forecasts with the expectation of minimizing its forecast error rate, in an attempt to drive forecast peak demand error rate to be as close to zero as possible?
 - d. How does FPL believe its winter peak demand forecast error rate will be impacted by its use of the proposed Extreme Weather Forecast for Winter Demand?
 - e. For years in which normal weather prevails, does FPL anticipate that its average forecast error associated with its Extreme Weather Forecast for Winter Demand would be approximately 43 percent (the difference between FPL's normal weather and extreme weather demand forecasts)? Please explain why or why not?
 - f. If FPL does expect that its forecast error associated with its Extreme Weather Forecast for Winter Demand will approximate 43 percent for those years in which normal weather prevails, please explain why such a result would be acceptable from a regulatory perspective in Florida.

Year	FPL's Recommended Plan - Extreme Winter	FPL's Business as Usual Plan - P50 Winter	Difference	
	Net Firm Demand (MW)*	Net Firm Demand (MW)*	(MW)	Percentage
2022	30,270	21,163	9,106	43.0%
2023	30,783	21,527	9,256	43.0%
2024	31,312	21,894	9,418	43.0%
2025	31,675	22,121	9,554	43.2%
2026	32,125	22,438	9,687	43.2%
2027	32,494	22,673	9,821	43.3%
2028	32,938	22,982	9,956	43.3%
2029	33,406	23,318	10,088	43.3%
2030	33,844	23,632	10,212	43.2%
2031	34,364	23,999	10,364	43.2%
*Source:	FPL's 2022 TYSP, Schedule 3.2			

22. Please refer to page 86.
 - a. Please explain why the Utility decided that batteries were the best option for resource planning.
 - b. Please explain what alternatives, other than batteries, were considered in resource planning. As part of this response, please explain if combustion turbines were considered.
 - c. Please provide a detailed cost comparison of FPL’s Recommended Plan to its Business As Usual Plan. As part of this response, please identify the annual and cumulative present value revenue requirement, and the estimated residential bill impact for each plan.

23. Please refer to page 96.
 - a. Please provide a similar summary of larger resource additions/retirements for FPL’s Business As Usual Plan.
 - b. Please explain the benefit that FPL expects battery storage to provide for the immediate extreme weather conditions that FPL is planning for if the first battery is not anticipated to be in service until 2027.

24. Please refer to page 179.
 - a. Please refer to Schedule 7.2, Column 2. Please identify the annual MW of solar for 2022 through 2031.
 - b. Please refer to page 181, Schedule 7.2, Column 2. Please explain the discrepancy between 2022 through 2025 in Schedule 7.2 for the Recommended Plan and the Business As Usual Plan.

25. Please refer to FPL's 2022 TYSP and 2021 TYSP (presented as Attachment No. 1 of FPL's Response to Staff's First Data Request) for the following questions.
 - a. FPL's 2021 TYSP (page 60 of Attachment No. 1) reads "Residential energy sales are projected to grow at an average annual rate of 1.2% during the forecast period." FPL's 2022 TYSP (page 59) reads "2022 residential energy sales [...] are projected to grow at an average annual rate of 1.5% over the forecast period." Please identify/explain the major drivers of the increased projection of residential energy sales.
 - b. FPL's 2021 TYSP (page 61 of Attachment No. 1) reads "Commercial energy sales are projected to grow at an average annual rate of 0.9% during the forecast period." FPL's 2022 TYSP (page 60) reads "2022 commercial energy sales [...] are projected to grow at an average annual rate of 0.7% over the forecast period." Please identify/explain the major drivers of the decreased projection of commercial energy sales.
 - c. FPL's 2021 TYSP (page 62 of Attachment No. 1) reads "Industrial energy sales are projected to remain mostly flat during the forecast period, only growing at an average annual rate of 0.5%." FPL's 2022 TYSP (page 60) reads "2022 industrial energy sales [...] are projected to remain flat over the forecast period." Please identify/explain the major reason(s) for the further reduced industrial energy sales projection (de minimis vs. 0.5% growth over the forecast horizon).
26. FPL's 2021 TYSP, pages 55 through 56, indicated that FPL's system winter peak forecasting model includes a binary variable "to account for the lack of a Winter post-2011." Does FPL's respective 2022 P50 Winter model and Extreme Winter model include the same type of binary variable? Please explain your response.
27. FPL provides monthly as-available energy data to the Commission broken down into five regions (South, Southeast, Northeast, West, and Northwest). Please provide a description of which counties make up the different regions. Also, please estimate the winter peak demand increase, either in MW or percentage, for each region based upon FPL's extreme weather planning assumption.