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FPSC - COMMISSION CLERK

May 1, 2024

Florida Public Service Commission
Office of Commission Clerk
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket No. 20240000-OT
GRU's Response to TYSP Supplemental Data Request #1

Dear Sir/Madam,

Gainesville Regional Utilities hereby submits its electronic version of the Public Service Commission's Ten-Year Site Plan Supplemental Data Request #1. The Excel tables and other documents requested were emailed to Greg Davis and Phillip Ellis.

Please let me know if you have any questions regarding this document.

Sincerely,

/s/ Eric Neihaus, P.E.
Power Planning Engineer
Gainesville Regional Utilities

P.O. Box 147117, Station A130, Gainesville, FL 32614-7117 Telephone: (352) 393-1742

Instructions: Accompanying this data request is a Microsoft Excel (Excel) document titled "Data Request #1.Excel Tables," (Excel Tables File). For each question below that references the Excel Tables File, please complete the table and provide, in Excel Format, all data requested for those sheet(s)/tab(s) identified in parenthesis.

General Items

1. Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the current planning period (2024-2033) in PDF format.

   PDF document emailed to Greg Davis and Phillip Ellis on 4/11/2024.

2. Please provide an electronic copy of all schedules and tables in the Company's current planning period TYSP in Excel format.

   Microsoft Excel document emailed to Greg Davis and Phillip Ellis on 4/11/2024.

3. Please refer to the Excel Tables File (Financial Assumptions, Financial Escalation). Complete the tables by providing information on the financial assumptions and financial escalation assumptions used in developing the Company's TYSP. If any of the requested data is already included in the Company's current planning period TYSP, state so on the appropriate form.

   This data is provided in the attached Microsoft Excel file.

Load & Demand Forecasting

Historic Load & Demand

4. **[Investor-Owned Utilities Only]** Please refer to the Excel Tables File (Hourly System Load). Complete the table by providing, on a system-wide basis, the hourly system load in megawatts (MW) for the period January 1 through December 31 of the year prior to the current planning period. For leap years, please include load values for February 29. Otherwise, leave that row blank.

   GRU is not an Investor-Owned Utility.

   a. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time (March 12, 2023, to November 5, 2023).

   GRU is not an Investor-Owned Utility.

5. Please refer to the Excel Tables File (Historic Peak Demand). Complete the table by providing information on the monthly peak demand experienced during the three-year period prior to the current planning period, including the actual peak demand experienced, the amount of demand response activated during the peak, and the estimated total peak if demand response had not been activated. Please also provide the day, hour, and system-average temperature at the time of each monthly peak.

   This data is provided in the attached Microsoft Excel File.

Forecasted Load & Demand

6. Please identify the weather station(s) used for calculation of the system-wide temperature for the Company's service territory. If more than one weather station is utilized, please describe how a system-wide average is calculated.

   GRU utilizes climatological data from the weather station located at the Flight Service Station at the Gainesville Regional Airport. The National Weather Service call ID is GNV, and the WBAN number is 12816.

7. Please explain, to the extent not addressed in the Company's current planning period TYSP, how the reported forecasts of the number of customers, demand, and total retail energy sales were developed. In your response, please include the following information:

   - Methodology.
   - Assumptions.
   - Data sources.
   - Third-party consultant(s) involved.
   - Anticipated forecast accuracy.
   - Any difference/improvement(s) made compared with those forecasts used in the Company's most recent prior TYSP.

   The methodology, assumptions and data sources used in the development of GRU's customer, sales, and demand forecasts are described in detail on pages 10-11 of the TYSP. The forecast was done in-house without the use of any outside consultants. GRU assesses historical forecast accuracy but does not make prospective claims around its forecast accuracy. GRU has used the same forecast methodology for more than 20 years.

8. Please identify all closed and open Florida Public Service Commission (FPSC) dockets and all non-docketed FPSC matters which were/are based on the same load forecast used in the Company's current planning period TYSP.

   There are no matters before the FPSC that reference this forecast.

9. Please explain if your Company evaluates the accuracy of its forecasts of customer growth and annual retail energy sales presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

GRU evaluates forecast accuracy for number of customers, retail net energy for load, and summer peak demand. Internally, it is evaluated over a 20 year historical time frame. For purposes of this discussion, the historical evaluation period has been limited to 10 and 5 years. In general, GRU over-forecast prior to the 2008 recession and the more recent data proves to be more relevant.

   a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

GRU utilizes what is commonly known as an error fan analysis for evaluating historical forecast error. The data was added to the Excel question portion of this inquiry. Worksheet 9A shows the data and results for number of customers. Worksheet 9B shows the data and results for retail net energy.

   b. If your response is negative, please explain.

10. Please explain if your Company evaluates the accuracy of its forecasts of Summer/Winter Peak Energy Demand presented in its past TYSPs by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior.

GRU evaluates forecast accuracy for summer peak demand. GRU does not evaluate historical forecast accuracy for winter peak demand. GRU is a summer peaking system due in large part to the penetration of natural gas in its service territory. Summer peak demands are usually significantly higher than winter peak loads. However, winter peak loads are generally more volatile and forecast error, if evaluated, would likely be greater than forecast error association with summer peak loads.

   a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Excel format for the analysis of each forecast presented in the TYSPs filed with the Commission during the 20-year period prior to the current planning period. If your Company limits its analysis to a period shorter than 20 years prior to the current planning period, please provide what analysis you have and a narrative explaining why your Company limits its analysis period.

GRU utilizes an error fan analysis for evaluating historical forecast error. The data was added to the Excel question portion of this inquiry. Worksheet 10A shows the data and results for summer peak demand.

b. If your response is negative, please explain why.

11. Please explain any historic and forecasted trends or other information as requested below in each of the following:

a. Growth of customers, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

GRU forecasts number of customers separately for residential and three non-residential customer groups. In consideration of rate migration between non-residential customer groups, the three non-residential customer groups are discussed collectively here. The primary explanatory variable for determining projected number of customers is (estimates of) Alachua County population, and corresponding population projections published by the Bureau of Economic and Business Research at the University of Florida. From 2014-2023 residential customer growth averaged 1.16% per year. For the period 2024-2033, residential customer growth is projected to average 0.62% per year. From 2014-2023 non-residential customer growth averaged 0.92% per year. For the period 2024-2033, non-residential customer growth is projected to average 0.62% per year.

b. Average KWh consumption per customer, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

Residential consumption per customer declined 0.17% per year over the past 10 years. Over the first 10 years of our forecast, residential consumption per customer is projected to be relatively constant at approximately 770 kWh/month/customer. Non-residential consumption per customer declined 0.54% per year over the past 10 years. From 2024-2033, non-residential consumption per customer is projected to decline at a rate of 0.26% per year. Some of the factors believed to effect consumption per customer include the 2008 Recession; increasing real prices for electricity; improved building envelopes; energy efficiency standards (regulatory); and utility sponsored conservation measures. Each of these factors has contributed to generally decreasing usage per customer historically. In future years, loads associated with electric vehicle charging are anticipated to support usage per customer for all customer classes, most significantly in the residential sector with at-home vehicle charging.

c. Total Sales (GWh) to Ultimate Customers, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

Retail energy sales increased at a rate of 0.66% per year growth over the past 10 years. GRU forecasts retail energy sales to increase at a rate of 0.46% per year over the next 10 years. Both historical and future energy sales growth is positively influenced by increasing number of customers and offset negatively by flat or declining usage per customer. As mentioned above, loads associated with electric

vehicle charging are anticipated to support energy sales and exceed reductions to sales resulting from solar-to-grid energy.

d. Provide a detailed discussion of how the Company's demand-side management program(s) for each customer type (residential, commercial, industrial) impact the observed trends in gigawatt hour sales (Schedule 3.3).

GRU currently offers two conservation programs for residential customers: natural gas rebates for qualifying appliance conversions, and for new construction; and a rebate program for Low Income Energy Efficiency home upgrades. The energy and demand savings associated with these measures is small but is estimated and included in GRU's forecast. GRU currently does not offer any formal conservation programs for non-residential customers.

12. Please explain any historic and forecasted trends in each of the following components of Summer/Winter Peak Demand:

a. Demand Reduction due to the Company's demand-side management program(s) and Self Service, by customer type (residential, commercial, industrial) as well as Total Customers, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

GRU has sponsored energy conservation programs since 1980. The historical impacts from these programs shown in Schedules 3.1, 3.2, and 3.3 are net of impacts since 2007, the most recent demand side management plan formalized by GRU. Factors mentioned in Question 11 describe a variety of contributions to reduced usage per customer over time. These factors in turn reduce the utility's ability to continue lowering usage per customer. Therefore the trend of decreased usage and demand per customer was more rapid in the past than in the forecast period.

b. Demand Reduction due to Demand Response, by customer type (residential, commercial, industrial), and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends.

GRU does not currently operate demand response measures.

c. Total Demand, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

Total demands were higher 10 and 20 years ago than they are today because GRU was a partial requirements wholesaler to three different utilities in years past. Today, all of GRU's load is retail only.

d. Net Firm Demand, by the sources of peak demand appearing in Schedule 3.1 and Schedule 3.2 of the current planning period TYSP, and identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline in the trends.

Seasonal peak demands are forecast to increase about half of one percent per year over the next 10 years. This demand growth is primarily a function of customer growth and is positively supported by load associated with electric vehicle charging.

13. **[FEECA Utilities Only]** Do the Company's energy and demand savings amounts reflected on the DSM and Conservation-related portions of Schedules 3.1, 3.2, and 3.3 reflect the Company's proposed goals in the 2024 FEECA Goalsetting dockets? If not, please explain what assumptions are incorporated within those amounts, and why.

GRU is not a FEECA utility.

14. Please explain any anomalies caused by non-weather events with regard to annual historical data points for the period 10 years prior to the current planning period that have contributed to the following, respectively:

    a. Summer Peak Demand.
    b. Winter Peak Demand.
    c. Annual Retail Energy Sales.

    There was a decrease in energy sales of about 2% in 2020 from 2019 that was likely a function of the Covid-19 pandemic. Impacts to seasonal demands were smaller, to the point of being negligible. Most of the decrease in sales was in the non-residential sector and has not yet rebounded to pre-pandemic levels.

15. Please provide responses to the following questions regarding the weather factors considered in the Company's retail energy sales and peak demand forecasts:

    a. Please identify, with corresponding explanations, all the weather-related input variables that were used in the respective Retail Energy Sales, Winter Peak Demand, and Summer Peak Demand models.

    GRU utilizes heating degrees and cooling degrees in its sales and seasonal demand forecasts. Additionally, minimum temperature (winter) and maximum temperature (summer) are utilized in forecasts of seasonal demands.

    b. Please specify the source(s) of the weather data used in the aforementioned forecasting models.

    GRU utilizes climatological data from the weather station located at the Flight Service Station at the Gainesville Regional Airport. The National Weather Service call ID is GNV, and the WBAN number is 12816.

    c. Please explain in detail the process/procedure/method, if any, the Company utilized to convert the raw weather data into the values of the model input variables.

GRU utilizes the standard base temperature of 65 degrees for degree days. Temperatures are utilized as recorded and reported by NWS.

d. Please specify with corresponding explanations:
   i. How many years' historical weather data was used in developing each retail energy sales and peak demand model.

GRU maintains an historical database of climatological data dating back to 1984. Energy sales equations were developed utilizing historical data beginning in the mid 1990's as described in Section 2 of the TYSP. Seasonal peak demand models were developed utilizing historical series from 1990 through 2023. Average degree days from 2014-2023 (10 years) were utilized for energy sales projections. Mode, median, and average minimum and maximum temperatures from 1990-2023 were utilized in the seasonal peak demand models. Actual temperature values utilized in the demand forecast equations were 23 degrees winter and 97 degrees summer.

   ii. How many years' historical weather data was used in the process of these models' calibration and/or validation.

GRU's response to this question is the same as Question 15.d.i above.

e. Please explain how the projected values of the input weather variables (that were used to forecast the future sales or demand outputs for each planning years 2024 – 2033) were derived/obtained for the respective retail sales and peak demand models.

As described in Question 15.d.i., degree days were projected using the most recent 10-year averages and seasonal demands were projected using the mode/median/average of minimum and maximum temperatures from 1990-2023.

16. **[Investor-Owned Utilities Only]** If not included in the Company's current planning period TYSP, please provide load forecast sensitivities (high band, low band) to account for the uncertainty inherent in the base case forecasts in the following TYSP schedules, as well as the methodology used to prepare each forecast:

GRU is not an Investor-Owned Utility.

a. Schedule 2.1 – History and Forecast of Energy Consumption and Number of Customers by Customer Class.
b. Schedule 2.2 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
c. Schedule 2.3 - History and Forecast of Energy Consumption and Number of Customers by Customer Class.
d. Schedule 3.1 - History and Forecast of Summer Peak Demand.
e. Schedule 3.2 - History and Forecast of Winter Peak Demand.
f. Schedule 3.3 - History and Forecast of Annual Net Energy for Load.

g. Schedule 4 - Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month.

17. Please address the following questions regarding the impact of all customer-owned/leased renewable generation (solar and otherwise) and/or energy storage devices on the Utility's forecasts.

a. Please explain in detail how the Utility's load forecast accounts for the impact of customer's renewables and/or storage.

A forecast of grid connected, behind the meter solar installations was made, based on historical installations through 2023 and future installations anticipated through the 20-year forecast horizon. This forecast included impacts within each billing class. The energy projected to be added back to GRU's grid was included in the load forecast within each customer segment and treated as a load reduction. The forecast does not explicitly address energy storage.

b. Please provide the annual impact, if any, of customer's renewables and/or storage on the Utility's retail demand and energy forecasts, by class and in total, for 2024 through 2033.

GRU estimates that behind the meter solar installations will reduce (incremental) residential energy sales 10,500 MWh by 2033. GRU also estimates that behind the meter solar installations will reduce (incremental) non-residential energy sales approximately 4,700 MWh by 2033. The impact of solar-to-grid energy to GRU's seasonal demands was implicitly accounted for through reduced energy levels and the development of seasonal demands using load factors as described in Section 2.2.6 of the TYSP. This methodology likely overstates solar energy's impact to demand reductions.

c. If the Utility maintains a forecast for the planning horizon (2024-2033) of the number of customers with renewables and/or storage, by customer class, please provide.

GRU estimates that approximately 2,900 residential customers will have grid-connected solar systems by 2033. GRU further estimates that 220 non-residential customers will have grid connected solar systems by 2033. GRU has not developed any forecasts regarding the number of customers that may have on-site energy storage capability.

Plug-in Electric Vehicles (PEVs)

18. Please discuss whether the Company included plug-in electric vehicle (PEV) loads in its demand and energy forecasts for its current planning period TYSP. If so, how were these impacts accounted for in the modeling and forecasting process?

Similar to grid connected solar, GRU prepared a separate forecast of number of electric vehicles that would conduct charging within each billing rate category. Energy required for EV charging was added to GRU's load forecast (within each customer segment) and treated as an addition to energy sales.

a. Has the Company also included the impact of demand response and time of use rates for the PEV loads? If so, please provide the impact of these measures. If not, please explain why not.

GRU does not currently utilize any demand response measures or offer a time of use rate for residential customers, so these measures were not included in the analysis.

19. Please discuss with detail any changes or modifications from the Company's previous TYSP report regarding the following PEV related topics:

a. The major drivers of the Company's PEV growth.

GRU utilizes projections of number of plug-in electric cars and trucks from EIA's Annual Energy Outlook 2023, Table 39, taking the percentage change year-over-year and applying it to estimated 2023 number of vehicles.

b. The methodology and the assumptions (or, if applicable, the source(s) of the data) used to estimate the number of PEVs operating in the Company's service territory and the methodology used to estimate the cumulative impact on system demand and energy consumption.

Continuing the discussion from the response to the previous question, FRCC has an EV task force that collects Florida DMV data by county and kindly shares it with each member utility. GRU begins with the data for vehicles in Alachua County and adjusts the total down to reflect the number of vehicles charging on GRU's system. Next, an estimate is made for how many will charge behind meters of GRU's four billing rate categories. GRU assumes each vehicle will use 300 kWh per month for charging and that 80% of total vehicles will charge behind residential meters.

c. The Company's process for monitoring the installation of PEV public charging stations in its service area.

In general, GRU's Energy Delivery engineering staff will work with vendors when new services for high capacity charging stations is added. Once online, we are able to monitor loads through our billing system, with identification based on customer name.

d. The processes or technologies, if any, that are in place to allow the Company to be notified when a customer has installed a PEV charging station in their home.

If an existing customer adds a charging station behind an existing electric service, it is unlikely GRU will be made aware of the work.

e. Any instances since January 1 of the year prior to the current planning period in which upgrades to the distribution system were made where PEVs were a contributing factor.

There have been no known instances where an upgrade to GRU's distribution system was required resulting from the use of electric vehicles, other than the installation of the transformer to provide the electric service. In all new revenue projects GRU installs additional UG primary to be able to loop feed the transformer.

20. Please refer to the Excel Tables File (Electric Vehicle Charging). Complete the table by providing estimates of the requested information within the Company's service territory for the current planning period. Direct current fast charger (DCFC) PEV charging stations are those that require a service drop greater than 240 volts and/or use three-phase power.

a. Please describe all significant technological, market, regulatory, or other events or announcements since the filing of the Company's 2023 TYSP which have impacted the metrics reported.

GRU is unaware of any significant technological, market, regulatory, or other events/announcements which would have impacted the metrics reported.

b. Please explain if and how the tax incentives and grants for transportation electrification associated with the IRA, adopted in August 2022, has impacted the Company's PEV and PEV charging station adoption/installation, as well as the PEV energy/demand forecast(s). If the provisions of the IRA are not reflected in such forecasts, please explain why.

GRU collaborated with The Energy Authority (TEA) to develop an estimation of the number of existing EV's in GRU's service territory and to develop a forecast of EV growth rates over the next 25 years. TEA used proprietary data in developing these forecasts. Currently, these forecasts have not impacted GRU's planning for PEV charging station adoptions and/or installations.

21. Please describe any Company programs or tariffs currently offered to customers relating to PEVs, and describe whether any new or additional programs or tariffs relating to PEVs will be offered to customers within the current planning period.

GRU has no programs or tariffs currently offered to customers relating to PEVs and does not intend to offer any new or additional programs or tariffs relating to PEVs within the current planning period.

a. Of these programs or tariffs, are any designed for or do they include educating customers on electricity as a transportation fuel?

The intent of a future tariff (if offered) that encourages EV charging during off-peak hours would be to both save customers on their electric bills and reduce late afternoon peak loads on GRU's system. GRU will provide customer education if such a tariff is introduced.

b. Does the Company have any programs where customers can express their interest or expectations for electric vehicle infrastructure as provided for by the Utility, and if so, please describe in detail.

GRU currently does not have any formal programs of this nature.

22. Has the Company conducted or contracted any research to determine demographic and regional factors that influence the adoption of PEVs applicable to its service territory? If so, please describe in detail the methodology and findings.

GRU staff has performed market research to ascertain which customer segments would most likely adopt EV charging infrastructure on their own versus customers who would seek public or rental EV charging infrastructure. GRU's methodology included reaching out to EV manufacturers to find out what policies cities and utilities can adopt to boost adoption and obtain estimates of equipment costs should GRU decide to enter the EV charging business.

GRU researched municipal ordinances to determine how many parking spaces are mandated by development type to determine potential market size as well as determine which ordinances hinder private EV Charging infrastructure development. Additionally, GRU staff surveyed owners of multifamily development owners and fleet operators to ascertain if any of these customers had plans to install EV charging infrastructure and sent an internal employee survey to ascertain current and future interest in EV purchases. GRU also reached out to EV charging manufacturers for quotes to install charging stations at its own corporate offices.

Lastly, GRU is a member of Drive Electric Florida (DEF), a coalition of companies interested in supporting and accelerating the adoption of plug-in vehicles in Florida. DEF fosters collaboration and sharing demographics and developments in the electric vehicle adoption.

23. Please describe if and how Section 339.287, Florida Statutes, (Electric Vehicle Charging Stations; Infrastructure Plan Development) has impacted the Company's projection of PEV growth and related demand and energy growth.

Section 339.287, Florida Statutes has not impacted GRU's projection of PEV growth and related demand and energy growth.

24. What has the Company learned about the impact of PEV ownership on the Company's actual and forecasted peak demand?

GRU believes that most residential home vehicle charging begins late in the afternoon and early evening when GRU is near the time of day of its peak loads. And GRU knows that one vehicle can add 7 kW or more to short term load.

There are three commercial fast charging stations in GRU's service area, and Tesla is constructing a fourth station. Currently, the larger station has 10 booths and its billing demand is approximately 650 kW. Load factor for these installations is 20% or less. From the perspective of billing demand, one charging station is an equivalent load to a large retail establishment or a medium/large school.

25. If applicable, please list and briefly describe all PEV pilot programs the Company is currently implementing and the status of each program.

N/A

26. If applicable, please describe any key findings and metrics of the Company's PEV pilot program(s) which reveal the PEV impact to the demand and energy requirements of the Company.

N/A

Demand Response

27. **[FEECA Utilities Only]** Please refer to the Excel Tables File (DR Participation). Complete the table by providing for each source of demand response annual customer participation information for 10 years prior to the current planning period. Please also provide a summary of all sources of demand response using the table.

GRU is not a FEECA utility.

28. **[FEECA Utilities Only]** Please refer to the Excel Tables File (DR Annual Use). Complete the table by providing for each source of demand response annual usage information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

GRU is not a FEECA utility.

29. **[FEECA Utilities Only]** Please refer to the Excel Tables File (DR Peak Activation). Complete the table by providing for each source of demand response annual seasonal peak activation information for 10 years prior to the current planning period. Please also provide a summary of all demand response using the table.

GRU is not a FEECA utility.

30. Please refer to the Excel Tables File (LOLP). Complete the table by providing the loss of load probability, reserve margin, and expected unserved energy for each year of the planning period.

This data is provided in the attached Microsoft Excel File.

Generation & Transmission

Utility-Owned Generation

31. Please refer to the Excel Tables File (Unit Performance). Complete the table by providing information on each utility-owned generating resources' outage factors, availability factors, and average net operating heat rate (if applicable). For historical averages, use the past three years and for projected factors, use an average of the next ten-year period.

This data is provided in the attached Microsoft Excel File.

32. Please refer to the Excel Tables File (Utility Existing Traditional). Complete the table by providing information on each utility-owned traditional generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

This data is provided in the attached Microsoft Excel File.

33. Please refer to the Excel Tables File (Utility Planned Traditional). Complete the table by providing information on each utility-owned traditional generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

    a. For each planned utility-owned traditional generation resource in the table, provide a narrative response discussing the current status of the project.

This data is provided in the attached Microsoft Excel File.

34. Please refer to the Excel Tables File (Utility Existing Renewable). Complete the table by providing information on each utility-owned renewable generation resource in service as of December 31 of the year prior to the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For capacity factor, use the net capacity as a basis.

This data is provided in the attached Microsoft Excel File.

35. Please refer to the Excel Tables File (Utility Planned Renewable). Complete the table by providing information on each utility-owned renewable generation resource planned for in-service within the current planning period. For multiple small (<250 kW per installation) distributed resources of the same type and fuel source, please include a single combined entry. For projected capacity factor, use the net capacity as a basis.

    a. For each planned utility-owned renewable resource in the table, provide a narrative response discussing the current status of the project.

This data is provided in the attached Microsoft Excel File.

36. Please list and discuss any planned utility-owned renewable resources that have, within the past year, been cancelled, delayed, or reduced in scope. What was the primary reason for the changes? What, if any, were the secondary reasons?

GRU does not have any planned utility-owned renewable resources within the current planning horizon.

37. **[Investor-Owned Utilities Only]** Please refer to the Excel Tables File (As-Available Energy Rate). Complete the table by providing, on a system-wide basis, the historical annual average as-available energy rate in the Company's service territory for the 10-year period prior to the current planning period. Also, provide the projected annual average as-available energy rate in the Company's service territory for the current planning period. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well.

GRU is not an Investor-Owned Utility.

38. Please refer to the Excel Tables File (Planned PPSA Units). Complete the table by providing information on all planned traditional units with an in-service date within the current planning period. For each planned unit, provide the date of the Commission's Determination of Need and Power Plant Siting Act certification, if applicable.

This data is provided in the attached Microsoft Excel File.

39. For each of the planned generating units, both traditional and renewable, contained in the Company's current planning period TYSP, please discuss the "drop dead" date for a decision on whether or not to construct each unit. Provide a timeline for the construction of each unit, including regulatory approval, and final decision point.

GRU does not have any planned utility-owned traditional and/or renewable resources within the current planning horizon. We anticipate completing our Integrated Resource Plan (IRP) by the fall of 2024. The IRP will be our roadmap for any future generation additions.

40. Please refer to the Excel Tables File (Capacity Factors). Complete the table by providing the actual and projected capacity factors for each existing and planned unit on the Company's system for the 11-year period beginning one year prior to the current planning period.

This data is provided in the attached Microsoft Excel File.

41. **[Investor-Owned Utilities Only]** For each existing unit on the Company's system, please provide the planned retirement date. If the Company does not have a planned retirement date for a unit, please provide an estimated lifespan for units of that type and a non-binding estimate of the retirement date for the unit.

GRU is not an Investor-Owned Utility.

42. Please refer to the Excel Tables File (Steam Unit CC Conversion). Complete the table by providing information on all of the Company's steam units that are potential candidates for repowering to operation as Combined Cycle units.

This data is provided in the attached Microsoft Excel File.

43. Please refer to the Excel Tables File (Steam Unit Fuel Switching). Complete the table by providing information on all of the Company's steam units that are potential candidates for fuel-switching.

This data is provided in the attached Microsoft Excel File.

44. Please refer to the Excel Tables File (Transmission Lines). Complete the table by providing a list of all proposed transmission lines for the current planning period that require certification under the Transmission Line Siting Act. Please also include in the table transmission lines that have already been approved, but are not yet in-service.

This data is provided in the attached Microsoft Excel File.

Purchases and Sales

45. Please refer to the Excel Tables File (Firm Purchases). Complete the table by providing information on the Utility's firm capacity and energy purchases.

This data is provided in the attached Microsoft Excel File.

46. Please refer to the Excel Tables File (PPA Existing Traditional). Complete the table by providing information on each purchased power agreement with a traditional generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

This data is provided in the attached Microsoft Excel File.

47. Please refer to the Excel Tables File (PPA Planned Traditional). Complete the table by providing information on each purchased power agreement with a traditional generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

    a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.

This data is provided in the attached Microsoft Excel File.

48. Please refer to the Excel Tables File (PPA Existing Renewable). Complete the table by providing information on each purchased power agreement with a renewable generator still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered to the Company during said year.

This data is provided in the attached Microsoft Excel File.

49. Please refer to the Excel Tables File (PPA Planned Renewable). Complete the table by providing information on each purchased power agreement with a renewable generator pursuant to which energy will begin to be delivered to the Company during the current planning period.

    a. For each purchased power agreement in the table, provide a narrative response discussing the current status of the project.

This data is provided in the attached Microsoft Excel file. The solar farm developer (Origis Energy) is finalizing all necessary permits. The current, anticipated commissioning date for the project is July 2025.

50. Please list and discuss any purchased power agreements with a renewable generator that have, within the past year, been cancelled, delayed, or reduced in scope. What was the primary reason for the change? What, if any, were the secondary reasons?

The 74.9 MW AC solar project currently being developed by Origis Energy has recently incurred a ~6 month schedule delay. The original, anticipated date for commissioning of the project was January 2025, but this date has now slid to July 2025.

The primary reason for this six month delay has been market conditions.

51. Please refer to the Excel Tables File (PSA Existing). Complete the table by providing information on each power sale agreement still in effect by December 31 of the year prior to the current planning period pursuant to which energy was delivered from the Company to a third-party during said year.

This data is provided in the attached Microsoft Excel File.

52. Please refer to the Excel Tables File (PSA Planned). Complete the table by providing information on each power sale agreement pursuant to which energy will begin to be delivered from the Company to a third-party during the current planning period.

    a. For each power sale agreement in the table, provide a narrative response discussing the current status of the agreement.

This data is provided in the attached Microsoft Excel File.

53. Please list and discuss any long-term power sale agreements within the past year that were cancelled, expired, or modified. What was the primary reason for the change? What, if any, were the secondary reasons?

GRU did not have any long-term power sale agreements within the past year that were cancelled, expired, or modified.

Renewable Generation

54. Please refer to the Excel Tables File (Annual Renewable Generation). Complete the table by providing the actual and projected annual energy output of all renewable resources on the Company's system, by source, for the 11-year period beginning one year prior to the current planning period.

This data is provided in the attached Microsoft Excel File.

55. Please describe any actions the Company engages in to encourage production of renewable energy within its service territory.

City of Gainesville Ordinances establishes Net Metering for solar photovoltaic systems. Under this provision, GRU agrees to credit the account of both residential and non-residential customers, who install distributed photovoltaic generation, for the excess energy produced and exported to the city's electric distribution system.

City of Gainesville ordinances establishes Gainesville's solar Feed-In Tariff. Under this program, GRU agrees to purchase 100% of the solar power produced from any private generator at a fixed rate for a contract term of 20 years. The 20-year fixed rate is based on the year the project was approved and the type of installation. GRU is no longer accepting new projects or adding capacity.

56. **[Investor-Owned Utilities Only]** Please discuss whether the Company has been approached by renewable energy generators during the year prior to the current planning period regarding constructing new renewable energy resources. If so, please provide the number and a description of the type of renewable generation represented.

GRU is not an Investor-Owned Utility.

57. Does the Company consider solar PV to contribute to one or both seasonal peaks for reliability purposes? If so, please provide the percentage contribution and explain how the Company developed the value.

GRU considers solar PV to contribute 35.8% of the AC nameplate capacity to our summer peak, and GRU considers solar PV to contribute 0% to our winter peak.

Historically, GRU hits our summer peak between the hours of 17:00 – 19:00. By looking at what a solar PV system contributes (on average) at hour ending 18:00, the summer contribution of 35.8% was determined.

GRU's winter peak occurs in the early morning, before solar PV is online, so that is why we assume (and model) the contribution of solar PV to our winter peak as 0%.

58. Please identify and describe any programs the Company offers that allows its customers to contribute towards the funding of specific renewable projects, such as community solar programs.

GRU does not currently have any programs to allow customers to contribute towards the funding of renewable energy projects.

a. Please describe any such programs in development with an anticipated launch date within the current planning period.

GRU does not currently developing any programs that would allow customers to contribute towards the funding of renewable energy projects.

Energy Storage

59. Briefly discuss any progress in the development and commercialization of non-lithium-ion based battery storage technology the Company has observed in recent years.

GRU has been in communication with several non-lithium battery storage manufacturers. These companies appear to be making progress in the development and commercialization of their respective product offerings (technologies), and public announcements have been made by several domestic utilities that are moving forward with some non-lithium-ion based battery systems.

For the moment, non-lithium-ion based battery storage systems are more costly than lithium-ion systems.

60. If applicable, please describe the strategy of how the Company charges and discharges its energy storage facilities. As part of the response discuss if any recent legislation, including the IRA has changed how the Company dispatches its energy storage facilities.

N/A

61. Briefly discuss any considerations reviewed in determining the optimal positioning of energy storage technology in the Company's system (e.g., Closer to/further from sources of load, generation, or transmission/distribution capabilities).

GRU's substations have been evaluated for available real-estate to house an energy storage system. The majority of GRU's substations do not have adequate space, but there are a few substations that could be a candidate. Locating these storage systems in close proximity to the source of load would reduce line losses. However, any location for an energy storage site would require further analysis after GRU decided when and how much storage to add to the system.

If the energy storage system were larger than ~10 MW AC, the system would likely be located at the Deerhaven Generation Station where there is adequate real-estate available and is adjacent to the Deerhaven substation.

62. Please explain whether customers have expressed interest in energy storage technologies. If so, describe the type of customer (residential, commercial industrial) and how have their interests been addressed.

GRU does not incentivize energy storage installations for any customer class/ billing rate structure.

GRU residential customers are more likely to express any interest in energy storage to third-party entities such as solar PV installer(s) who also might offer a residential energy storage system. These residential customers are considered "early adopters."

Only one of GRU's large customers inquired about energy storage technologies, and their request was specific to thermal energy storage via chilled water.

63. Please refer to the Excel Tables File (Existing Energy Storage). Complete the table by providing information on all energy storage technologies that are currently either part of the Company's system portfolio or are part of a pilot program sponsored by the Company.

This information is provided in the attached Microsoft Excel file.

64. Please refer to the Excel Tables File (Planned Energy Storage). Complete the table by providing information on all energy storage technologies planned for in-service during the current planning period either as part of the Company's system portfolio or as part of a pilot program sponsored by the Company.

This information is provided in the attached Microsoft Excel file.

65. Please identify and describe the objectives and methodologies of all energy storage pilot programs currently running or in development with an anticipated launch date within the current planning period. If the Company is not currently participating in or developing energy storage pilot programs, has it considered doing so? If not, please explain.

    a. Please discuss any pilot program results, addressing all anticipated benefits, risks, and operational limitations when such energy storage technology is applied on a utility scale (> 2 MW) to provide for either firm or non-firm capacity and energy.
    b. Please provide a brief assessment of how these benefits, risks, and operational limitations may change over the current planning period.
    c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.

GRU is not currently participating in or developing energy storage pilot programs. In fact, GRU would likely pursue a Power Purchase Agreement (PPA) type of arrangement for any utility-scale energy storage facility. GRU views PPA's as a mechanism to shift the risks of the project to the developer.

66. If the Company utilizes non-firm generation sources in its system portfolio, please detail whether it currently utilizes or has considered utilizing energy storage technologies to provide firm capacity from such generation sources. If not, please explain.

Currently, GRU does not utilize non-firm generation sources in our system portfolio. However, during GRU's integrated resource planning (IRP) work, 4-hour lithium-ion battery technology was modeled in the form of PPA's of various system sizes. Also, GRU added a constraint to utility-scale solar projects, requiring 1 MW AC of 4-hour lithium-ion battery to every 2 MW AC of nameplate solar PV capacity. Effectively, GRU will not consider/model any stand-alone solar PV project without this ratio of battery storage to serve as a "firming" resource.

a. Based on the Company's operational experience, please discuss to what extent energy storage technologies can be used to provide firm capacity from non-firm generation sources. As part of your response, please discuss any operational challenges faced and potential solutions to these challenges.

Currently, GRU does not have operational experience with any utility-scale, energy storage technologies.

Other

67. Please identify and discuss the Company's role in the research and development of utility power technologies, including, but not limited to research programs that are funded through the Energy Conservation Cost Recovery Clause. As part of this response, please describe any plans to implement the results of research and development into the Company's system portfolio and discuss how any anticipated benefits will affect your customers.

GRU does not engage in R&D activities that are related to power technologies.

Environmental

68. Please explain if the Company assumes carbon dioxide (CO_2) compliance costs in the resource planning process used to generate the resource plan presented in the Company's current planning period TYSP. If the response is affirmative, answer the following questions:

GRU did not assume any compliance costs for CO2 in our integrated resource planning process.

a. Please identify the year during the current planning period in which CO2 compliance costs are first assumed to have a non-zero value.

N/A

b. **[Investor-Owned Utilities Only]** Please explain if the exclusion of CO2 compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.

N/A

c. **[Investor-Owned Utilities Only]** Please provide a revised resource plan assuming no CO2 compliance costs.

N/A

69. Provide a narrative explaining the impact of any existing environmental regulations relating to air emissions and water quality or waste issues on the Company's system during the previous year. As part of your narrative, please discuss the potential for existing environmental regulations to impact unit dispatch, curtailments, or retirements during the current planning period.

Deerhaven Unit #2 has an Air Quality Control System, consisting of a selective catalytic reduction system (currently not in service); low NOx burners to reduce NOx; a dry recirculating flue gas desulfurization unit to reduce acid gases, sulfur dioxide (SO2) and Mercury; and a fabric filter baghouse to reduce particulates. The Deerhaven Renewable (biomass) unit uses a fabric filter baghouse to reduce particulates; an SCR to reduce NOx; and wood fly ash augmented with a dry sorbent injection system (used when necessary) to reduce SO2, acid gases, and mercury. Both the Deerhaven and Deerhaven Renewable Plant Sites operate with zero liquid discharge to surface waters.

Existing environmental regulations are not forecasted to impact unit dispatch, curtailments, or retirements during the current planning period.

70. For the U.S. EPA's Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units Rule:

    a. Will your Company be materially affected by the rule?

    GRU will not be materially affected by this rule.

    b. What compliance strategy does the Company anticipate employing for the rule?

    GRU will not be materially affected by this rule.

    c. If the strategy has not been completed, what is the Company's timeline for completing the compliance strategy?

    GRU will not be materially affected by this rule.

    d. Will there be any regulatory approvals needed for implementing this compliance strategy? How will this affect the timeline?

    GRU will not be materially affected by this rule.

    e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Refer to the Excel Tables File (Emissions Cost). Complete the table by providing information on the costs for the current planning period.

    This information is provided in the attached Microsoft Excel file.

f. If the answer to any of the above questions is not available, please explain why.

71. Explain any expected reliability impacts resulting from each of the EPA rules listed below. As part of your explanation, please discuss the impacts of transmission constraints and changes to units not modified by the rule that may be required to maintain reliability.

a. Mercury and Air Toxics Standards (MATS) Rule.

None expected

b. Cross-State Air Pollution Rule (CSAPR).

N/A

c. Cooling Water Intake Structures (CWIS) Rule.

N/A

d. Coal Combustion Residuals (CCR) Rule.

None expected

e. Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.

Attorneys are just beginning to get into the details of the actions taken on 4/25/2024, so GRU anticipates there will be greater details to come.

f. Affordable Clean Energy Rule or its replacement.

Unknown, no replacement rule (yet)

g. Effluent Limitations Guidelines and Standards (ELGS) from the Steam Electric Power Generating Point Source Category.

N/A

72. Please refer to the Excel Tables File (EPA Operational Effects). Complete the table by identifying, for each unit affected by one or more of EPA's rules, what the impact is for each rule, including; unit retirement, curtailment, installation of additional emissions controls, fuel switching, or other impacts identified by the Company.

This information is provided in the attached Microsoft Excel file.

73. Please refer to the Excel Tables File (EPA Cost Effects). Complete the table by identifying, for each unit impacted by one or more of the EPA's rules, what the estimated cost is for implementing each rule over the course of the planning period.

This information is provided in the attached Microsoft Excel file.

74. Please refer to the Excel Tables File (EPA Unit Availability). Complete the table by identifying, for each unit impacted by one or more of EPA's rules, when and for what duration units would be required to be offline due to retirements, curtailments, installation of additional controls, or additional maintenance related to emission controls. Include important dates relating to each rule.

This information is provided in the attached Microsoft Excel file.

75. If applicable, identify any currently approved costs for environmental compliance investments made by your Company, including but not limited to renewable energy or energy efficiency measures, which would mitigate the need for future investments to comply with recently finalized or proposed EPA regulations. Briefly describe the nature of these investments and identify which rule(s) they are intended to address.

GRU does not have any currently approved costs for environmental compliance investments to comply with recently finalized or proposed EPA regulations.

Fuel Supply & Transportation

76. Please refer to the Excel Tables File (Fuel Usage & Price). Complete the table by providing, on a system-wide basis, the actual annual fuel usage (in GWh) and average fuel price (in nominal $/MMBTU) for each fuel type utilized by the Company in the 10-year period prior to the current planning period. Also, provide the forecasted annual fuel usage (in GWh) and forecasted annual average fuel price (in nominal $/MMBTU) for each fuel type forecasted to be used by the Company in the current planning period.

This data is provided in the attached Microsoft Excel file.

77. Please discuss how the Company compares its fuel price forecasts to recognized, authoritative independent forecasts.

GRU fuel price forecasts are a hybrid of internal contract pricing terms and independent projections available from private and governmental agency sources. GRU constructs short term (1-5 years) pricing models with price/cost factors that are extracted from existing contracts. The historical price performance, escalation factors, and the historical delivered quality are used to project delivered cost for natural gas, coal, biomass and environmental commodities. Existing contracts for natural gas pipeline and rail transportation are also modeled using contract and tariff terms.

The short-term forecast is then converted to long term forecasts by using escalation factors that are available from recognized, independent sources such as PIRA, S&P and the Energy Information Administration. This approach with accounts for the specific contract factors that affect GRU in

the short term coupled with recognition of broad industry escalation factors over the ling-term yield what GRU believes to be a conservative, realistic platform for long term planning.

78. Please identify and discuss expected industry trends and factors for each fuel type listed below that may affect the Company during the current planning period.

a. Coal

GRU has historically supplied most of its requirement using high quality bituminous coal from Central Appalachia. The transport distances and rail rates for moving Eastern coal into Florida have previously made this producing region the most competitive source for GRU. Prior to 2021, decline in the price of natural gas and reduced coal demand due to coal plant closures have pushed Eastern coal prices to historical lows. Those low prices, resulted in producer bankruptcies, mine closures and liquidation of smaller miners. The result of this environment in Central and Northern Appalachia have led to reduces supply, reduction of certain qualities in the market and increased supply risk for utilities. With the recent decline in natural gas prices due to high storage numbers and decrease LNG exports as well as unrest in Europe, coal prices have declined from previous record levels and production remains flat. GRU expect coal supply to remain limited for the foreseeable future as available coal supply moves to the export market and no increase in production due to lack of investment in a dying industry. GRU does not project any significant use of coal for base load generation. A minimal volume will be maintained in inventory as emergency or backup fuel.

GRU expects that in the near and long term, GRU will have to continue to diversity its sourcing with less reliance on Central Appalachia. While GRU will maintain some presence in Central Appalachia, GRU will explore purchases in Norther Appalachia, Illinois Basin and offshore. In additional, the risk will also be mitigated by increased use of natural gas, biomass and purchase power.

b. Natural Gas

The primary factors that will impact the price of natural gas for generation during the 2024-2025 timeframe are (1) shale gas production and supply (2) market perception of the adequacy of supply and level of demand (3) regulatory impact from legislation regarding fracking (4) regulatory impact of environmental legislation on generation from coal plants and (5) the impact of LNG exports on US supply and demand.

c. Nuclear

N/A

d. Fuel Oil

GRU does not project any significant use of heavy or light fuel oils for base load generation. Heavy and light fuel oils are maintained in inventory as emergency or backup fuels.

e. Other (please specify each, if any)

Biomass --- In November 2017, GRU purchased the biomass plant from the company with which it held a 30-year PPA. GRU is currently contracted with the same subcontractor to procure fuel as under the PPA to assure a continuity of service and supply. The subcontractor historically contracts for short and long-term contracts of varying lengths to balance reliability of supply and to take advantage of favorable market prices. Academic studies from the University of Florida's College of Forestry, have determined that there is adequate supply of fuel for consumption operations of the plant.

79. Please provide a comparison of the Utility's 2023 actual fuel price forecast and the actual 2023 delivered fuel prices.

Fuel Type	Forecasted Price from 2022	Actual Price from 2023
Biomass	$3.97/MMBTU	$3.74/MMBTU
Coal	-	$6.60/MMBTU
Natural Gas	$5.26/MMBTU	$4.89/MMBTU

80. Please explain any notable changes in the Utility's forecast of fuel prices used to prepare the Utility's current TYSP compared to the fuel process used to prepare the Utility's prior TYSP.

The process used to forecast fuel prices was very similar to the prior TYSP.

81. Please identify and discuss steps that the Company has taken to ensure natural gas supply availability and transportation over the current planning period.

GRU has long-term existing contracts with Florida Gas Transmission from FTS-1 & FTS-2 and pipeline transport capacity and has recently secured additional capacity on FTS-3 to serve its retrofitted coal unit for dual fuel. Given projected system requirements for natural gas, GRU is confident that adequate firm pipeline capacity services is under contract in volumes sufficient to meet requirements during the 2024-2033 planning period.

82. Please identify and discuss any existing or planned natural gas pipeline expansion project(s), including new pipelines and those occurring or planned to occur outside of Florida that would affect the Company during the current planning period.

GRU has long-term existing contracts with Florida Gas Transmission from FTS-1 & FTS-2 and pipeline transport capacity and has recently secured additional capacity on FTS-3 to serve its retrofitted coal unit for dual fuel. Given projected system requirements for natural gas, GRU is confident that adequate firm pipeline capacity services is under contract in volumes sufficient to meet requirements during the 2024-2033 planning period.

83. Please identify and discuss expected liquefied natural gas (LNG) industry factors and trends that will impact the Company, including the potential impact on the price and availability of natural gas, during the current planning period.

Given the substantial increase in the resource base and production growth for the Lower 48 States as a result of shale gas fracking, GRU does not anticipate that the development and growth of LNG exports will significantly affect availability of natural gas. The primary potential effects that GRU expects to see in the market will be potential increases in the pricing of natural gas at the wellhead and the volatility of that price.

Various energy consulting firms and government agencies have modelled economic scenarios with assumptions on natural gas production, different levels of permitting and construction of LNG facilities in the US, production and retirement of coal capacity, growth of renewable fueled capacity, US economic activity and global demand for LNG to predict the impact on domestic natural gas prices. While there is a range of projected prices, the bulk of such studies agree that there will be modest increased prices for gas users. The remaining question is the magnitude of price increases and the volatility of pricing.

84. Please identify and discuss the Company's plans for the use of firm natural gas storage during the current planning period.

While GRU continually evaluates available storage facilities, pipeline interconnection logistics and storage costs, GRU does not currently project the use of firm natural gas storage during the period. GRU does not exclude the possibility that firm natural gas storage may become economically and logistically feasible for GRU in the future.

85. Please identify and discuss expected coal transportation industry trends and factors, for transportation by both rail and water that will impact the Company during the current planning period. Please include a discussion of actions taken by the Company to promote competition among coal transportation modes, as well as expected changes to terminals and port facilities that could affect coal transportation.

The expiration of the long-term transportation contract resulted in substantial escalation from the contract rates at current market rates. However, the availability of alternative generation to coal, including the retrofit of the coal unit to dual fuel, and purchase power will also be factors that limit the cost impact of rail transportation. GRU does not project any significant use of coal for base generation. A minimal volume will be maintained in inventory as emergency or backup fuel.

86. Please identify and discuss any expected changes in coal handling, blending, unloading, and storage at coal generating units during the current planning period. Please discuss any planned construction projects that may be related to these changes.

Since the addition of the Air Quality Control System for Deerhaven Unit 2 in 2009, GRU has been able to blend coals of different types and still meet all environmental requirements.

87. Please identify and discuss the Company's plans for the storage and disposal of spent nuclear fuel during the current planning period. As part of this discussion, please include the

Company's expectation regarding short-term and long-term storage, dry cask storage, litigation involving spent nuclear fuel, and any relevant legislation.

N/A

88. Please identify and discuss expected uranium production industry trends and factors that will affect the Company during the current planning period.

N/A

89. **[FPL Only]** Please refer to FPL's Response to Staff's First Data Request (No. 90) for the 2023 Ten-Year Site Plan, received on May 1, 2023. Have FPL's plans to only self-consume the hydrogen produced at the Okeechobee Clean Energy Center changed? Please explain.

N/A

Extreme Weather

90. Please identify and discuss steps, if any, that the Company has taken to ensure continued energy generation in case of a severe cold weather event.

GRU has procedures that have checklists for preparation for out plants to ensure GRU has winterized items that are subject to adverse performance in cold weather, this includes items such as heat lamps on instrumentation, blanketing around air compressed systems, running water in stagnant pipes. GRU tests run peaking equipment to identify any issues for starting. GRU has several units with dual fuel capability, so GRU ensures the backup fuel systems are fully operational. Any events that cause a loss of generation or derate is considered an incident and those are fully investigated, and root causes addressed which could include updating the checklist procedures.

91. Please identify any future winterization plans, if any, the Company intends to implement over the current planning period.

GRU does not have any changes to our winterization plans, GRU plans to execute the plans that currently have been working for us.

92. Please explain the Company's planning process for flood mitigation for current and proposed power plant sites and transmission/distribution substations.

Flood mitigation is minimized by the location of GRU's power plants. None of GRU's power plants are located by the coast or active rivers, so GRU does not have any large bodies of water that would flow onto the sites. GRU maintains sumps and plant drain systems on a routine basis to ensure they are clear and working properly to move water. The ponds on site are maintained at operating levels that would provide adequate storage for excessive water events. The ponds are remote to the main site so an overflow of a pond would not flow water towards a generating unit disrupting its operability.

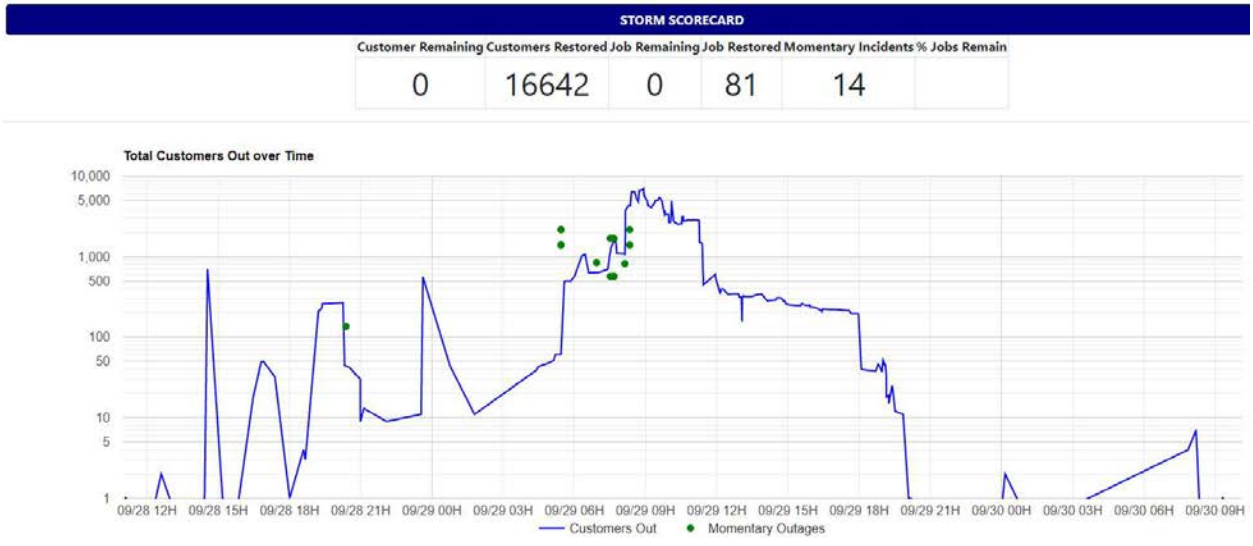
As it pertains to transmission/distribution substations, during reviews of proposed developments around substation sites, GRU ensures that proposed drainage and water/wastewater facilities do not adversely impact GRU's transmission right of ways or GRU's substation properties. If necessary, GRU will request redesign of plans to force water away from GRU-owned facilities.

If any third Party seeks to utilize or cross GRU's Right of Ways in any way, the Party must submit a permit application to GRU's Real Estate Department, which triggers an internal Engineering review process to ensure the proposed use will not adversely impact drainage or cause flooding in GRU's transmission/distribution substation facilities and rights of way.

GRU's substations were sited in areas with well-draining soil, with substation equipment installed on concrete pads. Distribution transformers and switchgear are also installed on concrete pads, helping mitigate the risk of water intrusion. If necessary, GRU has access to vacuum trucks, portable pumps, and backup generators through the utility's wastewater department to assist in flood mitigation.

93. Please address the following questions regarding the impact of all major storm events, such as Hurricane Ian, with associated flooding, destruction of utility facilities and customer buildings, and forced customer permanent migration.
    a. Based on actual data, please briefly summarize the impact that major storms have had on your utility's customer number, retail sales and peak load.

Hurricane Ian resulted in some of GRU's customers experiencing a temporary loss of power. However, GRU did not permanently lose any of our customers. Here is a snapshot of the impact:



    b. Please explain whether the above discussed impact is include in your company's customer/retail energy sales/demand forecasts.

There might have been some impact to the day-ahead planning, but the impact shown in 94a (above) was very minimal. GRU is located of where the Hurricane had the most impact.

c. If your response to subpart (b) is affirmative, please explain how this impact is modeled.

N/A

94. Has the Company had to make any upgrades to any generating units or changes to operations practices as a result of any FERC Orders addressing extreme weather planning within the last two years? If so, please describe.

Yes, GRU revised our plant specific, Standard Operating Procedures (SOPs) to ensure compliance with NERC EOP-11-2 requirements. Operations drafted an Energy Supply policy (ES-NERC-Cold Weather). This document was validated alongside our plant specific checklists, and training was conducted and documented.

95. **[FEECA Utilities Only]** Please refer to the Excel Tables File (Data Centers). As of today, there are 125 or more data centers located in the state of Florida. For the purpose of better understanding this recent load growth, please complete Tables I and II.

GRU is not a FEECA utility.

96. **[FEECA Utilities Only]** With respect to the load forecast included in the Utility's 2024 Ten-Year Site Plan to be filed in April of this year, does the load forecast include projections of annual energy consumption and demand associated with data centers within your service area during the forecasting time horizon (2024-2033)?

GRU is not a FEECA utility.

a. If any such projections have been made, please provide details of the projections including the type of data centers expected to contribute to such energy/demand, and what factors are driving such energy consumption and demand.
b. If no specific projections have been made, what does the Utility believe is the likely pattern of load growth associated with this industry within its service territory?

97. **[FEECA Utilities Only]** Please identify the Utility's issues and/or concerns, if any, that are expected to result from the growth in data centers in the Utility's service territory.

GRU is not a FEECA utility.

a. Please specify how the Utility anticipates responding to such issues or concerns.
b. Please specify how the Utility responded to such issues or concerns in the past.

98. **[Non-FEECA Utilities Only]** For any data centers operating in the Utility's service territory and receiving electric service from the Utility, please describe the current number of the data centers, by type (e.g., colocation, enterprise, cloud, edge, and micro data, etc.) and, for each data center, the customer class served as well as the estimated load served (summer/winter demand and energy).

GRU does not categorize its customers by industry type, so we do not have a firm count of the number of data centers operating in our service territory. However, we believe there are currently three data center type operations within our service area. Two have loads of approximately 600 kW and one has a load of approximately 1300 kW.

99. **[Non-FEECA Utilities Only]** With respect to the load forecast included in the Utility's 2024 Ten-Year Site Plan to be filed in April this year, does the load forecast include projections of annual energy consumption and demand associated with data centers within your service area during the forecasting time horizon (2024-2033)?

The load forecast does not include explicit projections of load associated with data centers.

a. If any such projections have been made, please provide details of the projections including the type of data centers expected to contribute to such energy/demand, and what factors are driving such energy consumption and demand.

No such projections have been made.

b. If no specific projections have been made, what does the Utility believe is the likely pattern of load growth associated with this industry within its service territory?

The GRU service territory is not viewed to be an attractive option for large scale data centers, in large part due to high electric prices and property taxes.

100. **[Non-FEECA Utilities Only]** Please identify the Utility's issues and/or concerns, if any, that are expected to result from the growth in data centers in your utility's service territory. Please also specify how has, and how does, your utility anticipate responding to such issues or concerns.

GRU does not anticipate any significant issues resulting from the growth of data centers in its service territory. Future data centers are likely to be smaller in size and fewer in number compared with growth from this type of business in other regions. GRU does not categorize its customers by industry type but we believe there are currently three data center type operations within our service area. Two have loads of approximately 600 kW and one has a load of approximately 1300 kW. GRU will respond to prospective data center or other large customers on a case by case basis.

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Financial Assumptions
Base Case

AFUDC RATE		4.5	%
CAPITALIZATION RATIOS:			
	DEBT	70	%
	PREFERRED		%
	EQUITY	30	%
RATE OF RETURN			
	DEBT	10	%
	PREFERRED		%
	EQUITY	10	%
INCOME TAX RATE:			
	STATE		%
	FEDERAL		%
	EFFECTIVE		%
OTHER TAX RATE:			%
DISCOUNT RATE:			%
TAX			
DEPRECIATION RATE:			%

Financial Escalation Assumptions

Year	General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
2024	3.50%	3.50%	3.50%	3.50%
2025	3.00%	3.00%	3.00%	3.00%
2026	2.50%	2.50%	2.50%	2.50%
2027	2.50%	2.50%	2.50%	2.50%
2028	2.50%	2.50%	2.50%	2.50%
2029	2.50%	2.50%	2.50%	2.50%
2030	2.50%	2.50%	2.50%	2.50%
2031	2.50%	2.50%	2.50%	2.50%
2032	2.50%	2.50%	2.50%	2.50%
2033	2.50%	2.50%	2.50%	2.50%

TYSP Year 2024
Staff's Data Request # 1
Question No. 4

GRU is not an invester-owned utility.

Date	Hourly System Load (MW)						
	1	2	18	19	20	21	24
1/1/2023							
1/2/2023							
1/3/2023							
1/4/2023							

TYSP Year 2024
Staff's Data Request # 1
Question No. 5

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2023	1	292			16	9	28
	2	264			24	17	87
	3	292			27	17	87
	4	340			16	18	87
	5	331			21	17	91
	6	382			28	18	95
	7	402			21	17	96
	8	409			11	17	98
	9	379			14	18	95
	10	311			5	18	89
	11	255			29	9	35
	12	254			20	8	37
2022	1	355			24	8	27
	2	292			10	8	32
	3	278			30	18	87
	4	297			25	18	86
	5	355			24	18	90
	6	408			16	17	98
	7	390			29	18	95
	8	398			2	18	95
	9	392			6	18	94
	10	293			11	18	88
	11	283			1	18	88
	12	309			25	9	23
2021	1	307			19	9	31
	2	348			4	8	26
	3	307			27	18	90
	4	328			30	17	88
	5	377			27	18	94
	6	390			15	17	93
	7	400			22	18	92
	8	422			18	18	94
	9	363			14	16	91
	10	339			14	18	90
	11	253			30	9	34
	12	248			16	19	81

Notes

(Include Notes Here)

TYSP Year 2024
Staff's Data Request # 1
Question No. 20

Year	Number of PEVs	Number of Public PEV Charging Stations	Number of Public DCFC PEV Charging Stations.	Cumulative Impact of PEVs		
				Summer Demand	Winter Demand	Annual Energy
				(MW)	(MW)	(GWh)
2024	1,812	94	49	7.7	7.7	8.698
2025	2,226	148	49	9.2	9.2	10.685
2026	2,690	179	49	11.0	11.0	12.913
2027	3,211	214	58	13.1	13.1	15.412
2028	3,793	253	69	15.5	15.5	18.205
2029	4,440	296	81	18.1	18.1	21.312
2030	5,159	344	94	21.1	21.1	24.761
2031	5,951	397	108	24.3	24.3	28.566
2032	6,824	455	124	27.9	27.9	32.753
2033	7,781	519	141	31.8	31.8	37.346

Notes

Number of Public, L2 chaging stalls assumed to maintain a ratio of 1 stall every 15 vehicles

Number of Public, DCFC chaging stalls assumed to maintain a ratio of 1 stall every 55 vehicles

Temperature affects on demand are assumed to be negligible in Gainesville, FL

Average of 7.2 kW draw from an L2 chager

Assume 50% of PEV owners charge via L2 at the same time

Assume 0.0183 MW/stall for DCFC station. Based on meter data from 25 existing stalls.

TYSP Year	2024
Staff's Data Request #	1
Question No.	27

[Demand Response Source or All Demand Response Sources]									
Year	**Beginning Year: Number of Customers**	**Available Capacity (MW)**		**New Customers Added**	**Added Capacity (MW)**		**Customers Lost**	**Lost Capacity (MW)**	
		Sum	Win		Sum	Win		Sum	Win
2014									
2015									
2016									
2017									
2018									
2019									
2020									
2021									
2022									
2023									
Notes									
GRU is not a FEECA utility.									

TYSP Year 2024
Staff's Data Request # 1
Question No. 28

[Demand Response Source or All Demand Response Sources]										
Year	Summer					Winter				
	Number of Events	Average Event Size		Maximum Event Size		Number of Events	Average Event Size		Maximum Event Size	
		MW	Number of Customers	MW	Number of Customers		MW	Number of Customers	MW	Number of Customers
2014										
2015										
2016										
2017										
2018										
2019										
2020										
2021										
2022										
2023										
Notes										
GRU is not a FEECA utility.										

TYSP Year	2024
Staff's Data Request #	1
Question No.	29

[Demand Response Source or All Demand Response Sources]							
Year	Average Number of Customers	Summer Peak			Winter Peak		
		Activated During Peak?	Number of Customers Activated	Capacity Activated	Activated During Peak?	Number of Customers Activated	Capacity Activated
		(Y/N)		(MW)	(Y/N)		(MW)
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
Notes							
GRU is not a FEECA utility.							

Loss of Load Probability, Reserve Margin, and Expected Unserved Energy
Base Case Load Forecast

Year	Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)	Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Expected Unserved Energy (MWh)
2024		50.5%			50.5%	
2025		59.6%			59.6%	
2026		59.2%			59.2%	
2027		58.5%			58.5%	
2028		39.3%			39.3%	
2029		38.7%			38.7%	
2030		38.0%			38.0%	
2031		37.3%			37.3%	
2032		28.4%			28.4%	
2033		27.8%			27.8%	

Existing Generating Unit Operating Performance

Plant Name	Unit No.	Planned Outage Factor (POF)		Forced Outage Factor (FOF)		Equivalent Availability Factor (EAF)		Average Net Operating Heat Rate (ANOHR)	
		Historical	Projected	Historical	Projected	Historical	Projected	Historical	Projected
Deerhaven	FS02	8.37		1.18		90.96		12,915	
Deerhaven	FS01	8.24		0.30		90.24		14,121	
Deerhaven	GT01	2.71		2.90		93.28		103,342	
Deerhaven	GT02	0.67		5.79		94.39		-	
Deerhaven	GT03	3.55		0.09		80.08		18,032	
Deerhaven	DHR	11.30		1.56		68.70		13,158	
John R. Kelly	CC1	16.65		1.02		75.16		8,519	

NOTE: Historical - average of past three years

Projected - average of next ten years

TYSP Year 2024
Staff's Data Request # 1
Question No. 32

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
DEERHAVEN	FS01	ALACHUA	ST	NG	8	1972	81	81	76	76	76	76	23%
DEERHAVEN	FS02	ALACHUA	ST	BIT	10	1981	251	251	232	232	232	232	33%
DEERHAVEN	GT01	ALACHUA	GT	NG	7	1976	18	23	17.5	22	17.5	22	0%
DEERHAVEN	GT02	ALACHUA	GT	NG	8	1976	18	23	17.5	22	17.5	22	0%
DEERHAVEN	GT03	ALACHUA	GT	NG	1	1996	71.5	82	71	81	71	81	0%
J. R. KELLY	FS08	ALACHUA	CA	WH	5	2001	41.5	41.5	41	41	39	40	74%
J. R. KELLY	GT04	ALACHUA	CT	NG	5	2001	72.5	85.9	71	84.4	71	84.4	
SOUTH ENERGY CENTER	1	ALACHUA	GT	NG	5	2009	4.5	4.5	3.8	4.1	3.8	4.1	16%
SOUTH ENERGY CENTER	2	ALACHUA	IC	NG	12	2017	7.4	7.4	7.4	7.4	7.4	7.4	60%

Notes

FS08 and GT04 are ran together as a combined-cycle unit, so the capacity factor of 74% is for the combined-cycle unit (J. R. Kelly CC1)

TYSP Year 2024
Staff's Data Request # 1
Question No. 33

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Notes													
GRU has no traditional generation planned to come online within the current planning period.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 34

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
ACPS Solar	N/A	ALACHUA	PV	SUN	varies	varies	0.008	0.008	0.003	0.003	0.003	0.003	14%
DEERHAVEN RENEWABLE	1	ALACHUA	ST	WDS	12	2013	116	116	103	103	103	103	32%
Notes													
GRU has a small, solar PV demonstation unit at a public middle school.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 35

Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Commercial In-Service		Gross Capacity (MW)		Net Capacity (MW)		Firm Capacity (MW)		Projected Capacity Factor
					Mo	Yr	Sum	Win	Sum	Win	Sum	Win	(%)
Notes													
GRU has no utility-owned renewable generation resource(s) planned for in-service within the current planning period.													

TYSP Year	2024
Staff's Data Request #	1
Question No.	37

Year		As-Available Energy ($/MWh)	On-Peak Average ($/MWh)	Off-Peak Average ($/MWh)
Actual	2014	0.0431		
	2015	0.041		
	2016	0.0378		
	2017	0.0324		
	2018	0.0371		
	2019	0.0386		
	2020	0.0379		
	2021	0.0296		
	2022	0.041		
	2023	0.0703		
Projected	2024	0.0516		
	2025	0.04		
	2026	0.0412		
	2027	0.0424		
	2028	0.0437		
	2029	0.045		
	2030	0.0464		
	2031	0.0478		
	2032	0.0492		
	2033	0.0507		

Notes

As Available prices for 2014-2024 represent GRU's price paid for excess net metered energy.

As available prices for 2025-2033 were escalated 3% per year.

TYSP Year 2024
Staff's Data Request # 1
Question No. 38

Generating Unit Name	Summer Capacity (MW)	Certification Dates (if Applicable)		In-Service Date (MM/YY)
		Need Approved (Commission)	PPSA Certified	
Nuclear Unit Additions				
Combustion Turbine Unit Additions				
Combined Cycle Unit Additions				
Steam Turbine Unit Additions				
Notes				
GRU has no planned traditional units for in-service within the current planning period.				

TYSP Year 2024
Staff's Data Request # 1
Question No. 40

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DEERHAVEN	FS01	ST	NG	23%	20%	5%	2%	5%	0%	0%	0%	0%	0%	0%
DEERHAVEN	FS02	ST	BIT	33%	29%	24%	28%	22%	23%	25%	21%	21%	24%	24%
DEERHAVEN	GT01	GT	NG	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DEERHAVEN	GT02	GT	NG	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
DEERHAVEN	GT03	GT	NG	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%
J. R. KELLY	FS08	CA	WH	74%	89%	86%	62%	80%	85%	71%	80%	82%	80%	73%
J. R. KELLY	GT04	CT	NG	74%	89%	86%	62%	80%	85%	71%	80%	82%	80%	73%
SOUTH ENERGY CENTER	1	GT	NG	15%	5%	15%	5%	15%	5%	15%	5%	15%	5%	15%
SOUTH ENERGY CENTER	2	IC	NG	62%	67%	65%	70%	65%	70%	65%	70%	68%	70%	65%
DEERHAVEN RENEWABLE	1	ST	WDS	32%	6%	33%	43%	39%	33%	45%	47%	44%	45%	51%
SOLAR FIT	Varies	PV	SUN	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
ORIGIS SOLAR	TBD	PV	SUN	0%	0%	27%	27%	27%	27%	27%	27%	27%	27%	27%
G2 MARION	N/A	IC	LFG	31%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Notes														
FS08 and GT04 may be run together as a combined-cycle unit referred to as JRK CC1. The combined capacity factor is 74% (2023) for the combined-cycle unit.														

TYSP Year	2024
Staff's Data Request #	1
Question No.	42

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Notes					
GRU has no potential candidates for repowering.					

TYSP Year	2024
Staff's Data Request #	1
Question No.	43

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Notes					
GRU has no potential candidates for fuel-switching.					

TYSP Year	2024
Staff's Data Request #	1
Question No.	44

Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
	0				
Notes					
GRU has no planned transmission line projects within the current planning period.					

Nominal, Firm Purchases

Year	Firm Purchases $/MWh	Escalation %
HISTORY:		
2021		
2022		
2023		
FORECAST:		
2024		
2025		
2026		
2027		
2028		
2029		
2030		
2031		
2032		
2033		

GRU has no contracted purchases in its planning horizon, apart from renewable energy PPAs listed in other tabs.

TYSP Year	2024
Staff's Data Request #	1
Question No.	46

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Notes													
GRU had no traditional PPAs as of December 31st.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 47

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Notes													
GRU does not have any existing or planned power purchase agreements for traditional generation.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 48

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Solar FIT	various installations	N/A	Alachua	PV	SUN	18.6	18.6	6.5	6.5	0	0	03/01/09	12/31/32
Notes													
(Include Notes Here)													

TYSP Year 2024
Staff's Data Request # 1
Question No. 49

Seller Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Origis	Sand Bluff	TBD	Alachua	PV	SUN	97	97	74.9	74.9	0	0	7/1/2025	6/30/2045
Notes													
97 MW is the DC capacity. 74.9 MW is the AC capacity.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 51

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Notes													
GRU has no power sale agreement(s) still in effect as of December 31st.													

TYSP Year 2024
Staff's Data Request # 1
Question No. 52

Buyer Name	Facility Name	Unit No.	County Location	Unit Type	Primary Fuel	Gross Capacity (MW)		Net Capacity (MW)		Contracted Firm Capacity (MW)		Contract Term Dates (MM/YY)	
						Sum	Win	Sum	Win	Sum	Win	Start	End
Notes													
GRU has no power sale agreement(s) planned to be in-effect within the current planning period.													

TYSP Year	2024
Staff's Data Request #	1
Question No.	54

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Utility - Firm	287	55	294	382	347	295	401	420	395	402	462
Utility - Non-Firm	0	0	0	0	0	0	0	0	0	0	0
Utility - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Purchase - Firm	0	0	0	0	0	0	0	0	0	0	0
Purchase - Non-Firm	9	-	84	178	178	179	178	178	178	179	178
Purchase - Co-Firing	0	0	0	0	0	0	0	0	0	0	0
Customer - Owned	16	17	19	20	22	23	25	26	28	29	31
Total	296	55	378	561	525	475	579	598	573	581	640
Notes											
The contract for Landfill Gas (Purchase Non-Firm) expired at the end of 2023, so there are no GW-h reported in 2024.											
Row 15 (Customer - Owned) represents behind-the-meter solar PV and is treated as a reduction to load, so this line is not included in the Total (row 16). BTM solar does not contribute to GRU's NEL											

TYSP Year	2024
Staff's Data Request #	1
Question No.	63

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)
Notes					
GRU does not have any energy storage technologies in our system portfolio.					

TYSP Year 2024
Staff's Data Request # 1
Question No. 64

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Projected Max Capacity Output (MW)	Projected Max Energy Stored (MHh)	Projected Conversion Efficiency (%)
Sand Bluff Solar	N	7/1/2025	12	12	85

Notes

(Include Notes Here)

TYSP Year 2024
Staff's Data Request # 1
Question No. 71

Year	Estimated Cost of Standards of Performance for Greenhouse Gas Emissions Rule for New Sources Impacts (Present-Year $ millions)			
	Capital Costs	O&M Costs	Fuel Costs	Total Costs
2021				
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
Notes				
Attorneys are just beginning to get into the details of the actions taken on 4/25/2024, so GRU anticipates there will be greater details to come.				

TYSP Year	2024
Staff's Data Request #	1
Question No.	72

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Operational Effects						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Notes										
Attorneys are just beginning to get into the details of the actions taken on 4/25/2024, so GRU anticipates there will be greater details to come.										

TYSP Year	2024
Staff's Data Request #	1
Question No.	73

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Cost Effects (CPVRR $ millions)						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Notes										
Attorneys are just beginning to get into the details of the actions taken on 4/25/2024, so GRU anticipates there will be greater details to come.										

TYSP Year	2024
Staff's Data Request #	1
Question No.	74

Unit	Unit Type	Fuel Type	Net Summer Capacity (MW)	Estimated EPA Rule Impacts: Unit Availability (Month/Year - Duration)						
				ELGS	ACE or replacement	MATS	CSAPR/ CAIR	CWIS	CCR	
									Non-Hazardous Waste	Special Waste
Notes										
Attorneys are just beginning to get into the details of the actions taken on 4/25/2024, so GRU anticipates there will be greater details to come.										

TYSP Year 2024
Staff's Data Request # 1
Question No. 76

Year		Uranium		Coal		Biomass		Natural Gas		Residual Oil		Distillate Oil		Hydrogen	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2014	0.00	0.00	797.00	3.41	0.00	0.00	352.00	5.05	1.00	6.32	0.00	8.35	0.00	0.00
	2015	0.00	0.00	663.00	3.30	0.00	0.00	770.00	3.39	1.00	5.57	0.00	7.28	0.00	0.00
	2016	0.00	0.00	412.89	3.20	0.00	0.00	1143.61	3.21	0.00	4.85	0.00	8.97	0.00	0.00
	2017	0.00	0.00	401.40	3.05	0.00	0.00	900.91	3.68	1.00	4.32	1.00	9.86	0.00	0.00
	2018	0.00	0.00	460.06	3.42	569.59	2.92	1002.15	3.67	0.00	6.18	1.00	10.79	0.00	0.00
	2019	0.00	0.00	448.55	3.47	593.69	2.72	854.33	3.00	1.00	6.18	0.00	10.70	0.00	0.00
	2020	0.00	0.00	215.45	3.47	375.07	2.85	1276.29	2.24	0.00	6.18	0.00	0.00	0.00	0.00
	2021	0.00	0.00	319.91	3.70	597.25	2.90	991.86	4.58	6.00	6.18	0.00	10.67	0.00	0.00
	2022	0.00	0.00	32.26	5.48	609.88	3.47	1333.00	8.12	1.60	6.21	0.00	10.81	0.00	0.00
	2023	0.00	0.00	20.28	6.60	287.41	3.74	1552.84	4.89	0.00	0.00	0.02	11.96	0.00	0.00
Projected	2024	0.00	0.00	0.00	0.00	55.29	3.27	1660.58	3.10	0.00	0.00	0.00	0.00	0.00	0.00
	2025	0.00	0.00	0.00	0.00	294.13	3.33	1406.94	4.08	0.00	0.00	0.00	0.00	0.00	0.00
	2026	0.00	0.00	0.00	0.00	382.50	3.38	1251.48	4.40	0.00	0.00	0.00	0.00	0.00	0.00
	2027	0.00	0.00	0.00	0.00	346.58	3.44	1320.95	4.42	0.00	0.00	0.00	0.00	0.00	0.00
	2028	0.00	0.00	0.00	0.00	295.38	3.49	1349.35	4.65	0.00	0.00	0.00	0.00	0.00	0.00
	2029	0.00	0.00	0.00	0.00	400.73	3.55	1256.78	4.78	0.00	0.00	0.00	0.00	0.00	0.00
	2030	0.00	0.00	0.00	0.00	419.56	3.60	1261.45	4.91	0.00	0.00	0.00	0.00	0.00	0.00
	2031	0.00	0.00	0.00	0.00	394.98	3.66	1280.08	5.08	0.00	0.00	0.00	0.00	0.00	0.00
	2032	0.00	0.00	0.00	0.00	402.17	3.71	1323.99	5.26	0.00	0.00	0.00	0.00	0.00	0.00
	2033	0.00	0.00	0.00	0.00	461.62	3.77	1266.33	5.45	0.00	0.00	0.00	0.00	0.00	0.00

Notes

(Include Notes Here)

TYSP Year 2024
Staff's Data Request # 1
Question No. 95

GRU is not at FEECA utility.

Table I: Current Data Center Information

Data Centers Currently Located in Utility Service Area										
Total No. of Data Centers	Customer Class Served	Total Energy Usage in 2023	Impact to Summer Peak Demand	Impact to Winter Peak Demand	Seasonality Observed, if any	For each of the Data Center				
							Type of Data Center*	Energy Used in 2023	Hours of Peak Usage**	Impact to Peak Demand
		(MWHs)	(MWs)	(MWs)				(MWHs)		(MWs)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
						1				
						2				
						3				
						...				

* Examples of the data center types: colocation, enterprise, cloud, edge, and micro data.

** Based on military time 1 - 24.

Table II: Planned Data Center Information

Planned Data Centers in Your Service Area						
	Type of Data Center*	Customer Class Served	Expected In-Service Data	Expected Annual Energy Usage	Expected Impact to Summer Peak Demand	Expected Impact to Winter Peak Demand
				(MWHs)	(MWs)	(MWs)
	(1)	(2)	(3)	(4)	(5)	(6)
1						
2						
3						
...						

* Examples of the data center types: colocation, enterprise, cloud, edge, and micro data.