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FPSC - COMMISSION CLERK

May 17, 2021

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

Re: Docket No. 20210000-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 Donald Phillips and Damian Kistner.

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

Sincerely,

/s/Jamie Verschage, P.E.
Power Planning and Contracts Manager
Gainesville Regional Utilities

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General Items

1. Please provide an electronic copy of the Company's Ten-Year Site Plan (TYSP) for the period 2021-2030 (current planning period) in PDF format.

   The TYSP was provided via email.

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

   Spreadsheet versions of the Ten-Year Site Plan Schedules were provided via email.

3. Please refer to the Microsoft Excel document accompanying this data request titled "Data Request #1 – Excel Tables," (Excel Tables Spreadsheet). Please provide, in Microsoft Excel format, all data requested in the Excel Tables Spreadsheet for those sheets/tabs identified as associated with this question. 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 was provided in the attached Microsoft Excel file.

Environmental Compliance Costs

4. Please explain if the Company assumes 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:

   No, GRU does not assume CO2 compliance costs in its resource planning process.

   a. Please identify the year during the current planning period in which CO_2 compliance costs are first assumed to have a non-zero value.
   b. **[Investor-Owned Utilities Only]** Please explain if the exclusion of CO_2 compliance costs would result in a different resource plan than that presented in the Company's current planning period TYSP.
   c. **[Investor-Owned Utilities Only]** Please provide a revised resource plan assuming no CO_2 compliance costs.

Flood Mitigation

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

   GRU has storm checklists and procedures for each generating plant. These procedures include items such as pumping down containments and ash ponds as much as possible to prepare them to be able to accept additional water; inspecting sumps to ensure pumps are properly working; and assuring sandbags are kept at the ready (at some sites).

   The Deerhaven generating station and the Deerhaven Renewable Generating Station have heavy equipment onsite that can be used to move dirt if a pond is in danger of cresting. Additionally, GRU has identified locations where water could be directed temporarily so that it could be pumped back to ponds for processing. Deerhaven also has a large diesel-driven pump that can be run to move water very quickly. The John R. Kelly generating station is elevated above the adjacent creek and sloped so that storm water will route off plant site.

   GRU's substations are sited in areas with well-draining soil. The substations are built with pervious ground covers such as limestone rocks and with a slope to facilitate water drainage. Transformers and switchgear are placed upon concrete pads to mitigate the risk of flood intrusion. Although GRU has not had an occurrence of flooding becoming an issue at substations, GRU has access to vacuum trucks and portable pumps through GRU's wastewater department. GRU requires a review of projects where transmission and/or substation facilities may be impacted. GRU may require flood mitigation or alternative designs to minimize potential impact in accordance with GRU's Right of Way Guidelines.

Load & Demand Forecasting

6. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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. Please also describe how loads are calculated for those hours just prior to and following Daylight Savings Time.

   GRU is not an investor-owned utility.

7. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 was provided in the attached Microsoft Excel file.

8. 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. The values reported in the table associated with Question 7 represent the daily minimum temperature for peak loads deemed to be related to space heating, and the daily maximum temperature for peak loads deemed to be related to space cooling, respectively.

9. 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, and any difference/improvement made compared with those forecasts used in the Company's most recent prior TYSP.

   GRU's forecast methodology is described in detail on pages 11-20 of our 2021 Ten Year Site Plan. The forecast is developed in-house, using least squares regression techniques against annual data for each customer billing class. This is sometimes referred to as a bottom-up approach. GRU has consistently used this methodology for more than 10 years.

10. 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.

11. 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.
    a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Microsoft 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.

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

GRU compares the accuracy of its previous forecasts of number of customers and retail energy against actual data. Separate tabs were added to the corresponding Excel file for number of customers and retail energy. The data shows 20 years of projections for GRU's forecasts from 2001-2021. In summary, the 20-year forecast accuracy of number of customers was –4.1%, the 10-year forecast accuracy of number of customers was –0.6%, and the 5-year forecast accuracy of number of customers was 0.3%. The 20-year forecast accuracy of retail energy was –12.0%, the 10-year forecast accuracy of retail energy was –1.6%, and the 5-year forecast accuracy of retail energy was –1.5%. A negative forecast error means that the actual results were lower than GRU's forecasts.

12. 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.
    a. If your response is affirmative, please explain the method used in your evaluation, and provide the corresponding results, including work papers, in Microsoft 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.
    b. If your response is negative, please explain why.

GRU compares the accuracy of its previous forecasts of retail summer peak demand against actual data. GRU is a summer peaking system and does not perform a similar comparison for winter peak demand. A separate tab was added to the corresponding Excel file for retail summer peak demand. The data shows 20 years of projections for GRU's forecasts from 2001-2021. In summary, the 20-year forecast accuracy of retail summer peak demand was –12.1, the 10-year forecast accuracy of retail summer peak demand number was –3.3%, and the 5-year forecast accuracy of retail summer peak demand was –2.8%.

13. Please explain any historic and forecasted trends in:
    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 are estimates of Alachua county population, and corresponding population projections published by the Bureau of Economic and Business Research at the University of Florida. From 2011-2020 residential customer growth averaged 0.85% per year. For the period 2021-2030, residential customer growth is projected to average 0.61% per year. From 2011-2020 non-residential customer growth averaged 0.97% per year. For the period 2021-2030, non-residential customer growth is projected to average 0.83%.

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 0.24% per year over the past 10 years. Over the first 10 years of our forecast, residential consumption per customer is projected to decline at a rate of 0.25% per year. Non-residential consumption per customer declined 1.24% per year over the past 10 years. From 2021-2030, non-residential consumption per customer is projected to decline at a rate of 0.30% per year. Some of the factors believed to effect consumption per customer include the 2008 Recession, (increasing) prices for electricity, and improved building envelopes and energy efficiency standards (regulatory) and measures (utility induced). In general, the Covid pandemic resulted in increased residential usage and reduced non-residential usage.

c. **Total Billed Retail Energy Sales** (GWh) **[for FPL]**, or**Net Energy for Load** (GWh) **[for other companies]**, identify the major factors (historically, currently, and in the forecasted period) that contribute to the growth/decline of the trends. Please include a detailed discussion of how the Company's demand management program(s) and conservation/energy-efficiency program(s) impact the growth/decline of the trends.

GRU is responding to this question in the context of retail energy sales because various wholesale loads included in our NEL were not consistent from 2011-2020, nor will these wholesale loads be consistent over the next 10 years. Retail energy sales increased at the modest rate of 0.13% per year growth over the past 10 years. GRU forecasts retail energy sales to increase at a rate of 0.45% per year over the next 10 years. This growth is positively influenced by customer growth and offset negatively by consumption per customer.

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

a. **Demand Reduction due to Conservation 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.

Historically, demand per customer has decreased at a rate of approximately 0.9% per year. Contributing factors are believed to include appliance efficiency improvements and improved building envelopes, and to a lesser extent solar net metering. These trends are expected to continue, however the adoption of electric vehicles will in some form likely become a positive influence on demand per customer.

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 utilize any 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.

As there are no demand response measures in place, please see comments below related to net firm demand.

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.

Within the past decade, GRU experienced one wholesale load mature at the end of 2012, and another at the end of 2018. The only remaining wholesale agreement will mature prior to the 2022 summer peak. Therefore, GRU's net firm summer peak demand is expected to be lower in 2030 than it was in 2011. The current forecast expects modest growth of 0.44% per year in retail summer peak demand from 2021-2030.

15. 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 Company's Summer/Winter Peak Energy Demand.

Recovery from the 2008 recession began in earnest for GRU in 2013. There was a marked drop in retail sales in 2020 associated with the Covid pandemic. The remaining non-weather events were primarily related to the changes in wholesale loads described in Question 14.d.

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:

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 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?

GRU developed standalone forecasts of energy impacts related to electric vehicle charging (and solar photovoltaic net metering) and added these impacts to its electric load forecast.

18. Please discuss 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.

GRU estimated the current number of plug-in battery electric vehicles in its service area based upon DMV vehicle registration estimates for Alachua county. An assumption of 300 kWh per vehicle per month was used as the average charging requirement of each vehicle. The total number of vehicles was apportioned across residential and non-residential customer classes to reflect the locations where vehicles were charged – either at home for residential, or at various non-residential locations. Subjective assumptions were made to account for additional electric vehicles being adopted over the next 20 years, beginning at a rate of roughly 25% per year and tapering to 10% by 2040. The product of number of vehicles and kWh per vehicle charging requirements yielded additional energy requirements for each of GRU's customer billing segments. This process will be refined each year as additional data becomes available.

19. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

20. 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 does not currently have any programs or tariffs specifically marketed to PEVs. During the current planning period a rate structure may be offered to incentivize PEV charging during off-peak periods.

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

GRU does not currently have any programs or tariffs specifically marketed to PEVs.

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.

Currently GRU does not have any program that allows customers an opportunity to express their interest in electrified transportation.

21. Please describe how the Company monitors the installation of PEV public charging stations in its service area.

GRU monitors PEV public charging station with a revenue meter.

22. Please describe 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 project GRU install additional UG primary to be able to loop feed the transformer.

23. 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 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.

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

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

25. **[FEECA Utilities Only]** For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing 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.

26. **[FEECA Utilities Only]** For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing 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.

27. **[FEECA Utilities Only]** For each source of demand response, please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing 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.

Generation & Transmission

28. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 information is provided in the attached Excel file.

29. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

GRU has no traditional generation planned to come online within the current planning period.

30. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 information is provided in the attached Excel file.

31. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

GRU has no utility-owned renewable generation resource planned for in-service within the current planning period.

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

N/A

32. 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?

There were no planned renewable resources that were cancelled or delayed.

33. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

GRU had no traditional PPAs as of December 31st.

34. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

    GRU does not have any existing or planned power purchase agreements for traditional generation.

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

35. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 information is provided in the attached Excel file.

36. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

    This information is provided in the attached Excel file.

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

       The project will be 50 MW (AC) and will connect to GRU's Parker Road substation. The project will also include a 12 MW/24 MWh battery storage system to be used for ramp rate control of the facility's output. GRU will have a 20-year PPA with Origis. The project is currently going through the permit application process with Alachua County.

37. 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?

    There are no renewable energy purchased power agreements that were cancelled, expired, delayed, or modified during the past year.

38. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 information is provided in the attached Excel file.

39. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

There are no power sale agreements that will begin within the planning period.

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

N/A.

40. Please list and discuss any long-term power sale agreements within the past year that were cancelled, expired, or modified.

There have been no long-term power sale agreements within the past year that were cancelled, expired, or modified.

41. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 information is provided in the attached Excel file.

42. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's plant sites that are potential candidates for utility-scale (>2 MW) solar installations.

GRU is not an investor-owned utility.

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

GRU encourages the installation of customer-owned PV systems. Customers have the ability to offset their kWh consumption in GRU's net metering program. GRU

customers accrue their excess kWh monthly and have an annual true up each year; the true up is a cash credit on their utility bill.

44. **[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.

45. 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 does not consider solar PV to contribute to seasonal peaks; instead, GRU views these systems as lowering GRU's electric demand.

46. Please identify whether a declining trend in costs of energy storage technologies has been observed by the Company.

GRU has not tracked the cost of energy storage technologies.

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

GRU has not noted progress in the development of non-lithium battery storage.

48. 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 has not considered the optimal position of energy storage in the company's system.

49. Please explain whether ratepayers have expressed interest in energy storage technologies. If so, how have their interests been addressed?

Customers (ratepayers) have not expressed a specific in energy storage technologies.

50. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

GRU does not have energy storage projects.

51. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

    A proposed Origis Energy 50-MW PV project, for which GRU would be the sole off-taker, is planned with a 12-MW 24-MWh battery system to mitigate the ramping rate of the solar facility's output.

52. 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 does not have pilot programs for energy storage. However, a proposed Origis Energy 50-MW PV project, for which GRU would be the sole off-taker, is planned with a 12-MW 24-MWh battery system to mitigate the ramping rate of the solar facility's output.

53. 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.

    GRU has found the current cost of utility-scale energy storage to outweigh the benefits to the System.

    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.

    GRU has found the current cost of utility-scale energy storage to outweigh the benefits to the System.

54. 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.
    a. Please describe any such programs in development with an anticipated launch date within the current planning period.

    GRU does not have any programs that allow customers to contribute towards a specific renewable project.

55. Please identify and discuss the Company's role in the research and development of utility power technologies. 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 have any research and development of utility power technologies.

56. **[Investor-Owned Utilities Only]** Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

57. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

    GRU does not have any planned conventional generation units.

58. 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 conventional generation units.

59. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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 information is provided in the attached Excel file.

60. **[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.

61. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's steam units that are potential candidates for repowering to operation as Combined Cycle units.

GRU has no potential candidates for repowering.

62. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on all of the Company's steam units that are potential candidates for fuel-switching.

This information is provided in the attached Excel file.

63. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

There are no planned transmission projects.

Environmental

64. 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.

The actions detailed below were initiated several years ago and continue to be in place to assure compliance for future years.

Air: With respect to the MATS rule on Deerhaven Unit 2, GRU installed a PM CEMS to measure and verify compliance with the filterable particulate limit and a Mercury CEMS

to facilitate the operation of the Air Quality Control System (AQCS) for removal of mercury from the flue gas to assure compliance.

Water: The ever more restrictive copper WQS prompted the evaluation of the discharges from the J. R. Kelly Generating Station and resulted in a change in operations and the chemicals used at the facility. Additionally, the NNC rule caused a review of the discharges to Sweetwater Branch and ultimately resulted in the hiring of a consultant to perform data collection, analysis, and modelling to demonstrate compliance for nutrient discharges and a site specific limit.

Waste: The CCR rule has necessitated a review of the ash and scrubber product handling at the Deerhaven Generating Station. This involves geologic and hydrogeologic testing of the ash ponds and ash landfill structural integrity. Additionally, weekly, monthly and annual inspections have been performed as required.

The regulations discussed above are not expected to impact dispatch, curtailments, or retirements.

65. 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?

       No impact at this time.

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

       No impact at this time.

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

       No impact at this time.

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

       No impact at this time.

    e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet by providing information on the costs for the current planning period.

       No, GRU is a municipal utility and is not entitled to cost recovery.

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

66. 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.

No impacts are anticipated.

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

No impacts are anticipated, CSAPR does not apply in Florida.

c. Cooling Water Intake Structures (CWIS) Rule.

No impacts are anticipated.

d. Coal Combustion Residuals (CCR) Rule.

No impacts are anticipated.

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

No impacts are anticipated.

f. Affordable Clean Energy Rule or its replacement.

No impacts are anticipated.

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

No impacts are anticipated.

67. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See Excel spreadsheet.

68. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See Excel spreadsheet.

69. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See Excel spreadsheet.

70. 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.

Not applicable.

Fuel Supply & Transportation

71. Please complete and return, in Microsoft Excel format, the table associated with this question found in the Excel Tables Spreadsheet 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.

See Excel Spreadsheet.

72. 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 modelled 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 and the Energy Information Administration. This approach which accounts for the specific contract factors that affect GRU in the short term coupled with recognition of broad industry escalation factors over the long-term yield what GRU believes to be a conservative, realistic platform for long term planning.

73. 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 requirements 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. Recent declines in the price of natural gas and reduced coal demand due to coal plant closures have pushed eastern coal prices to historical lows. At these low prices, GRU expects to continue to see producer bankruptcies, mine closures and liquidation of smaller miners. The result of this environment in Central and Northern Appalachia may eventually result in reduced supply, reduction of certain qualities in the market and increased supply risk for utilities.

    GRU expects that in the near and long term, GRU will have to diversify its sourcing with less reliance on Central Appalachia. While GRU will maintain some presence in Central Appalachia, increasing supply will be purchased in Northern Appalachia, Illinois Basin and offshore. In addition, the risk will also be mitigated by increased use of gas, biomass and purchased power.

    b. Natural Gas

    The primary factors that will impact the price of natural gas for generation during the 2021-2030 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. In the near term, natural gas prices are expected to be in the range of $2.60 - $3.25/MMBtu.

    c. Nuclear
    Not applicable

d. Fuel Oil

GRU does not project any significant use of heavy or light fuel oils for base load generation. Heavy and light fuels 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, College Of Forestry, have determined that there is adequate supply of fuel for continuous operation of the plant.

74. 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 existing contracts with Florida Gas Transmission for FTS-1 & FTS-2 pipeline transport capacity and is currently pursuing additional capacity to serve it's retrofitted coal unit for dual fuel. Given projected system requirements for natural gas, GRU is confident that adequate firm pipeline capacity service will be under contract in volumes sufficient to meet requirements during the 2021-2030 planning period.

75. 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 existing contracts with Florida Gas Transmission for FTS-1 & FTS-2 pipeline transport capacity and is currently pursuing additional capacity to serve it's retrofitted coal unit for dual fuel. Given projected system requirements for natural gas, GRU is confident that adequate firm pipeline capacity service will be under contract in volumes sufficient to meet requirements during the 2021-2030 planning period.

76. 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 in an effort 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.

77. 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.

78. 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 primary factor that will impact the price of GRU coal transportation during the 2021-2030 time period will be the expiration of GRU's long term rail transport contract with CSX. Prices for Deerhaven coal supplies were stable and competitive under the terms of the contract. The expiration of the contract will result in substantial escalation from the long-term rates to current market rates. However, the availability of alternative generation to coal, including the retrofit of the coal unit to dual fuel, and purchased power will also be factors that limit the cost impact of rail transportation.

79. 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.

80. 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.

Not applicable.

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

Not applicable.

Weatherization

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

Each generating facility has cold-weather task lists that are followed when extreme cold is forecasted to impact Gainesville. These tasks include items such as turning on heat trace and heaters to protect instrumentation, protecting water lines from freezing, and preparing units to move to alternate fuel sources or preemptively moving them to alternate fuel sources.

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

GRU does not have any additional winterization plans it intends to implement.

EXCEL TABLES

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	2	11.01	13.72	0.83	3.11	85.74	79.54	13,454	12,948
Deerhaven	1	5.68	9.07	0.12	0.97	90.82	88.00	13,810	13,810
Deerhaven	GT1	1.19	1.35	0.25	1.70	98.33	94.00	98,761	98,761
Deerhaven	GT2	2.73	1.87	0.75	2.42	96.36	93.77	(42,544)	98,761
Deerhaven	GT3	15.55	6.65	3.47	1.45	80.34	90.25	15,794	15,794
Deerhaven	Renewable	9.99	9.99	1.62	1.62	84.07	84.07	13,191	12,838
John R. Kelly	CC1	4.75	11.17	5.16	3.17	89.02	83.70	8,608	8,444

NOTE: Historical - average of past three years

Projected - average of ten years, excluding DHR, excluding ANOHR

Nominal, Firm Purchases

Year	Firm Purchases $/MWh	Escalation %
HISTORY:		
2018		
2019		
2020		
FORECAST:		
2021	**GRU has no contracted purchases in its planning horizon, apart from renewable energy PPAs listed in other tabs.**	
2022		
2023		
2024		
2025		
2026		
2027		
2028		
2029		
2030		

Financial Assumptions
Base Case

AFUDC RATE		3.8	%
CAPITALIZATION RATIOS:			
	DEBT	43	%
	PREFERRED		%
	EQUITY	57	%
RATE OF RETURN			
	DEBT	3.75	%
	PREFERRED		%
	EQUITY		%
INCOME TAX RATE:			
	STATE		%
	FEDERAL		%
	EFFECTIVE		%
OTHER TAX RATE:			%
DISCOUNT RATE:			%
TAX			
DEPRECIATION RATE:			%

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

Year	Annual Isolated Loss of Load Probability (Days/Yr)	Annual Isolated Reserve Margin (%) (Including Firm Purchases)	Annual Isolated Expected Unserved Energy (MWh)	Annual Assisted Loss of Load Probability (Days/Yr)	Annual Assisted Reserve Margin (%) (Including Firm Purchases)	Annual Assisted Expected Unserved Energy (MWh)
2021		49.4			49.4	
2022		59.5			59.5	
2023		47.2			47.2	
2024		45.6			45.6	
2025		44.8			44.8	
2026		44.1			44.1	
2027		34.8			34.8	
2028		34.5			34.5	
2029		33.8			33.8	
2030		33.2			33.2	

Financial Escalation Assumptions

Year		General Inflation %	Plant Construction Cost %	Fixed O&M Cost %	Variable O&M Cost %
	2021	2.25%	2.25%	2.25%	2.25%
	2022	2.25%	2.25%	2.25%	2.25%
	2023	2.25%	2.25%	2.25%	2.25%
	2024	2.25%	2.25%	2.25%	2.25%
	2025	2.25%	2.25%	2.25%	2.25%
	2026	2.25%	2.25%	2.25%	2.25%
	2027	2.25%	2.25%	2.25%	2.25%
	2028	2.25%	2.25%	2.25%	2.25%
	2029	2.25%	2.25%	2.25%	2.25%
	2030	2.25%	2.25%	2.25%	2.25%

TYSP Year	2021
Staff's Data Request #	1
Question No.	6

Note: GRU is not an investor-owned utility.

TYSP Year 2021
Staff's Data Request # 1
Question No. 7

Year	Month	Actual Peak Demand (MW)	Demand Response Activated (MW)	Estimated Peak Demand (MW)	Day	Hour	System-Average Temperature (Degrees F)
2020	1	338	0	338	22	8	31
	2	284	0	284	28	8	31
	3	329	0	329	29	18	90
	4	329	0	329	9	18	90
	5	384	0	384	22	18	94
	6	415	0	415	24	18	94
	7	422	0	422	14	18	94
	8	425	0	425	26	18	95
	9	407	0	407	4	18	94
	10	353	0	353	8	17	89
	11	288	0	288	10	15	84
	12	312	0	312	26	9	24
2019	1	333	0	333	31	8	32
	2	276	0	276	21	19	89
	3	280	0	280	7	8	33
	4	328	0	328	30	18	91
	5	420	0	420	28	17	101
	6	422	0	422	25	17	95
	7	429	0	429	2	17	96
	8	418	0	418	22	18	91
	9	416	0	416	9	18	95
	10	364	0	364	1	17	92
	11	286	0	286	7	18	86
	12	283	0	283	19	8	34
2018	1	410	0	410	18	8	21
	2	280	0	280	21	20	86
	3	272	0	272	15	8	29
	4	275	0	275	23	19	87
	5	343	0	343	11	18	87
	6	402	0	402	25	18	95
	7	398	0	398	2	18	96
	8	407	0	407	7	18	96
	9	408	0	408	19	18	96
	10	380	0	380	16	17	92
	11	299	0	299	7	19	87
	12	319	0	319	12	8	29

Notes

(Include Notes Here)

TYSP Year 2021
Staff's Data Request # 1
Question No. 11

GRU
Number of
Retail
Customers

CY	actual	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	*2021*
2001	**81011**	80333																				
2002	**82623**	82039	82918																			
2003	**83434**	83723	84500	84947																		
2004	**86264**	85358	87051	88221	86248																	
2005	**87560**	87042	88574	89904	88021	87875																
2006	**88992**	88677	90096	91588	89794	89447	89314															
2007	**90939**	90262	91619	93220	91518	91019	91066	90524														
2008	**92795**	91847	93091	94852	93243	92550	92778	92130	92449													
2009	**93045**	93432	94613	96433	94917	94082	94448	93700	94146	93092												
2010	**92340**	95017	96085	98014	96592	95573	96117	95235	95765	93925	93153											
2011	**92265**	96602	97556	99595	98267	97064	97705	96736	97330	94886	94319	92241										
2012	**92556**	98138	99028	101125	99893	98515	99293	98202	98840	96198	95484	93026	92941									
2013	**93134**	99624	100449	102656	101469	99966	100839	99634	100318	97613	96645	94417	93828	93290								
2014	**93855**	101159	101870	104186	103045	101377	102385	101032	101742	98986	97805	96023	94712	94073	94136							
2015	**94628**	102646	103291	105665	104622	102788	103849	102395	103133	100295	98963	97511	95593	94856	95119	94863						
2016	**95161**	104082	104712	107144	106149	104158	105245	103725	104493	101542	100319	98915	96654	95639	96083	95851	95499					
2017	**97245**	105568	106133	108623	107676	105488	106600	105020	105798	102712	101673	100276	97712	96421	97028	96820	96363	96084				
2018	**97681**	107005	107503	110051	109154	106818	107914	106282	107070	103831	103025	101601	98767	97204	97954	97769	97219	96996	98169			
2019	**98324**	108441	108873	111479	110631	108148	109187	107510	108311	104908	104376	102909	99821	97987	98861	98697	98066	97893	99082	98450		
2020	**99714**	109828	110243	112908	112060	109398	110460	108705	109519	105964	105725	104215	100872	98770	99748	99606	98904	98776	99981	99212	99023	
2021			111614	114285	113488	110688	111652	109866	110673	106994	107049	105536	101899	99554	100617	100494	99735	99647	100868	99966	99707	*100449*
2022				115611	114917	111937	112843	110993	111795	108012	108372	106862	102923	100340	101466	101363	100558	100505	101742	100712	100376	*101168*
2023					116296	113147	114035	112087	112885	109026	109694	108191	103947	101126	102296	102212	101372	101349	102603	101451	101031	*101872*
2024						114356	115145	113148	113942	110060	111014	109519	104968	101913	103107	103040	102178	102180	103451	102183	101670	*102560*
2025							116254	114175	114968	111116	112332	110843	105988	102702	103898	103849	102976	102998	104286	102907	102295	*103232*
2026								115169	115961	112201	113604	112152	106961	103492	104671	104638	103766	103803	105108	103623	102904	*103889*
2027									116923	113225	114874	113449	107932	104284	105424	105407	104548	104595	105918	104332	103499	*104530*
2028										114210	116143	114736	108902	105077	106158	106156	105322	105374	106714	105034	104079	*105155*
2029											117410	116014	109870	105872	106873	106885	106087	106139	107498	105728	104644	*105764*
2030												117278	110838	106668	107569	107594	106844	106891	108269	106415	105194	*106358*
2031													111774	107466	108246	108283	107594	107630	109027	107094	105729	*106936*
2032														108266	108904	108952	108335	108356	109773	107765	106249	*107498*
2033															109542	109601	109068	109069	110505	108429	106754	*108045*
2034																110230	109792	109769	111224	109086	107245	*108576*
2035																	110509	110455	111931	109735	107720	*109091*
2036																		111129	112625	110377	108181	*109591*
2037																			113306	111011	108627	*110075*
2038																				111638	109058	*110543*
2039																					109474	*110996*
2040																						*111432*

2001	0.80%	0.80%																		
2002	0.20%	0.70%	-0.40%																	
2003	-1.10%	-0.30%	-1.30%	-1.80%																
2004	-0.50%	1.10%	-0.90%	-2.20%	0.00%															
2005	-0.80%	0.60%	-1.10%	-2.60%	-0.50%	-0.40%														
2006	-0.90%	0.40%	-1.20%	-2.80%	-0.90%	-0.50%	-0.40%													
2007	-0.40%	0.80%	-0.70%	-2.40%	-0.60%	-0.10%	-0.10%	0.50%												
2008	-0.10%	1.00%	-0.30%	-2.20%	-0.50%	0.30%	0.00%	0.70%	0.40%											
2009	-1.30%	-0.40%	-1.70%	-3.50%	-2.00%	-1.10%	-1.50%	-0.70%	-1.20%	-0.10%										
2010	-3.30%	-2.80%	-3.90%	-5.80%	-4.40%	-3.40%	-3.90%	-3.00%	-3.60%	-1.70%	-0.90%									
2011	-4.40%	-4.50%	-5.40%	-7.40%	-6.10%	-4.90%	-5.60%	-4.60%	-5.20%	-2.80%	-2.20%	0.00%								
2012	-5.10%	-5.70%	-6.50%	-8.50%	-7.30%	-6.00%	-6.80%	-5.80%	-6.40%	-3.80%	-3.10%	-0.50%	-0.40%							
2013	-5.40%	-6.50%	-7.30%	-9.30%	-8.20%	-6.80%	-7.60%	-6.50%	-7.20%	-4.60%	-3.60%	-1.40%	-0.70%	-0.20%						
2014	-5.50%	-7.20%	-7.90%	-9.90%	-8.90%	-7.40%	-8.30%	-7.10%	-7.80%	-5.20%	-4.00%	-2.30%	-0.90%	-0.20%	-0.30%					
2015	-5.60%	-7.80%	-8.40%	-10.40%	-9.60%	-7.90%	-8.90%	-7.60%	-8.20%	-5.60%	-4.40%	-3.00%	-1.00%	-0.20%	-0.50%	-0.20%				
2016	-5.90%	-8.60%	-9.10%	-11.20%	-10.40%	-8.60%	-9.60%	-8.30%	-8.90%	-6.30%	-5.10%	-3.80%	-1.50%	-0.50%	-1.00%	-0.70%	-0.40%			
2017	-4.60%	-7.90%	-8.40%	-10.50%	-9.70%	-7.80%	-8.80%	-7.40%	-8.10%	-5.30%	-4.40%	-3.00%	-0.50%	0.90%	0.20%	0.40%	0.90%	1.20%		
2018	-5.00%	-8.70%	-9.10%	-11.20%	-10.50%	-8.60%	-9.50%	-8.10%	-8.80%	-5.90%	-5.20%	-3.90%	-1.10%	0.50%	-0.30%	-0.10%	0.50%	0.70%	-0.50%	
2019	-5.10%	-9.30%	-9.70%	-11.80%	-11.10%	-9.10%	-9.90%	-8.50%	-9.20%	-6.30%	-5.80%	-4.50%	-1.50%	0.30%	-0.50%	-0.40%	0.30%	0.40%	-0.80%	-0.10%
2020	-4.50%	-9.20%	-9.60%	-11.70%	-11.00%	-8.90%	-9.70%	-8.30%	-9.00%	-5.90%	-5.70%	-4.30%	-1.10%	1.00%	0.00%	0.10%	0.80%	0.90%	-0.30%	0.50%	0.70%

	20-yr	10-yr	5-yr
average	**-4.10%**	**-0.60%**	**0.30%**
standard dev	**3.80%**	**1.30%**	**0.60%**

avg error 1 yr	-0.20%
2 yr	-0.60%
3 yr	-1.00%
4 yr	-1.50%
5 yr	-2.20%
6 yr	-2.90%
7 yr	-3.80%
8 yr	-4.80%
9 yr	-6.00%
10 yr	-7.10%
11 yr	-7.80%
12 yr	-8.40%
13 yr	-9.10%
14 yr	-9.30%
15 yr	-9.80%
16 yr	-9.90%
17 yr	-10.70%
18 yr	-10.70%
19 yr	-9.60%

TYSP Year 2021
Staff's Data Request # 1
Question No. 11

GRU Retail
NEL - MWh

	actual	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	*2021*
2001	**1757704**	1799548																				
2002	**1866114**	1845084	1872100																			
2003	**1869015**	1891089	1923204	1914440																		
2004	**1899561**	1935280	1983605	1990962	1913958																	
2005	**1919219**	1979744	2030264	2038529	1954876	1956231																
2006	**1924770**	2026920	2081838	2089193	1997616	2003604	2002343															
2007	**1935961**	2071000	2134759	2139328	2039445	2051915	2053846	1987015														
2008	**1882734**	2113519	2184059	2186502	2081353	2102191	2105359	2025213	1992619													
2009	**1879240**	2155202	2235033	2234581	2123606	2152086	2152429	2064160	2018164	1847407												
2010	**1921451**	2196870	2284336	2281976	2166790	2201240	2196701	2097334	2045563	1842689	1892728											
2011	**1814347**	2235027	2331744	2331043	2210958	2246370	2241249	2125552	2074347	1856023	1885250	1856289										
2012	**1757126**	2273113	2372203	2374467	2248985	2292007	2280073	2144797	2101106	1874622	1889230	1842577	1845529									
2013	**1740129**	2310469	2416405	2416096	2287167	2339549	2318118	2157589	2123341	1894863	1895212	1851774	1856019	1787064								
2014	**1754798**	2349181	2458853	2461397	2328280	2388493	2360030	2171786	2145951	1915364	1902209	1866868	1859549	1806901	1792611							
2015	**1809591**	2387463	2501994	2507027	2371120	2432443	2403473	2187228	2169460	1936592	1910194	1881418	1863316	1811769	1810946	1711061						
2016	**1833194**	2424067	2545910	2548612	2410521	2476390	2447714	2201155	2191891	1955668	1921888	1894480	1870661	1818106	1830137	1727575	1829129					
2017	**1810837**	2462632	2592090	2592604	2450436	2519076	2492274	2224143	2214800	1974193	1934534	1906285	1877650	1823655	1849046	1744554	1843043	1856826				
2018	**1856721**	2500374	2635377	2635917	2490192	2561111	2536048	2245163	2237288	1993509	1947445	1917167	1884977	1829063	1866351	1773411	1870272	1883838	1868654			
2019	**1866130**	2538424	2681659	2676902	2529576	2602984	2577619	2262708	2257449	2010234	1961168	1928078	1892588	1835037	1882662	1873910	1883586	1897920	1891236	1854873		
2020	**1843227**	2575676	2726003	2721182	2569024	2644567	2618966	2279687	2276733	2023629	1973319	1939364	1900161	1840982	1898190	1889824	1896722	1911177	1903048	1868687	1877001	
2021			2773489	2762362	2609893	2687730	2659592	2294590	2296227	2035044	1982875	1951003	1907195	1847004	1913112	1905094	1909547	1924051	1914569	1882499	1889646	*1860678*
2022				2805412	2651550	2731350	2701374	2324667	2316150	2046315	1992757	1963328	1914609	1854182	1928078	1920151	1922695	1937238	1925822	1893803	1901677	*1870457*
2023					2693042	2775226	2743212	2353423	2335811	2057656	2002571	1975087	1922074	1861769	1942711	1935044	1935935	1950185	1936829	1906229	1909959	*1875996*
2024						2819486	2783406	2383355	2355047	2068921	2011850	1986362	1929659	1869266	1956897	1949498	1948664	1962322	1947611	1918975	1921057	*1885056*
2025							2823956	2413740	2374425	2081122	2020880	1998009	1937357	1877330	1971046	1963872	1961161	1974172	1958191	1931458	1932383	*1893697*
2026								2445093	2393397	2093265	2030059	2009745	1944446	1886134	1985225	1978159	1973373	1985601	1968590	1943745	1943327	*1902075*
2027									2411484	2105398	2039603	2021434	1951621	1895668	1999424	1992581	1985723	1996844	1978827	1956068	1953961	*1910218*
2028										2117390	2047874	2032801	1958904	1905588	2013369	2006753	1997937	2007886	1988926	1968196	1964272	*1918151*
2029											2055866	2044195	1966400	1916059	2027221	2020797	2010344	2018581	1998907	1980210	1974294	*1925756*
2030												2055948	1974162	1927209	2041047	2034810	2022965	2029301	2008789	1992060	1983750	*1933238*
2031													1981465	1938607	2054762	2048652	2035413	2039777	2018594	2003770	1992883	*1940637*
2032														1950980	2069112	2063259	2048839	2050946	2028342	2015604	2001694	*1947969*
2033															2082838	2077414	2061810	2061376	2038049	2026891	2010008	*1955262*
2034																2090986	2074484	2071419	2047735	2037795	2018025	*1962566*
2035																	2087224	2081410	2057420	2048462	2025735	*1970002*
2036																		2091367	2067122	2058830	2033168	*1977518*
2037																			2076860	2068603	2040310	*1985082*
2038																				2078452	2047216	*1992858*
2039																					2053862	*2000706*
2040																						*2008735*

2001	-2.30%	-2.30%																			
2002	0.40%	1.10%	-0.30%																		
2003	-2.10%	-1.20%	-2.80%	-2.40%																	
2004	-2.90%	-1.80%	-4.20%	-4.60%	-0.80%																
2005	-3.60%	-3.10%	-5.50%	-5.90%	-1.80%	-1.90%															
2006	-5.30%	-5.00%	-7.50%	-7.90%	-3.60%	-3.90%	-3.90%														
2007	-6.30%	-6.50%	-9.30%	-9.50%	-5.10%	-5.70%	-5.70%	-2.60%													
2008	-10.20%	-10.90%	-13.80%	-13.90%	-9.50%	-10.40%	-10.60%	-7.00%	-5.50%												
2009	-10.60%	-12.80%	-15.90%	-15.90%	-11.50%	-12.70%	-12.70%	-9.00%	-6.90%	1.70%											
2010	-8.90%	-12.50%	-15.90%	-15.80%	-11.30%	-12.70%	-12.50%	-8.40%	-6.10%	4.30%	1.50%										
2011	-14.10%	-18.80%	-22.20%	-22.20%	-17.90%	-19.20%	-19.00%	-14.60%	-12.50%	-2.20%	-3.80%	-2.30%									
2012	-16.70%	-22.70%	-25.90%	-26.00%	-21.90%	-23.30%	-22.90%	-18.10%	-16.40%	-6.30%	-7.00%	-4.60%	-4.80%								
2013	-17.20%	-24.70%	-28.00%	-28.00%	-23.90%	-25.60%	-24.90%	-19.30%	-18.00%	-8.20%	-8.20%	-6.00%	-6.20%	-2.60%							
2014	-16.40%	-25.30%	-28.60%	-28.70%	-24.60%	-26.50%	-25.60%	-19.20%	-18.20%	-8.40%	-7.70%	-6.00%	-5.60%	-2.90%	-2.10%						
2015	-13.40%	-24.20%	-27.70%	-27.80%	-23.70%	-25.60%	-24.70%	-17.30%	-16.60%	-6.60%	-5.30%	-3.80%	-2.90%	-0.10%	-0.10%	5.80%					
2016	-12.30%	-24.40%	-28.00%	-28.10%	-24.00%	-26.00%	-25.10%	-16.70%	-16.40%	-6.30%	-4.60%	-3.20%	-2.00%	0.80%	0.20%	6.10%	0.20%				
2017	-13.60%	-26.50%	-30.10%	-30.20%	-26.10%	-28.10%	-27.30%	-18.60%	-18.20%	-8.30%	-6.40%	-5.00%	-3.60%	-0.70%	-2.10%	3.80%	-1.70%	-2.50%			
2018	-11.80%	-25.70%	-29.50%	-29.60%	-25.40%	-27.50%	-26.80%	-17.30%	-17.00%	-6.90%	-4.70%	-3.20%	-1.50%	1.50%	-0.50%	4.70%	-0.70%	-1.40%	-0.60%		
2019	-11.80%	-26.50%	-30.40%	-30.30%	-26.20%	-28.30%	-27.60%	-17.50%	-17.30%	-7.20%	-4.80%	-3.20%	-1.40%	1.70%	-0.90%	-0.40%	-0.90%	-1.70%	-1.30%	0.60%	
2020	-13.00%	-28.40%	-32.40%	-32.30%	-28.30%	-30.30%	-29.60%	-19.10%	-19.00%	-8.90%	-6.60%	-5.00%	-3.00%	0.10%	-2.90%	-2.50%	-2.80%	-3.60%	-3.10%	-1.40%	-1.80%

	20-yr	10-yr	5-yr
average	**-12.00%**	**-1.60%**	**-1.50%**
standard dev	**10.50%**	**2.70%**	**1.20%**

avg error 1 yr	-1.30%
2 yr	-2.60%
3 yr	-4.00%
4 yr	-5.40%
5 yr	-7.30%
6 yr	-8.90%
7 yr	-10.70%
8 yr	-12.60%
9 yr	-14.90%
10 yr	-17.50%
11 yr	-19.80%
12 yr	-22.20%
13 yr	-24.60%
14 yr	-26.00%
15 yr	-28.30%
16 yr	-29.10%
17 yr	-29.40%
18 yr	-31.30%
19 yr	-32.40%

TYSP Year 2021
Staff's Data Request # 1
Question No. 12

GRU Retail
Summer
Peak - MW

CY	actual	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	*2021*
2001	**381**	392																				
2002	**401**	402	407																			
2003	**384**	413	419	415																		
2004	**399**	423	433	432	409																	
2005	**428**	435	445	443	418	421																
2006	**425**	445	456	454	427	431	432															
2007	**437**	456	468	465	436	442	443	428														
2008	**414**	465	479	476	445	452	454	433	431													
2009	**419**	475	491	486	453	463	464	442	435	396												
2010	**422**	484	502	497	462	474	474	447	439	393	406											
2011	**399**	493	513	508	472	484	483	453	443	394	406	400										
2012	**372**	502	522	518	480	494	491	454	446	395	407	398	398									
2013	**391**	510	532	527	488	504	500	455	448	396	410	400	400	384								
2014	**383**	519	542	537	497	515	509	455	450	398	412	404	401	389	385							
2015	**384**	528	552	548	507	525	519	455	452	399	414	407	401	390	389	392						
2016	**390**	537	562	557	515	534	528	456	455	401	416	410	403	391	393	395	392					
2017	**380**	546	572	567	524	544	538	459	458	404	419	413	404	393	397	401	395	398				
2018	**371**	554	582	577	533	553	548	462	462	406	422	415	405	394	401	403	401	404	400			
2019	**401**	563	593	586	542	562	557	463	464	408	424	417	407	395	405	406	404	407	404	397		
2020	**397**	572	603	596	550	572	567	464	467	409	427	420	408	396	408	409	406	409	407	400	400	
2021			614	605	560	581	576	464	469	410	429	422	409	397	411	412	409	412	409	403	402	*396*
2022				615	569	591	585	470	472	411	431	425	410	398	415	415	412	415	412	405	405	*398*
2023					579	601	595	475	475	412	433	427	411	400	418	418	415	418	414	408	407	*399*
2024						611	604	482	477	413	435	430	413	401	421	420	418	420	417	411	409	*401*
2025							613	487	480	413	437	432	414	403	424	423	420	423	419	414	412	*403*
2026								494	482	414	438	435	415	404	427	425	423	425	421	416	414	*405*
2027									485	415	440	438	416	406	430	428	426	428	423	419	417	*407*
2028										416	442	440	417	408	433	431	428	430	425	421	419	*408*
2029											444	443	419	410	436	433	431	433	428	424	421	*410*
2030												446	420	412	439	436	434	435	430	427	423	*412*
2031													421	415	442	439	436	437	432	429	425	*413*
2032														417	445	442	439	440	434	432	427	*415*
2033															448	445	442	442	436	434	429	*417*
2034																447	445	444	438	437	430	*418*
2035																	447	446	440	439	432	*420*
2036																		448	442	441	434	*421*
2037																			444	443	435	*423*
2038																				445	437	*425*
2039																					438	*426*
2040																						*428*

2001	-2.90%	-2.90%																			
2002	-1.00%	-0.40%	-1.60%																		
2003	-7.60%	-7.00%	-8.30%	-7.40%																	
2004	-6.00%	-5.80%	-7.90%	-7.70%	-2.60%																
2005	-1.00%	-1.60%	-3.80%	-3.40%	2.30%	1.60%															
2006	-3.60%	-4.60%	-6.90%	-6.40%	-0.50%	-1.40%	-1.60%														
2007	-2.30%	-4.00%	-6.60%	-6.00%	0.30%	-1.00%	-1.30%	2.10%													
2008	-8.90%	-11.10%	-13.70%	-13.00%	-6.90%	-8.60%	-9.00%	-4.50%	-4.10%												
2009	-7.90%	-11.80%	-14.70%	-13.90%	-7.70%	-9.60%	-9.80%	-5.20%	-3.80%	5.70%											
2010	-7.30%	-12.80%	-15.90%	-15.10%	-8.80%	-10.90%	-11.00%	-5.70%	-4.00%	7.40%	3.80%										
2011	-12.30%	-19.10%	-22.20%	-21.50%	-15.50%	-17.50%	-17.40%	-11.90%	-10.00%	1.40%	-1.70%	-0.20%									
2012	-18.10%	-25.90%	-28.80%	-28.20%	-22.50%	-24.70%	-24.30%	-18.10%	-16.70%	-5.80%	-8.70%	-6.60%	-6.50%								
2013	-13.50%	-23.40%	-26.50%	-25.80%	-19.90%	-22.40%	-21.70%	-14.10%	-12.80%	-1.30%	-4.60%	-2.30%	-2.30%	1.80%							
2014	-15.00%	-26.30%	-29.30%	-28.70%	-22.90%	-25.60%	-24.70%	-15.90%	-14.90%	-3.60%	-7.00%	-5.10%	-4.40%	-1.40%	-0.50%						
2015	-14.60%	-27.20%	-30.30%	-29.80%	-24.10%	-26.70%	-25.90%	-15.50%	-14.90%	-3.60%	-7.10%	-5.60%	-4.20%	-1.40%	-1.20%	-1.90%					
2016	-13.40%	-27.40%	-30.60%	-30.00%	-24.30%	-27.00%	-26.20%	-14.50%	-14.30%	-2.90%	-6.30%	-4.90%	-3.20%	-0.40%	-0.90%	-1.20%	-0.50%				
2017	-15.80%	-30.30%	-33.60%	-33.00%	-27.50%	-30.10%	-29.40%	-17.20%	-17.10%	-5.90%	-9.30%	-7.90%	-5.90%	-3.20%	-4.40%	-5.10%	-3.70%	-4.40%			
2018	-17.90%	-33.10%	-36.30%	-35.70%	-30.40%	-32.90%	-32.30%	-19.60%	-19.60%	-8.60%	-12.00%	-10.50%	-8.40%	-5.70%	-7.50%	-8.00%	-7.40%	-8.00%	-7.10%		
2019	-11.50%	-28.90%	-32.40%	-31.60%	-26.00%	-28.70%	-28.10%	-13.50%	-13.70%	-1.80%	-5.60%	-4.00%	-1.50%	1.50%	-1.00%	-1.40%	-0.70%	-1.50%	-0.90%	1.00%	
2020	-12.40%	-30.60%	-34.20%	-33.40%	-27.90%	-30.50%	-29.90%	-14.40%	-15.00%	-3.00%	-7.00%	-5.40%	-2.70%	0.30%	-2.70%	-3.00%	-2.30%	-3.00%	-2.40%	-0.60%	-0.70%

	20-yr	10-yr	5-yr
average	**-12.10%**	**-3.30%**	**-2.80%**
standard dev	**11.00%**	**2.80%**	**2.80%**

avg error 1 yr	-1.20%
2 yr	-2.50%
3 yr	-3.70%
4 yr	-5.00%
5 yr	-6.70%
6 yr	-8.40%
7 yr	-10.40%
8 yr	-12.20%
9 yr	-14.70%
10 yr	-17.30%
11 yr	-19.60%
12 yr	-21.50%
13 yr	-24.90%
14 yr	-27.20%
15 yr	-30.50%
16 yr	-31.50%
17 yr	-31.90%
18 yr	-32.90%
19 yr	-34.20%

TYSP Year	2021
Staff's Data Request #	1
Question No.	19

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)
2021	501	78	14	1.3	1.9	1.800
2022	622	86	17	1.6	2.3	2.240
2023	767	94	20	1.9	2.9	2.760
2024	941	104	24	2.4	3.5	3.390
2025	1,147	114	29	2.9	4.3	4.130
2026	1,388	126	35	3.5	5.2	5.000
2027	1,669	138	42	4.2	6.3	6.010
2028	1,995	152	50	5.0	7.5	7.180
2029	2,368	187	60	5.9	8.9	8.520
2030	2,791	184	72	7.0	10.5	10.050
Notes						
(Include Notes Here)						

10% annual growth in charging station
20% annual growth in DCFC

TYSP Year	2021
Staff's Data Request #	1
Question No.	25

[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
2011									
2012									
2013									
2014									
2015									
2016									
2017									
2018									
2019									
2020									
Notes									
(Include Notes Here): GRU is not a FEECA utility.									

TYSP Year	2021
Staff's Data Request #	1
Question No.	26

[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
2011										
2012										
2013										
2014										
2015										
2016										
2017										
2018										
2019										
2020										
Notes										
(Include Notes Here): GRU is not a FEECA utility.										

TYSP Year	2021
Staff's Data Request #	1
Question No.	27

[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)
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
Notes							
(Include Notes Here): GRU is not a FEECA utility.							

TYSP Year 2021
Staff's Data Request # 1
Question No. 28

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	80	80	75	75	75	75	40
DEERHAVEN	FS02	ALACHUA	ST	BIT	10	1981	251	251	228	228	228	228	19
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	37.5	38	36	37	36	37	80
J. R. KELLY	GT04	ALACHUA	CT	NG	5	2001	72.5	82	72	81	72	81	88
SOUTH ENERGY CENTER	1	ALACHUA	GT	NG	5	2009	4.5	4.5	3.8	4.1	3.8	4.1	7
SOUTH ENERGY CENTER	2	ALACHUA	IC	NG	12	2017	7.4	7.4	7.4	7.4	7.4	7.4	70

Notes

(Include Notes Here)

TYSP Year 2021
Staff's Data Request # 1
Question No. 29

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													
(Include Notes Here) GRU has no traditional generation planned to come online within the current planning period.													

TYSP Year 2021
Staff's Data Request # 1
Question No. 30

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	46%
Notes													
(Include Notes Here)													

TYSP Year 2021
Staff's Data Request # 1
Question No. 31

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													
(Include Notes Here) GRU has no utility-owned renewable generation resource planned for in-service within the current planning period													

TYSP Year	2021
Staff's Data Request #	1
Question No.	33

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													
(Include Notes Here) GRU had no traditional PPAs as of December 31st.													

TYSP Year	2021
Staff's Data Request #	1
Question No.	34

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													
(Include Notes Here) GRU does not have any existing or planned power purchase agreements for traditional generation.													

TYSP Year 2021
Staff's Data Request # 1
Question No. 35

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
G2 Energy	Baseline Landfill	N/A	Marion	IC	LFG	3.8	3.8	3.8	3.8	0	0	01/01/09	12/31/23
Solar FIT	various installations	N/A	Alachua	PV	SUN	18.6	18.6	6.5	6.5	0	0	3/1/2009	12/31/2032
Notes													
(Include Notes Here)													

TYSP Year 2021
Staff's Data Request # 1
Question No. 36

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	50	50	27.5	4.5	0	0	1/1/2023	12/31/2042
Notes													
(Include Notes Here)													

TYSP Year 2021
Staff's Data Request # 1
Question No. 38

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
City of Alachua	N/A	N/A	Alachua	N/A	Varies	N/A	N/A	N/A	N/A	N/A	N/A	4/1/2016	3/31/2022
Notes													
(Include Notes Here) All requirements contract with the City of Alachua, which peaks around 30 MW.													

TYSP Year 2021
Staff's Data Request # 1
Question No. 39

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													
(Include Notes Here) There are no power sale agreements that will begin within the planning period.													

TYSP Year	2021
Staff's Data Request #	1
Question No.	41

Renewable Source	Annual Renewable Generation (GWh)										
	Actual	Projected									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Utility - Firm	375	589	474	331	327	283	300	357	384	419	377
Utility - Non-Firm											
Utility - Co-Firing											
Purchase - Firm											
Purchase - Non-Firm	38	54	54	178	143	143	143	143	143	143	143
Purchase - Co-Firing											
Customer - Owned	3	3	3	4	4	4	5	5	6	6	6
Total	416	646	531	513	474	430	448	505	533	568	526
Notes											
(Include Notes Here): Includes solar PV Feed-In Tariff and customer-owned PV installations, which are not included on TYSP forms.											

TYSP Year	2021
Staff's Data Request #	1
Question No.	42

Plant Name	Land Available (Acres)	Potential Installed Net Capacity (MW)	Potential Obstacles to Installation

GRU is not an investor-owned utility.

TYSP Year 2021
Staff's Data Request # 1
Question No. 50

Project Name	Pilot Program (Y/N)	In-Service/ Pilot Start Date (MM/YY)	Max Capacity Output (MW)	Max Energy Stored (MHh)	Conversion Efficiency (%)

Notes

(Include Notes Here) GRU does not have energy storage projects.

TYSP Year 2021
Staff's Data Request # 1
Question No. 51

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 (%)
Solar Bluff	N	1/1/2023	12	24	85

Notes

(Include Notes Here) GRU does not have energy storage projects.

TYSP Year	2021
Staff's Data Request #	1
Question No.	56

Year		As-Available Energy ($/MWh)	On-Peak Average ($/MWh)	Off-Peak Average ($/MWh)
Actual	2011			
	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018			
	2019			
	2020			
Projected	2021			
	2022			
	2023			
	2024			
	2025			
	2026			
	2027			
	2028			
	2029			
	2030			
Notes				
(Include Notes Here) GRU is not an investor-owned utility.				

TYSP Year	2021
Staff's Data Request #	1
Question No.	57

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				
(Include Notes Here): GRU does not have any planned conventional generation units.				

TYSP Year 2021
Staff's Data Request # 1
Question No. 59

Plant	Unit No.	Unit Type	Fuel Type	Capacity Factor (%)										
				Actual	Projected									
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
DEERHAVEN	FS01	ST	NG	40%	11%	10%	0%	0%	0%	0%	0%	0%	0%	0%
DEERHAVEN	FS02	ST	BIT	19%	18%	16%	14%	17%	30%	21%	26%	25%	21%	32%
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%	0%	0%	0%	0%	0%	0%
J. R. KELLY	FS08	CA	WH	80%	63%	71%	83%	81%	62%	85%	75%	79%	85%	68%
J. R. KELLY	GT04	CT	NG	88%	71%	79%	91%	89%	70%	93%	83%	87%	93%	76%
SOUTH ENERGY CENTER	1	GT	NG	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SOUTH ENERGY CENTER	2	IC	NG	70%	81%	81%	81%	81%	81%	81%	81%	81%	81%	81%
DEERHAVEN RENEWABLE	1	ST	WDS	42%	65%	52%	37%	36%	31%	33%	40%	43%	46%	42%
SOLAR FIT	Varies	PV	SUN	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
ORIGIS SOLAR	TBD	PV	SUN	0%	0%	0%	28%	28%	28%	28%	28%	28%	28%	28%
G2 MARION	N/A	IC	LFG	53%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%

Notes

(Include Notes Here)

TYSP Year	2021
Staff's Data Request #	1
Question No.	61

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

TYSP Year	2021
Staff's Data Request #	1
Question No.	62

Plant Name	Fuel Type	Summer Capacity (MW)	In-Service Date (MM/YYY)	Potential Conversion	Potential Issues
Deerhaven	coal	228	Jun-21	gas	gas supply
Notes					
(Include Notes Here)					

TYSP Year	2021
Staff's Data Request #	1
Question No.	63

Transmission Line	Line Length (Miles)	Nominal Voltage (kV)	Date Need Approved	Date TLSA Certified	In-Service Date
Notes					
(Include Notes Here) There are no planned transmission projects.					

TYSP Year 2021
Staff's Data Request # 1
Question No. 65 e

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	0	0	0	0
2022	0	0	0	0
2023	0	0	0	0
2024	0	0	0	0
2025	0	0	0	0
2026	0	0	0	0
2027	0	0	0	0
2028	0	0	0	0
2029	0	0	0	0
2030	0	0	0	0
Notes				
No costs are anticipated at this time.				

TYSP Year 2021
Staff's Data Request # 1
Question No. 67

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										
No operational impacts are anticipated at this time for any of GRU's generating units.										

TYSP Year 2021
Staff's Data Request # 1
Question No. 68

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
DH2	Steam	Coal	228	N/A	N/A	1.5	N/A	N/A	2	0
Notes										
(Include Notes Here)										

TYSP Year	2021
Staff's Data Request #	1
Question No.	69

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										
No impacts to unit availabilty are anticipated for any of GRU's generating units.										

TYSP Year 2021
Staff's Data Request # 1
Question No. 71

Year		Uranium		Biomass		Coal		Natural Gas		Residual Oil		Distillate Oil	
		GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU	GWh	$/MMBTU
Actual	2011	0	0	0	0	1,085	3.74	414	5.40	3	10.93	1	17.58
	2012	0	0	0	0	696	4.02	849	4.13	0	23.00	0	22.97
	2013	0	0	0	0	626	3.97	696	4.15	0	0	0	21.25
	2014	0	0	0	0	797	3.41	352	5.05	1	6.30	0	8.35
	2015	0	0	0	0	663	3.30	770	3.39	1	5.57	0	7.28
	2016	0	0	0	0	413	3.20	1144	3.21	0	4.85	0	8.97
	2017	0	0	102	2.78	401	3.25	901	3.70	1	4.32	1	9.86
	2018	0	0	570	2.92	460	3.41	1002	3.67	0	6.18	1	10.7
	2019	0	0	594	2.72	449	3.47	854	3.00	0.5	6.18	0	10.7
	2020	0	0	375	2.85	215	3.47	1276	2.38	0	6.18	0	10.7
Projected	2021	0	0	589	2.67	135	3.59	1030	3.43	0	0	0	0
	2022	0	0	474	2.79	0	0	1194	3.55	0	0	0	0
	2023	0	0	331	3.01	0	0	1205	3.34	0	0	0	0
	2024	0	0	327	3.13	0	0	1239	3.43	0	0	0	0
	2025	0	0	283	3.25	0	0	1313	3.48	0	0	0	0
	2026	0	0	300	3.37	0	0	1357	3.61	0	0	0	0
	2027	0	0	357	3.49	0	0	1353	3.84	0	0	0	0
	2028	0	0	384	3.62	0	0	1372	4.00	0	0	0	0
	2029	0	0	419	3.74	0	0	1354	4.14	0	0	0	0
	2030	0	0	377	3.92	0	0	1410	4.29	0	0	0	0

Notes

(Include Notes Here)