

May 13, 2019

Mr. Adam J. Teitzman, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Mr. Teitzman:

Pursuant to Staff's email request dated February 1, 2019, Seminole Electric Cooperative, Inc. hereby submits for electronic filing the response to 2019 Ten-Year Site Plans for Florida's Electric Utilities Supplemental #1.

Please do not hesitate to call me if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph D. Clay", with a long horizontal flourish extending to the right.

Joseph D. Clay
Supervisor of Resource Planning
813-739-1435 (office)
jclay@seminole-electric.com

Enclosure

cc: J. Fuller
L. Johnson

General Items

1. Please provide an electronic copy of the Company’s 2019–2028 Ten-Year Site Plan (2019 TYSP) in PDF format and the accompanying Schedules 1–10 in Microsoft Excel format.

Submitted electronically with 2019 TYSP

2. Please provide all data requested in the attached forms labeled “Appendix A.” If any of the requested data is already included in the Company’s 2019 TYSP, state so on the appropriate form.

See attached files

Load & Demand Forecasting

3. **[Investor-Owned Utilities Only]** Please provide, on a system-wide basis, the hourly system load for the period January 1, 2018, through December 31, 2018, in Microsoft Excel format.

Not Applicable

4. Please provide the monthly peak demand experienced in the period 2016–2018, 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.

Historic Peak Demand Timing & Temperature

| Year | Month | Actual Peak Demand | Demand Response Activated | Estimated Peak Demand | Day | Hour | System-Average Temperature |
|------|-------|--------------------|---------------------------|-----------------------|------------|------|----------------------------|
| | | (MW) | (MW) | (MW) | | | (Degrees F) |
| 2018 | 1 | 3,939 | 85 | 4,024 | 1/18/2018 | 8 | 26 |
| | 2 | 2,247 | 59 | 2,306 | 2/1/2018 | 8 | 45 |
| | 3 | 2,474 | 62 | 2,536 | 3/15/2018 | 8 | 36 |
| | 4 | 2,281 | 18 | 2,299 | 4/29/2018 | 18 | 82 |
| | 5 | 2,782 | 15 | 2,797 | 5/11/2018 | 17 | 90 |
| | 6 | 3,122 | 74 | 3,196 | 6/24/2018 | 16 | 90 |
| | 7 | 2,983 | 72 | 3,055 | 7/10/2018 | 18 | 89 |
| | 8 | 3,078 | 74 | 3,152 | 8/8/2018 | 16 | 91 |
| | 9 | 3,107 | 73 | 3,180 | 9/14/2018 | 17 | 92 |
| | 10 | 2,931 | 15 | 2,946 | 10/16/2018 | 17 | 90 |
| | 11 | 2,492 | 14 | 2,506 | 11/28/2018 | 8 | 37 |
| | 12 | 2,915 | 71 | 2,986 | 12/12/2018 | 8 | 37 |
| 2017 | 1 | 3,018 | 51 | 3,069 | 1/8/2017 | 9 | 35 |
| | 2 | 2,194 | 37 | 2,231 | 2/17/2017 | 8 | 41 |
| | 3 | 2,696 | 45 | 2,741 | 3/16/2017 | 9 | 34 |
| | 4 | 2,954 | 0 | 2,954 | 4/28/2017 | 17 | 92 |
| | 5 | 3,098 | 0 | 3,098 | 5/29/2017 | 18 | 92 |

| | | | | | | | | |
|--------------|-------------|----------|-------|-------|------------|-----------|----|----|
| | 6 | 3,010 | 52 | 3,062 | 6/24/2017 | 17 | 91 | |
| | 7 | 3,114 | 54 | 3,168 | 7/5/2017 | 17 | 91 | |
| | 8 | 3,085 | 53 | 3,138 | 8/23/2017 | 17 | 89 | |
| | 9 | 2,948 | 51 | 2,999 | 9/28/2017 | 17 | 91 | |
| | 10 | 2,874 | 0 | 2,874 | 10/10/2017 | 17 | 89 | |
| | 11 | 1,992 | 0 | 1,992 | 11/7/2017 | 16 | 83 | |
| | 12 | 2,992 | 51 | 3,043 | 12/11/2017 | 8 | 36 | |
| | 2016 | 1 | 3,307 | 86 | 3,393 | 1/25/2016 | 8 | 34 |
| | | 2 | 3,107 | 82 | 3,189 | 2/11/2016 | 8 | 36 |
| | | 3 | 2,211 | 57 | 2,268 | 3/31/2016 | 18 | 83 |
| | | 4 | 2,701 | 69 | 2,770 | 4/29/2016 | 17 | 88 |
| | | 5 | 2,803 | 73 | 2,876 | 5/31/2016 | 16 | 89 |
| 6 | | 3,137 | 81 | 3,218 | 6/25/2016 | 17 | 92 | |
| 7 | | 3,243 | 84 | 3,327 | 7/28/2016 | 17 | 93 | |
| 8 | | 3,164 | 82 | 3,246 | 8/22/2016 | 17 | 93 | |
| 9 | | 2,997 | 78 | 3,075 | 9/11/2016 | 17 | 89 | |
| 10 | | 2,690 | 70 | 2,760 | 10/2/2016 | 16 | 88 | |
| 11 | | 2,238 | 58 | 2,296 | 11/22/2016 | 8 | 43 | |
| 12 | | 2,410 | 63 | 2,473 | 12/31/2016 | 9 | 46 | |
| Notes | | | | | | | | |
| | | | | | | | | |

5. 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.

The stations used to calculate Seminole's system-wide temperature are:

- K40J
- KBKV
- KBOW
- KCTY
- KGNV
- KJAX
- KLEE
- KOCF
- KPGD
- KRSW
- KSFB
- KSGJ
- KSRQ
- KTLH
- KVDF
- KVLD
- KVQQ
- KVVG

Please note that the Seminole's system-wide temperature is used for reporting only and is not utilized in the load forecasting process, since each Member Cooperative is forecasted separately.

Seminole purchases hourly weather data from AccuWeather for 25 stations in and around the Member service territory. Each Member has a unique combination of weather stations selected to create their weather statistics. The optimal set of weather stations are derived by ranking the predictive power of each station's temperature reading to estimate electricity load and then re-estimating load based on combinatory sets of stations ranked from lowest to highest mean average percentage error (MAPE). The set that achieves the lowest MAPE is chosen as the optimal combination. The analysis is conducted using generalized linear models and combinations are derived by the simple average of hourly station data. Please see 2019 Ten Year Site Plan, pages 31 through 32, section 3.3.2. for additional information.

6. Please explain how the Company's load and demand forecasting used in its 2019 TYSP was developed. In your response please include the following information: methodology, assumptions, data sources, third-party consultant(s) involved, and any difference/improvement made compared with the load and demand forecasting used in the Company's 2018 Ten-Year Site Plan.

See 2019 Ten Year Site Plan page 24, section 3.1 for general forecasting methodology, and pages 24 through 26, sections 3.1.1, 3.1.2 and 3.1.3 for consumer, energy and demand forecast methodology, respectively.

See 2019 Ten Year Site Plan pages 31 through 32, section 3.3 for forecast assumptions.

See 2019 Ten Year Site Plan pages 28 through 30, section 3.2 for forecast data sources.

7. Please identify all closed and opened FPSC dockets and all non-docketed FPSC matters which were/are based on the same load forecast used in the Company's 2019 TYSP.

Not Applicable

8. **[Investor-Owned Utilities Only]** Does your Company review the accuracy of its customer, load, and demand forecasts presented in its TYSP by comparing the actual data for a given year to the data forecasted one, two, three, four, five, or six years prior?

Not Applicable

- a. If the response is affirmative, please explain the method used in such review.
- b. If the response is affirmative, please provide the results of such review for each forecast presented in the TYSPs filed, or to be filed, to the Commission from 2001 to 2019 with supporting workpapers in Microsoft Excel format.
- c. If the response is negative, please explain why not.

9. Please explain any recent and forecasted trends in customer growth, by customer type (residential, commercial, industrial) and as a whole.

See 2019 Ten Year Site Plan page 31, section 3.3.1 for economic assumptions.

10. Please explain any recent and forecasted trends in electricity use per customer, by customer type (residential, commercial, industrial) and as a whole.

See 2019 Ten Year Site Plan page 31, section 3.3.1 for usage trends.

11. Please explain any recent and forecasted trends in peak demand by the sources of peak demand appearing in Schedule 3.1 of the 2019 TYSP.

Population is expected to be the primary driver for demand growth.

12. **[Investor-Owned Utilities Only]** If not included in the Company's 2019 TYSP to be filed by April 1, 2019, 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:

Not Applicable

- 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.
13. Please discuss whether the Company included plug-in electric vehicle (PEV) loads in its demand and energy forecasts for the 2019 TYSP. If so, how were these impacts accounted for in the modeling and forecasting process?

Electric vehicle loads are not modeled in the demand and energy forecasts for the 2019 Ten-Year Site Plan.

14. 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.

Not Applicable

15. Please include the following information within the Utility’s service territory: an estimate of the number of PEVs, an estimate of the number of public PEV charging stations, an estimate of the number of public “quick-charge” PEV charging stations (i.e., charging stations requiring a service drop greater than 240 volts and/or using three-phase power), and the estimated demand and energy impacts of the PEVs by year. As part of this response, please provide an electronic version of the table below in Microsoft Excel format.

Electric Vehicle Charging Impacts

| Year | Number of PEVs | Number of Public PEV Charging Stations | Number of Public “Quick-charge” PEV Charging Stations | Cumulative Impact of PEVs | | |
|-----------------------|----------------|--|---|---------------------------|---------------|---------------|
| | | | | Summer Demand | Winter Demand | Annual Energy |
| | | | | (MW) | (MW) | (GWh) |
| 2018 | | | | | | |
| 2019 | | | | | | |
| 2020 | | | | | | |
| 2021 | | | | | | |
| 2022 | | | | | | |
| 2023 | | | | | | |
| 2024 | | | | | | |
| 2025 | | | | | | |
| 2026 | | | | | | |
| 2027 | | | | | | |
| 2028 | | | | | | |
| Not Applicable | | | | | | |
| Notes | | | | | | |
| | | | | | | |

16. 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 2019–2028 period.

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

While Seminole does not offer any programs or tariffs relating to EVs at this time, we are exploring ways in which these could be incorporated into our services in the future and ways in which we can assist our Members with educating their consumer-members with respect to the feasibility of electricity as a light- and heavy-duty transportation fuel.

- 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.

While Seminole does not offer any such program at this time, we are working with our Members to determine how they can capture and respond to such sentiments/expectations by their consumer-members.

In addition, Seminole, along with all of Florida's electric cooperatives, has been involved in monitoring the status of Florida DEP's participation in the Volkswagen Settlement. In 2018, Florida's electric cooperatives (of which Seminole was one participant) submitted comments to DEP's Division of Air Resource Management expressing support for:

- DEP applying fifteen percent (15%) of Florida's allocation of trust funds to the "Light Duty Zero Emission Vehicle Supply Equipment Eligible Mitigation Action" category;
- DEP adopting a fair approach to allocating trust funds to mitigation actions to rural communities in Florida.

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

Not Applicable

18. Please describe any instances since January 1, 2018, in which upgrades to the distribution system were made where PEVs were a contributing factor.

Not Applicable

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

Not Applicable

20. What processes or technologies, if any, are in place that allow the Utility to be notified when a customer has established an electrical vehicle charging station in the home?

Not Applicable

21. **[FEECA Utilities Only]** For each source of demand response, use the table below to provide the customer participation information listed on an annual basis. Please also provide a summary of all sources of demand response using the chart below. As part of this response, please provide an electronic version of the table below in Microsoft Excel format.

| [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 |
| 2009 | Not Applicable | | | | | | | | |
| 2010 | | | | | | | | | |
| 2011 | | | | | | | | | |
| 2012 | | | | | | | | | |
| 2013 | | | | | | | | | |
| 2014 | | | | | | | | | |
| 2015 | | | | | | | | | |
| 2016 | | | | | | | | | |
| 2017 | | | | | | | | | |
| 2018 | | | | | | | | | |
| Notes | | | | | | | | | |
| | | | | | | | | | |

22. **[FEECA Utilities Only]** For each source of demand response, use the table below to provide the usage information listed on an annual basis. Please also provide a summary of all demand response using the chart below. As part of this response, please provide an electronic version of the table below in Microsoft Excel format.

| [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 |
| 2009 | Not Applicable | | | | | | | | | |
| 2010 | | | | | | | | | | |
| 2011 | | | | | | | | | | |
| 2012 | | | | | | | | | | |
| 2013 | | | | | | | | | | |
| 2014 | | | | | | | | | | |
| 2015 | | | | | | | | | | |
| 2016 | | | | | | | | | | |
| 2017 | | | | | | | | | | |
| 2018 | | | | | | | | | | |
| Notes | | | | | | | | | | |
| | | | | | | | | | | |

23. **[FEECA Utilities Only]** For each source of demand response, use the table below to provide the seasonal peak activation information listed on an annual basis. Please also provide a summary of all demand response using the chart below. As part of this response, please provide an electronic version of the table below in Microsoft Excel format.

| [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) |
| 2009 | Not Applicable | | | | | | |
| 2010 | | | | | | | |
| 2011 | | | | | | | |
| 2012 | | | | | | | |
| 2013 | | | | | | | |
| 2014 | | | | | | | |
| 2015 | | | | | | | |
| 2016 | | | | | | | |
| 2017 | | | | | | | |
| 2018 | | | | | | | |
| Notes | | | | | | | |
| | | | | | | | |

Generation & Transmission

24. Please identify and describe each existing utility-owned renewable resource as of December 31, 2018, that delivered energy during the year. Please include the facility’s name, unit type, fuel type, its installed capacity (AC-rating for photovoltaic (PV) systems), its net firm capacity or contribution during peak demand (if any), capacity factor for 2018 based off of the installed capacity, and its in-service date. For multiple small distributed renewable resources (<250 kW per installation), such as rooftop solar panels, please include a single combined entry for the resources that share the same unit & fuel type. As part of this response, please provide an electronic version of the table below in Microsoft Excel format.

Existing Utility-Owned Renewable Resources

| Facility Name | Unit Type | Fuel Type | Installed Capacity (MW) | | Net Firm Capacity (MW) | | Capacity Factor | In-Service Date |
|--|-----------|-----------|-------------------------|-----|------------------------|-----|-----------------|-----------------|
| | | | Sum | Win | Sum | Win | (%) | (MM/YYYY) |
| Not Applicable | | | | | | | | |
| Notes | | | | | | | | |
| All of the existing renewable resources in Seminole’s portfolio are under purchased power contracts or leases. | | | | | | | | |

25. Please identify and describe each planned utility-owned renewable resource for the period 2019–2028. Please include each proposed facility’s name, unit type, fuel type, its installed capacity (AC-rating for PV systems), its net firm capacity or anticipated contribution during peak demand (if any), anticipated typical capacity factor, and projected in-service date. For multiple small distributed renewable resources (<250 kW per installation), such as rooftop solar panels, please include a single combined entry for the resources that share the same unit & fuel type. As part of this response, please provide an electronic version of the table below in Microsoft Excel format.

Planned Utility-Owned Renewable Resources

| Facility Name | Unit Type | Fuel Type | Installed Capacity (MW) | | Net Firm Capacity (MW) | | Capacity Factor | In-Service Date |
|---|-----------|-----------|-------------------------|-----|------------------------|-----|-----------------|-----------------|
| | | | Sum | Win | Sum | Win | (%) | (MM/YYYY) |
| Not Applicable | | | | | | | | |
| Notes | | | | | | | | |
| All of the planned renewable resources in Seminole’s portfolio are under purchased power contracts or leases. | | | | | | | | |

26. Please refer to the list of planned utility-owned renewable resources for the period 2019–2028 above. Discuss the current status of each project.

Not Applicable

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

Not Applicable

28. Please identify and describe each purchased power agreement with a renewable generator that delivered energy during 2018. Provide the name of the seller, the name of the generation facility associated with the contract, the unit type of the facility, the fuel type, the facility’s installed capacity (AC-rating for PV systems), the amount of contracted firm capacity (if any), and the start and end dates of the purchased power agreement.

Existing Renewable Purchased Power Agreements

| Seller Name | Facility Name | Unit Type | Fuel Type | Installed Capacity (MW) | | Contracted Firm Capacity (MW) | | In-Service Date (MM/YY) | Contract Term (MM/YY) | |
|--|---------------------|-----------|-----------|-------------------------|-----|-------------------------------|-----|-------------------------|-----------------------|-------|
| | | | | Sum | Win | Sum | Win | | Start | End |
| Telogia Power, LLC | Telogia Facility | ST | WDS | 13 | 13 | 13 | 13 | 1986 | 07/09 | 05/20 |
| Timberline Energy, LLC | Timberline Landfill | ST | LFG | 1.6 | 1.6 | 1.6 | 1.6 | 2008 | 02/08 | 03/20 |
| Hillsborough County, Florida | Hillsborough WTE | ST | MSW | 38 | 38 | 38 | 38 | 1987 | 03/10 | 02/25 |
| City of Tampa, Florida | McKay Bay WTE | ST | MSW | 20 | 20 | 20 | 20 | 1985 | 08/11 | 07/26 |
| Farm Credit Leasing Services Corporation | MGS Solar Facility | PV | SUN | 2.2 | 2.2 | 2.2 | 2.2 | 2017 | 08/17 | 08/27 |
| Notes | | | | | | | | | | |
| 1) In addition to the table above, Seminole’s existing Renewable Purchased Power Agreements are summarized in Section 1.3 of Seminole’s Ten Year Site Plan. | | | | | | | | | | |
| 2) MGS Solar Facility capacity references nameplate rating. Seminole assumes 32% capacity towards summer reserve margin and 0% capacity towards winter reserve margin. Subject to 0.5% yearly degradation. | | | | | | | | | | |

29. Please identify and describe each purchased power agreement with a renewable generator that is anticipated to begin delivering renewable energy to the Company during the period 2019–2028. Provide the name of the seller, the name of the generation facility associated with the contract, the unit type of the facility, the fuel type, the facility’s installed capacity (AC-rating for PV systems), the amount of contracted firm capacity (if any), and the start and end dates of the purchased power agreement.

| | | | | | | | | | | | |
|-----------------------------|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Non-Firm | | | | | | | | | | | |
| Purchase - Co-Firing | - | - | - | - | - | - | - | - | - | - | |
| Customer - Owned | - | - | - | - | - | - | - | - | - | - | |
| Total | 610 | 537 | 469 | 424 | 531 | 532 | 533 | 291 | 196 | 111 | 111 |
| Notes | Solar energy allocated as non-firm purchase. | | | | | | | | | | |

33. Please complete the table below, providing a list of all of the Company’s plant sites that are potential candidates for utility-scale (>2 MW) solar installations. As part of this response, please provide the plant site’s name, approximate land area available for solar installations, potential installed capacity rating of a PV installation, and a description of any major obstacles that could affect utility-scale solar installations at any of these sites, such as land devoted to other uses or other requirements.

Candidate Sites - Solar

| Plant Name | Land Available (Acres) | Installed Capacity (MW) | Potential Issues |
|-------------------|-------------------------------|--------------------------------|--|
| Gilchrist | 400+ | 50-75 | County zoning, transmission interconnections, State and County permitting, and any potential permitting opposition at the site, which is currently an undeveloped greenfield site. |
| SGS | 160 | 20 | The proposed project area lies within Seminole’s existing and proposed landfill areas. The existing and proposed landfills must be closed prior to use and solar arrays must be designed appropriately to prevent damage to the landfill liner covers. |

34. Please complete the table below, providing a list of all of the Company’s plant sites that are potential candidates for utility-scale wind installations. As part of this response, please provide the plant site’s name, approximate land area available, potential installed capacity rating of a wind farm installation, and a description of any major obstacles that could affect utility-scale wind installations at any of these sites, such as land devoted to other uses or other requirements.

Candidate Sites - Wind

| Plant Name | Land Available (Acres) | Installed Capacity (MW) | Potential Issues |
|-------------------|-------------------------------|--------------------------------|-------------------------|
| None | | | |

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

As reported in Seminole’s Standards for the Promotion, Encouragement, and Expansion of the Use of Renewable Energy, Resources and Energy Conservation and Efficiency Measures, filed with the Florida Public Service Commission on 22 March 2019, Seminole maintains a commitment to use renewable energy resources to assist in planning and implementing a diverse power supply portfolio, while ensuring that the addition of new renewable resources does not adversely affect Seminole’s wholesale electric rates.

Seminole engages in the following strategies to achieve continuing expansion of its renewable energy resource portfolio:

- Member Educational Materials – Seminole provides Members with materials that can be distributed to end-use member-consumers including educational brochures, and a video on Cooperative Solar.
- Open Door Negotiation Policy – Seminole promotes an open door policy for arm's-length negotiations with all renewable providers.
- Competitive Bid – Seminole will continue to utilize competitive bidding as one of the tools for acquiring competitively-priced conventional and renewable resources. All of Seminole's future bid solicitations for non-peaking power supply resources will include the solicitation of renewable energy proposals.
- Price Point – Seminole will continue to use projected avoided costs as the price point for evaluating proposals for renewable energy.
- Ease of Contracting – Seminole will continue to offer a standard offer agreement as an option for renewable resource developers to sell their energy output to Seminole, which also includes performance guarantee terms.
- Seminole will seek state and federal grants, subsidies, and other financial incentives, to the extent such resources are available to reduce the cost of renewable energy resources.
- Seminole will keep abreast of the development and costs of new renewable energy resources and renewable energy technologies that can be utilized by Seminole and its Members.
- Consumer and Member-Owned Renewable Resources – Seminole's wholesale power contracts with its nine Members provide for net metering service for the Members' consumer-owned renewable generating resources. In addition, Seminole's Members have the ability under the wholesale power contract to own or lease renewable generation with certain limitations.

36. **[Investor-Owned Utilities Only]** Please discuss whether the Company has been approached by renewable energy generators during 2018 regarding constructing new renewable energy resources. If so, please provide the number and a description of the type of renewable generation represented.

Not Applicable

37. 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.

For summer, two different methods are employed for reserve margin contributions.

Seminole counts 32% of the MGS solar facility's anticipated output towards reserves. This is derived by taking the median value of all forecasted hour-ending 16 values for the month of August (the historical summer peak hour during the expected peak month) compared to the max peak output from the facility.

The entire capacity for the Leroy Solar Facility is expected to contribute to reserves as the output of the facility is constrained by the inverter, not the solar panels. Accordingly, all hour-ending 16 values for the peak month are 100% of the facility output.

For winter, solar output does not contribute to reserves as the peak hour is expected to occur at a time when there is little to no sunlight.

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

Generally, Seminole has seen a sizable decline in the cost of energy storage over the last 2-3 years. However, the cost has not yet reduced to a level sufficient to view this option as cost effective.

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

Seminole has monitored different non-lithium solid-state battery chemistries, including sodium sulfur and nickel cadmium, as well as different flow battery technologies, such as vanadium redox and zinc bromine batteries. There has been a sizable decline in the cost of energy storage over the last years, particularly for lithium-ion based batteries due in part to the proliferation of electric vehicles. However, the cost has not dropped to a level sufficient to view battery systems as cost effective. Both solid state and flow battery technologies are projected to see significant cost declines in the coming years. These cost declines coupled with policy incentives will drive increased demand for battery storage, leading to continued growth in the battery market in coming years. We also foresee that the higher penetration of intermittent solar photovoltaics generation will drive the need to store electricity generated during times it is not immediately needed.

40. 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.)

Seminole understands the importance of energy storage systems when applied to different areas of the electrical network. Such applications may defer or reduce the need to build new transmission and distribution assets, new generation assets, or purchase generation capacity in the wholesale market. Application of storage systems in the transmission and distribution network can result in deferral of transformer upgrades or line reconductoring projects. The optimal locational placement for energy storage systems in our grid will vary vastly depending on numerous factors. Those factors include different applications of the energy storage, operational demands, transmission and distribution infrastructure capabilities and limitations, cost/benefits of various value streams, and others.

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

Seminole provides wholesale electric service to our nine not-for-profit distribution cooperative owners and does not serve end-use retail consumers.

42. Please complete the table below, identifying 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. As part of this response, please identify the project to which the energy storage technology is associated with, whether this project is a pilot program or not, the in-service date or pilot start date associated with the energy storage technology, and the maximum capacity output and maximum energy stored of/by the energy storage technology under normal operating conditions.

Seminole currently has no energy storage technology as part of its system portfolio, but keeps abreast of industry trends for potential evaluation.

| Project Name | Pilot Program (Y/N) | In-Service/ Pilot Start Date | Max Capacity Output (MW) | Max Energy Stored (MWh) |
|----------------|---------------------|---------------------------------|--------------------------|-------------------------|
| Not Applicable | | | | |
| Notes | | | | |
| | | | | |

43. 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 next 10 years. If the Company is not currently participating in or developing energy storage pilot programs, has it considered doing so? If not, please explain.

Seminole is currently implementing a smart thermostat demand response pilot program with our members. While this conservation program does not include physical storage assets and equipment, it allows us to pre-heat and pre-cool homes at times of low energy demand so that the homes would not be running their heating and cooling units during times of high demand.

- 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.

The smart thermostat pilot program includes our nine Members and began in the summer of 2018. We captured and are currently analyzing data from both the summer and the winter seasons (2018-2019). The purpose of the pilot program is to demonstrate whether tangible cost effective benefits to our system can be achieved from controlling thermostats to manage electricity demand. Many studies refer to smart thermostats on average homes contributing about 1 KW of demand response per thermostat. Our pilot includes approximately 1,000 smart thermostats, so it will not approach >2 MW. If the pilot is determined to be cost effective, and we begin to control more than 2,000 smart thermostats, we will include the forecasted demand reductions in our load forecast to take this in to account.

One risk associated with a larger-scale program is shifting the peak to a later hour. This can occur due to a rebound effect at the end of an event period when a large number of thermostats are no longer being controlled and household energy usage is no longer being reduced. During the pilot program, different control types have been implemented in order to determine ways to avoid shifting the peak in the event of a large-scale program.

Additionally, analyzing the pilot program results provides an estimate of average kW reduction per thermostat, but this estimate will need to be adjusted as consumers' behaviors and households change. As saturation of more energy efficiency household appliances increase, household usage will change. Customers' energy usage is also affected by price signals and if in the future retail consumer participants are under a time of use rate structure, their energy usage at the peak may be lower than what is seen in the pilot. For a longer-term large-scale smart thermostat program, periodically re-analyzing the effects of the program will help ensure the estimate of the average kW reduction per thermostat stays accurate.

There have also recently been concerns that internet companies like Google, Facebook, and Amazon are improperly using data they collect from devices like

smart thermostats. This is a consumer privacy risk, though it is inherent to all of these new internet connected devices, and not specific to smart thermostats.

- b. Please provide a brief assessment of how these benefits, risks, and operational limitations may change over the next 10 years.

Seminole will continue to monitor the technological development of storage equipment. Part of this ongoing monitoring process will include reviews of the economic cost of utilizing such equipment and whether such equipment is economically prudent and justifiable for Seminole and our Members to acquire and/or utilize. While we will continue to be sensitive to matters related to economic feasibility, we will likewise evaluate the operational risks/opportunities of utilizing storage equipment within our system.

- c. Please identify and describe any plans to periodically update the Commission on the status of your energy storage pilot programs.

Seminole will continue to provide updates as part of the annual FPSC TYSP supplemental data collection process.

44. 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. If not, please explain.

Not Applicable

45. Please identify and describe any programs you offer that allow your customers to contribute towards the funding of specific renewable projects, such as community solar programs.

Seminole Electric launched our Cooperative Solar program in 2017 with a 2.2 MW solar facility located in Hardee County, adjacent to the Midulla Generating Station. Each of Seminole's nine Members have the opportunity to offer programs to allow their member-consumers to voluntarily pay extra on their bills to receive solar energy subscriptions from Seminole's existing and future solar resource(s). Output from the 2.2 MW facility to date has been lower than expected, and as a result, most of our members are currently including the output in their portfolio of system resources from Seminole rather than selling allotments directly to their member-owners. In addition, Seminole has agreed to purchase 40 MW of photovoltaic solar energy from the Leroy Solar Center, with commercial operation scheduled for January 2022.

- a. Please describe any such programs in development with an anticipated launch date within the next 10 years.

Seminole is currently examining adding additional solar resources to our portfolio. We will continue to work with our members to provide options for community solar programs as they find desirable.

46. 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.

Seminole's research and development efforts include the identification, evaluation, feasibility analysis (technical, economic, environmental, regulatory), and initial recommendation of utility power technologies. We also investigate and evaluate services and practices for potential application within different sectors of the company including our member distribution cooperatives. These efforts support Seminole's strategic planning efforts and facilitate knowledge transfer on emerging technologies from external stakeholders to functional areas inside of Seminole, including within our member distribution cooperatives.

Seminole actively participates in research activities led by the Electric Power Research Institute (EPRI), associated with various committees within the National Rural Electric Cooperative Association (NRECA), and through participation in Interest Groups at the Centre for Energy Advancement through Technological Innovation (CEATI International).

Seminole periodically updates its research and development plans in order to guide and monitor its research areas of focus. Currently those areas include but are not limited to distributed generation (renewable energy, energy storage, as well as other fast and flexible technologies), beneficial electrification (e.g., electric vehicle (EV) charging, electric forklifts, agriculture equipment), efficiency, energy conservation and demand response strategies. The potential benefits for our customers may include enhanced system reliability and resilience, lowered fuel costs through increased diversification of suppliers, enhanced power quality, improved productivity and/or energy and capacity savings, increased environmental sustainability, and reduced environmental impacts, among others. In addition, Seminole is currently implementing, in coordination with its Members, a smart thermostat demand response pilot program to evaluate the cost effectiveness of a potential larger scale smart thermostat program.

47. **[Investor-Owned Utilities Only]** Provide, on a system-wide basis, the historical annual average as-available energy rate in the Company’s service territory for the period 2009–2018. If the Company uses multiple areas for as-available energy rates, please provide a system-average rate as well. Also, provide the projected annual average as-available energy rate in the Company’s service territory for the period 2019–2028.

As-Available Energy Rates

| Year | | As-Available Energy (\$/MWh) | On-Peak Average (\$/MWh) | Off-Peak Average (\$/MWh) | | | |
|-----------|------|------------------------------|--------------------------|---------------------------|----------------|--|--|
| Actual | 2009 | Not Applicable | | | | | |
| | 2010 | | | | | | |
| | 2011 | | | | | | |
| | 2012 | | | | | | |
| | 2013 | | | | | | |
| | 2014 | | | | | | |
| | 2015 | | | | | | |
| | 2016 | | | | | | |
| | 2017 | | | | | | |
| | 2018 | | | | | | |
| Projected | 2019 | | | | Not Applicable | | |
| | 2020 | | | | | | |
| | 2021 | | | | | | |
| | 2022 | | | | | | |
| | 2023 | | | | | | |
| | 2024 | | | | | | |
| | 2025 | | | | | | |
| | 2026 | | | | | | |
| | 2027 | | | | | | |
| | 2028 | | | | | | |
| Notes | | | | | | | |

48. Please complete the following table detailing planned unit additions, including information on capacity and in-service dates. Please include only planned conventional units with an in-service date past January 1, 2018. For each planned unit, provide the date of the Commission’s Determination of Need and Power Plant Siting Act certification (if applicable), and the anticipated in-service date.

| Planned Unit Additions | | | | |
|---|-----------------------------|--|-----------------------|------------------------|
| Generating Unit Name | Summer Capacity (MW) | Certification Dates (if Applicable) | | In-Service Date |
| | | Need Approved (Commission) | PPSA Certified | |
| Nuclear Unit Additions | | | | |
| None | | | | |
| Combustion Turbine Unit Additions | | | | |
| None | | | | |
| Combined Cycle Unit Additions | | | | |
| Midulla Generating Station | 30 | N/A | N/A | Nov-19 |
| Seminole Combined Cycle Facility | 1,108 | May-18 | Jul-18 | Dec-22 |
| Shady Hills Combined Cycle Facility | 546 | May-18 | Dec-18 | Dec-21 |
| Steam Turbine Unit Additions | | | | |
| None | | | | |
| Notes | | | | |
| - Midulla Generating Station is adding 30 MW of Summer Capacity to an existing 511 MW unit - Seminole Combined Cycle Facility is a self-build unit while Shady Hills Combined Cycle Facility is a tolled resource. | | | | |

49. For each of the planned generating units contained in the Company’s 2019 TYSP, please discuss the “drop dead” date for a decision on whether or not to construct each unit. Provide a time line for the construction of each unit, including regulatory approval, and final decision point.

A preliminary decision to construct the Seminole Combined Cycle Facility (SCCF) as described in Schedule 8 was made in September 2017. A final decision as to whether Seminole will construct the proposed SCCF will be based upon regulatory approvals. The Determination of Need was approved in May 2018 and the Site Certification was also received in 2018. A natural gas lateral which would serve SCCF is currently being developed and permitted by a third party who will own the lateral. Regulatory approval of this gas lateral is critical to the final decision to proceed with SCCF. For the SCCF, the “no later than” date for a decision on whether or not to construct is tentatively set for 12/31/2019. We anticipate that construction of the SCCF will commence in December, 2019 or first quarter of 2020 and that the facility will be commercially operable in December, 2022.

50. Please provide an estimate of the revenue requirements of the Company based upon the 2019 TYSP’s planned generating units.

The estimated revenue requirement for Seminole Electric is \$11 billion.

51. For each of the planned generating units contained in the Company's 2019 TYSP, please identify the next best alternative that was rejected for each unit. Provide information similar to Schedule 9 regarding each of the next best alternative unit(s). As part of this response, please also provide the additional revenue requirement that would have been associated with the next best alternative compared to the planned unit.

Seminole evaluated three (3) alternate scenarios. One scenario evaluated the effects of not constructing Seminole Combined Cycle Facility, one alternative in which Shady Hills Combined Cycle was not constructed and a final scenario in which neither facility was constructed. In each of these alternatives, the remaining need was met through existing capacity or purchase power opportunities identified through an RFP and each resulted in an increase in member revenue requirements. Further information can be found in:

- FPSC Docket No. 20170266-EC - Petition to determine need for Seminole Combined Cycle Facility, by Seminole Electric Cooperative, Inc.
- Docket No. 20170267-EC - Joint petition for determination of need for Shady Hills Combined Cycle Facility in Pasco County, by Seminole Electric Cooperative, Inc. and Shady Hills Energy Center, LLC.

52. For each existing and planned unit on the Company’s system, provide the following data based upon historic data from 2018 and projected capacity factor values for the period 2019–2028. Please complete the tables below and provide an electronic copy in Microsoft Excel format.

Projected Unit Information – Capacity Factor (%)

| Plant | Unit # | Unit Type | Fuel Type | Actual | Projected | | | | | | | | | |
|--|--------|-----------|-----------|--------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 |
| SGS | 1 | ST | BIT | 72.1% | 65.4% | 60.5% | 55.3% | 45.6% | N/A | N/A | N/A | N/A | N/A | N/A |
| SGS | 2 | ST | BIT | 66.9% | 69.0% | 69.6% | 64.8% | 56.1% | 45.5% | 49.7% | 50.3% | 51.3% | 51.4% | 51.1% |
| MGS CC | Plant | CC | NG | 79.0% | 85.4% | 91.8% | 90.2% | 68.1% | 43.0% | 39.2% | 43.7% | 52.8% | 50.2% | 56.7% |
| MGS PW CT | 4 | CT | NG | 7.4% | 3.7% | 1.5% | 6.9% | 2.3% | 1.0% | 0.8% | 1.8% | 2.6% | 2.9% | 2.8% |
| MGS PW CT | 5 | CT | NG | 7.9% | 3.0% | 1.1% | 5.7% | 1.8% | 0.7% | 0.6% | 1.3% | 2.0% | 2.2% | 2.1% |
| MGS PW CT | 6 | CT | NG | 7.9% | 2.2% | 0.9% | 5.1% | 1.3% | 0.6% | 0.4% | 0.9% | 1.5% | 1.7% | 1.6% |
| MGS PW CT | 7 | CT | NG | 9.4% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| MGS PW CT | 8 | CT | NG | 8.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| SCCF | Plant | CC | NG | N/A | N/A | N/A | N/A | 6.0% | 68.3% | 68.2% | 70.0% | 67.8% | 71.0% | 69.4% |
| Notes | | | | | | | | | | | | | | |
| MGS PW CTs 7 & 8 are withheld in the long-term forecast for contingency reserves. SCCF online 12/2022. One coal unit removed from service in 2023. | | | | | | | | | | | | | | |

53. 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.

Seminole Combined Cycle Facility is projected to be in service in December 2022 at which time one of the SGS coal units will be removed from service and will be rendered inoperable within 300 days of the initial fuel firing of the new combined cycle facility pursuant to section 11C of Air Permit No. 1070025-AC (PSD-FL-443)

For the remaining Seminole coal unit, Seminole engaged BECON Corporation in 2007 to complete a life assessment of SGS in which they concluded that SGS had a useful life through 2047 (an estimated retirement date.) A like study for MGS has not been conducted, but according to the U.S. Energy Information Administration’s (EIA) “Today in Energy” dated December 13, 2011, the average age of natural gas-fired generators retired between 2000 and 2010 was 48 years old. Using this average age, an estimated retirement date of MGS’s CC plant would be 2050 and MGS’s CT units would be 2054.

54. Please complete the table below, providing a list of all of the Company’s steam units that are potential candidates for repowering to operation as Combined Cycle units. As part of this response, please provide the unit’s current fuel type, summer capacity rating, in-service date, and what potential conversion, fuel-switching, or repowering would be most applicable. Also include a description of any potential issues that could affect repowering efforts at any of these sites, related to such things as unit age, land availability, or other requirements.

Repowering Candidate Units - Steam

| Plant Name | Fuel Type | Summer Capacity (MW) | In-Service Date | Potential Conversion | Potential Issues |
|----------------|-----------|----------------------|-----------------|----------------------|------------------|
| Not Applicable | | | | | |
| Notes | | | | | |
| | | | | | |

55. Please identify each of the Company's existing (as of December 31, 2018) and planned (between 2019–2028) power purchase contracts, including firm capacity imports reflected in Schedule 7 of the Company's 2019 TYSP. Provide the seller, the term of the contract, amount of seasonal capacity purchased, the primary fuel (if applicable, such as with a unit purchase), whether it is included in the Utility's firm peak capacity, and a description of the source of the purchase (such as the name of the unit in a unit purchase).

Please see 2019 Ten-Year Site Plan Table 1.2 (page 07) for a description of existing and planned Purchase Power Agreements

56. Please identify each of the Company’s existing (as of December 31, 2018) and planned (between 2019–2028) power sales, including firm capacity exports reflected in Schedule 7 of the Company’s 2019 TYSP. Provide the purchaser, the term of the contract, amount of seasonal capacity sold, the primary fuel (if applicable, such as with a unit purchase), whether it is included in the Utility’s firm peak demand, and a description of the sale (such as the name of the unit in a unit purchase).

Existing Power Sales

| Purchaser | Contract Term | | Contract Capacity (MW) | | Capacity Factor | Primary Fuel (if any) | Firm Demand | Description |
|-------------------|---------------|-----------|------------------------|--------|-----------------|-----------------------|-------------|----------------|
| | Begins | Ends | Summer | Winter | % | | | |
| City of Homestead | 10/1/2015 | 5/31/2021 | 15 | 15 | | NG | N/A | Peaking Option |
| Notes | | | | | | | | |
| | | | | | | | | |

Planned Power Sales

| Purchaser | Contract Term | | Contract Capacity (MW) | | Capacity Factor | Primary Fuel (if any) | Firm Demand | Description |
|------------------|---------------|------|------------------------|--------|-----------------|-----------------------|-------------|-------------|
| | Begins | Ends | Summer | Winter | % | | | |
| No Planned Sales | | | | | | | | |
| Notes | | | | | | | | |
| | | | | | | | | |

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

None.

58. Please provide a list of all proposed transmission lines in the planning period that require certification under the Transmission Line Siting Act. Please also include those that have been approved, but are not yet in-service, when completing the table below.

Transmission Projects Requiring TLISA Approval

| Transmission Line | Line Length | Nominal Voltage | Date Need Approved | Date TLISA Certified | In-Service Date |
|-------------------|-------------|-----------------|--------------------|----------------------|-----------------|
| | (Miles) | (kV) | | | |
| None | | | | | |
| Notes | | | | | |
| | | | | | |

Environmental

59. 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 2018 period. As part of your narrative, please discuss the potential for existing environmental regulations to impact unit dispatch, curtailments, or retirements during the 2019–2028 period.

In 2018, Seminole operated in accordance with required regulatory permits and did not curtail its operations as a result of existing environmental regulations. Through 2028, Seminole does not anticipate unit dispatch impacts, curtailments or retirements as a result of existing environmental regulations.

60. Please complete the table below, providing actual and projected amounts of regulated air pollutants and carbon dioxide emitted, on an annual and per megawatt-hour basis, by the Company’s generation fleet. Please also provide an electronic copy of the completed table in Microsoft Excel format.

Emissions of Regulated Air Pollutants & CO₂

| Year | SO ₂ | | NO _x | | Mercury | | Particulates | | CO ₂ | | |
|---|-----------------|-------|-----------------|-------|----------|----------|--------------|------|-----------------|-----------|------------|
| | lb/MWh | Tons | lb/MWh | Tons | lb/MWh | Tons | lb/MWh | Tons | lb/MWh | Tons | |
| Actual | 2009 | 4.08 | 20,590 | 0.90 | 4,562 | 7.92E-06 | 0.04 | 0.15 | 745 | 1,747 | 8,825,602 |
| | 2010 | 2.86 | 16,975 | 0.46 | 2,739 | 7.46E-06 | 0.044 | 0.11 | 665 | 1,765 | 10,459,377 |
| | 2011 | 2.7 | 14,979 | 0.45 | 2,498 | 6.24E-06 | 0.035 | 0.11 | 634 | 1,802 | 9,996,076 |
| | 2012 | 2.65 | 13,769 | 0.45 | 2,363 | 9.82E-06 | 0.051 | 0.14 | 752 | 1,888 | 9,804,938 |
| | 2013 | 2.25 | 11,952 | 0.46 | 2,469 | 3.26E-06 | 0.017 | 0.19 | 1,014 | 1,717 | 9,121,050 |
| | 2014 | 2.28 | 13,023 | 0.43 | 2,472 | 6.23E-06 | 0.036 | 0.13 | 716 | 1,578 | 8,991,238 |
| | 2015 | 1.87 | 10,192 | 0.44 | 2,383 | 4.44E-06 | 0.024 | 0.14 | 759 | 1,626 | 8,863,339 |
| | 2016 | 1.08 | 5,852 | 0.51 | 2,773 | 2.60E-06 | 0.014 | 0.15 | 791 | 1,687 | 9,153,793 |
| | 2017 | 1.02 | 5,616 | 0.51 | 2,786 | 1.95E-06 | 0.011 | 0.14 | 776 | 1,712 | 9,425,706 |
| 2018 | 1.00 | 5,646 | 0.51 | 2,885 | 2.70E-06 | 0.015 | 0.14 | 778 | 1,727 | 9,798,613 | |
| Projected | 2019 | 0.95 | 5,449 | 0.48 | 2,757 | 2.27E-06 | 0.013 | 0.13 | 770 | 1,664 | 9,551,902 |
| | 2020 | 0.90 | 5,291 | 0.46 | 2,730 | 2.25E-06 | 0.013 | 0.13 | 751 | 1,622 | 9,535,639 |
| | 2021 | 0.87 | 4,873 | 0.46 | 2,577 | 2.24E-06 | 0.013 | 0.12 | 694 | 1,602 | 8,945,095 |
| | 2022 | 0.86 | 4,138 | 0.45 | 2,164 | 2.21E-06 | 0.011 | 0.12 | 598 | 1,580 | 7,571,202 |
| | 2023 | 0.35 | 1,977 | 0.27 | 1,555 | 1.78E-06 | 0.010 | 0.07 | 413 | 1,046 | 5,915,528 |
| | 2024 | 0.38 | 2,151 | 0.28 | 1,608 | 1.79E-06 | 0.010 | 0.08 | 435 | 1,070 | 6,087,302 |
| | 2025 | 0.37 | 2,171 | 0.28 | 1,657 | 1.79E-06 | 0.011 | 0.08 | 443 | 1,064 | 6,271,186 |
| | 2026 | 0.37 | 2,209 | 0.28 | 1,708 | 1.80E-06 | 0.011 | 0.07 | 447 | 1,068 | 6,454,175 |
| | 2027 | 0.36 | 2,220 | 0.28 | 1,725 | 1.79E-06 | 0.011 | 0.07 | 454 | 1,062 | 6,519,275 |
| | 2028 | 0.36 | 2,212 | 0.28 | 1,745 | 1.80E-06 | 0.011 | 0.07 | 452 | 1,060 | 6,604,115 |
| Notes | | | | | | | | | | | |
| SO2 Scrubbing Percentage Rates increased in 2015. One coal unit removed from service in 2023 | | | | | | | | | | | |

61. For the U.S. Environmental Protection Agency’s (EPA’s) Mercury and Air Toxics Standards (MATS) Rule:

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

The MATS Rule is subject to ongoing federal litigation and potential revision by the Environmental Protection Agency. Seminole does not anticipate being materially affected by any changes that may come about as a result of the legal or administrative proceedings.

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

Seminole maintains compliance with the MATS Rule via quarterly emissions testing for PM, SO2 scrubbing/removal and continuous monitoring “surrogate option” for HCl, and annual emissions testing for Hg (LEE Status).

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

Not Applicable

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

Seminole is in compliance with the current regulatory structure of the MATS rule. No regulatory approvals are needed unless Seminole opts for alternative compliance demonstration methods.

- e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete the following chart regarding MATS-related costs:

Not Applicable

| Year | Estimated Cost of Mercury and Air Toxics Standards (MATS) Rule Impacts (2019 \$ millions) | | | |
|-------|---|-----------|------------|-------------|
| | Capital Costs | O&M Costs | Fuel Costs | Total Costs |
| 2019 | | | | < \$0.25 M |
| 2020 | | | | < \$0.25 M |
| 2021 | | | | < \$0.25 M |
| 2022 | | | | < \$0.25 M |
| 2023 | | | | < \$0.125 M |
| 2024 | | | | < \$0.125 M |
| 2025 | | | | < \$0.125 M |
| 2026 | | | | < \$0.125 M |
| 2027 | | | | < \$0.125 M |
| 2028 | | | | < \$0.125 M |
| Notes | | | | |

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

Not Applicable

62. For the U.S. EPA’s Cross-State Air Pollution Rule (CSAPR):

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

The most recent update to the CSAPR Rule is subject to ongoing federal litigation. Beginning with compliance year 2017, State of Florida sources were removed from CSAPR applicability. Accordingly, Seminole is not currently impacted by the CSAPR rule in its current form. Seminole does not anticipate being materially affected by any changes that may come about as a result of the legal proceedings.

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

Not Applicable

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

Not Applicable

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

Not Applicable

e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete the following chart regarding CSAPR-related costs:

Not Applicable

| Year | Estimated Cross-State Air Pollution Rule (CSAPR) Rule Impacts (2019 \$ millions) | | | |
|--|--|-----------|------------|-------------|
| | Capital Costs | O&M Costs | Fuel Costs | Total Costs |
| 2019 | | | | 0 |
| 2020 | | | | 0 |
| 2021 | | | | 0 |
| 2022 | | | | 0 |
| 2023 | | | | 0 |
| 2024 | | | | 0 |
| 2025 | | | | 0 |
| 2026 | | | | 0 |
| 2027 | | | | 0 |
| 2028 | | | | 0 |
| Notes | | | | |
| Costs based on current CSAPR regulations | | | | |

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

Not Applicable

63. For the U.S. EPA’s Cooling Water Intake Structures (CWIS) Rule:

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

Seminole does not expect to be materially impacted by the CWIS rule.

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

Seminole (SGS Generating Station) will comply with the CWIS rule through the use of closed cycle cooling.

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

Seminole Generating Station submitted a number of required reports in support of renewing the facility NPDES permit. Seminole is working with State Agency in order to provide necessary information supporting Seminole’s compliance with the rule.

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

There are no direct regulatory approvals required because Seminole Generating Station is already a closed cycle cooling facility.

- e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete the following chart regarding CWIS-related costs:

Not Applicable

| Year | Estimated Cost of Cooling Water Intake Structures Rule (CWIS) Rule Impacts (2019 \$ millions) | | | |
|-------|---|-----------|------------|-------------|
| | Capital Costs | O&M Costs | Fuel Costs | Total Costs |
| 2019 | | | | <0.20 |
| 2020 | | | | <0.20 |
| 2021 | | | | <0.20 |
| 2022 | | | | <0.20 |
| 2023 | | | | <0.20 |
| 2024 | | | | <0.20 |
| 2025 | | | | <0.20 |
| 2026 | | | | <0.20 |
| 2027 | | | | <0.20 |
| 2028 | | | | <0.20 |
| Notes | | | | |

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

Not Applicable

64. For the U.S. EPA’s Coal Combustion Residuals Rule (CCR), both for classification of coal ash as a “Non-Hazardous Waste” and as a “Special Waste.”

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

Seminole does not expect to be materially impacted by ongoing implementation of the CCR rule.

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

Seminole has developed a compliance strategy for completing all required provisions within the CCR rule pursuant to applicable time requirements. There is no one method of compliance for the various facets of the rule.

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

There are numerous compliance requirements within the CCR rule. Seminole intends to continue meeting all outstanding requirements within prescribed compliance schedules.

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

FDEP has thus far chosen not to incorporate the CCR rule into state regulations. The CCR rule is enforced through citizen suits. No regulatory approvals are currently required.

e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete the following chart regarding CCR-related costs:

Not Applicable

| Year | Estimated Coal Combustion Residuals Rule (CCR) Impacts (2019 \$ millions) | | | |
|--------------|--|-----------|------------|-------------|
| | Capital Costs | O&M Costs | Fuel Costs | Total Costs |
| 2019 | | | | < \$0.15 M |
| 2020 | | | | < \$0.15 M |
| 2021 | | | | < \$0.15 M |
| 2022 | | | | < \$0.15 M |
| 2023 | | | | < \$0.15 M |
| 2024 | | | | < \$0.15 M |
| 2025 | | | | < \$0.15 M |
| 2026 | | | | < \$0.15 M |
| 2027 | | | | < \$0.15 M |
| 2028 | | | | < \$0.15 M |
| Notes | | | | |
| | | | | |

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

Not Applicable

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?

Should Seminole construct a new gas-fired combined cycle facility, it will be compliant with the most recent (111b) applicable standards for new sources. For existing sources (111d), Seminole would very likely be materially impacted by the applicable portions of the Affordable Clean Energy (ACE) Rule in its proposed form of August 2018. A final ACE Rule will most likely be the subject of federal litigation. The Clean Power Plan (CPP) is currently held in abeyance while EPA develops the final ACE Rule. In addition, enforcement of the CPP has been stayed by the US Supreme Court until resolution of the referenced litigation.

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

Given the current legal and administrative status of the CPP and ACE rules and resultant suspension of FDEP activities toward developing a State Implementation Plan, a meaningful compliance strategy is not possible at this time. Seminole continues to monitor the litigation and rulemaking surrounding the CPP and the ACE rules.

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

Not applicable at this time

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

Not applicable at this time

- e. Does the Company anticipate asking for cost recovery for any expenses related to this rule? Please complete the following chart regarding costs:

No

| Year | Estimated Cost of Standards of Performance for Greenhouse Gas Emissions Rule for New Sources Impacts (2019 \$ millions) | | | |
|------|---|-----------|------------|-------------|
| | Capital Costs | O&M Costs | Fuel Costs | Total Costs |
| 2019 | | | | 0 |
| 2020 | | | | 0 |
| 2021 | | | | 0 |
| 2022 | | | | Unknown |
| 2023 | | | | Unknown |
| 2024 | | | | Unknown |
| 2025 | | | | Unknown |
| 2026 | | | | Unknown |
| 2027 | | | | Unknown |

| | | | | |
|--|--|--|--|---------|
| 2028 | | | | Unknown |
| Notes | | | | |
| Initial Interim Compliance Period was scheduled to begin in 2022 | | | | |

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

Not Applicable

66. Please identify, 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. As part of this response, please also indicate the unit’s name, type, fuel type, and net summer generating capacity. Please complete the table below and provide an electronic copy in Microsoft Excel format.

Estimated Impacts of EPA’s Rules on Generating Units

| Unit | Unit Type | Fuel Type | Net Sum Capacity (MW) | Type of EPA Rule Impacts | | | | | Anticipated Impacts |
|----------------------|-----------------------------------|-------------|-----------------------|--------------------------|------------|------|---------------------|---------------|--|
| | | | | MATS | CSAPR/CAIR | CWIS | CCR | | |
| | | | | | | | Non-Hazardous Waste | Special Waste | |
| Seminole CC Facility | Combined Cycle Combustion Turbine | Natural Gas | 1,108 | | | | | | |
| SGS Unit 1 | Wall Fired boiler | Coal | 626 | x | | x | x | x | Additional Reporting, Recordkeeping and Monitoring |
| SGS Unit 2 | Wall fired boiler | Coal | 634 | x | | x | x | x | Additional Reporting, Recordkeeping and Monitoring |
| MGS Unit 1 | Combined Cycle Combustion Turbine | Natural Gas | 270 | | | | | | |
| MGS Unit 2 | Combined Cycle Combustion Turbine | Natural Gas | 270 | | | | | | |
| MGS Units 4A/4B | Simple Cycle Combustion Turbines | Natural Gas | 54 | | | | | | |
| MGS Units 5A/5B | Simple Cycle Combustion Turbines | Natural Gas | 54 | | | | | | |
| MGS Units 6A/6B | Simple Cycle Combustion Turbines | Natural Gas | 54 | | | | | | |
| MGS Units 7A/7B | Simple Cycle Combustion Turbines | Natural Gas | 54 | | | | | | |
| MGS Units 8A/8B | Simple Cycle Combustion Turbines | Natural Gas | 54 | | | | | | |
| Notes | | | | | | | | | |

| | | | | | | | | | | |
|---------------------------|---|-----------------|----|--|--|--|--|--|--|---|
| MGS Units 7A/ 7B | Simple Cycle Combusti on Turbines | Natur al Gas | 54 | | | | | | | 0 |
| MGS Units 8A/ 8B | Simple Cycle Combusti on Turbines | Natur al Gas | 54 | | | | | | | 0 |
| Notes | | | | | | | | | | |
| | | | | | | | | | | |

68. Please identify, 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. Please complete the table below and provide an electronic copy in Microsoft Excel format.

| Estimated Timing of Unit Impacts of EPA’s Rules | | | | | | | | |
|---|-----------------------------------|-------------|-----------------------|--|------------|------|---------------------|---------------|
| Unit | Unit Type | Fuel Type | Net Sum Capacity (MW) | Estimated Timing of EPA Rule Impacts (Month/Year - Duration) | | | | |
| | | | | MATS | CSAPR/CAIR | CWIS | CCR | |
| | | | | | | | Non-Hazardous Waste | Special Waste |
| Seminole CC Facility | Combined Cycle Combustion Turbine | Natural Gas | 1,108 | | | | | |
| SGS Unit 1 | Wall Fired boiler | Coal | 626 | N/A | N/A | N/A | N/A | N/A |
| SGS Unit 2 | Wall fired boiler | Coal | 634 | N/A | N/A | N/A | N/A | N/A |
| MGS Unit 1 | Combined Cycle Combustion Turbine | Natural Gas | 270 | N/A | N/A | N/A | N/A | N/A |
| MGS Unit 2 | Combined Cycle Combustion Turbine | Natural Gas | 270 | N/A | N/A | N/A | N/A | N/A |
| MGS Units 4A/4B | Simple Cycle Combustion Turbines | Natural Gas | 54 | N/A | N/A | N/A | N/A | N/A |
| MGS Units 5A/5B | Simple Cycle Combustion Turbines | Natural Gas | 54 | N/A | N/A | N/A | N/A | N/A |
| MGS Units 6A/6B | Simple Cycle Combustion Turbines | Natural Gas | 54 | N/A | N/A | N/A | N/A | N/A |
| MGS Units 7A/7B | Simple Cycle Combustion Turbines | Natural Gas | 54 | N/A | N/A | N/A | N/A | N/A |
| MGS Units 8A/8B | Simple Cycle Combustion Turbines | Natural Gas | 54 | N/A | N/A | N/A | N/A | N/A |
| Notes | | | | | | | | |
| Retirements, Curtailments, or other offline periods are not expected due to the identified rules. | | | | | | | | |

69. 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 units not modified by the rule, that may be required to maintain reliability if unit retirements,

curtailments, additional emissions control upgrades, or longer outage times due to each of these EPA rules.

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

Retirements, curtailments, or other ongoing downtime periods are not expected due to the MATS Rule.

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

As of compliance year 2017, Florida sources are not subject to CSAPR.

- c. Cooling Water Intake Structures (CWIS) Rule.

Retirements, curtailments, or other ongoing downtime periods are not expected due to the CWIS Rule.

- d. Coal Combustion Residuals (CCR) Rule.

Retirements, curtailments, or other ongoing downtime periods are not expected due to the CCR Rule.

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

Assessment of future impacts associated with the existing source rule (111d) portion of the stayed CPP and proposed ACE rules cannot be assessed at this time given the current legal and administrative status of the judicial stay and lack of a State Implementation Plan.

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

71. What steps has your Company taken, is currently taking, or is planning to take to address curbing carbon dioxide emissions for existing sources? How has your Company addressed the ruling by the U.S. Supreme Court that carbon dioxide is a pollutant under the Clean Air Act? How does your Company plan on addressing carbon dioxide emissions from existing sources during the 10-year site planning period?

Future measures to address carbon dioxide emissions are contingent on legal and administrative resolution of the stayed CPP and proposed ACE rules as well as the potential resultant development of a State Implementation Plan. Of note, emissions of carbon dioxide

will decrease following the permanent removal from service of one of two existing coal boilers (est. 2023).

Fuel Supply & Transportation

72. Please provide, 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 period 2009–2018. 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 period 2019–2028. As part of this response, please complete the table below and provide the completed table in Microsoft Excel format.

Average Fuel Price Comparison

| Year | Uranium | | Coal | | Natural Gas | | Residual Oil | | Distillate Oil | | |
|--|---------|----------|------|----------|-------------|----------|--------------|----------|----------------|----------|-------|
| | GWh | \$/MMBTU | GWh | \$/MMBTU | GWh | \$/MMBTU | GWh | \$/MMBTU | GWh | \$/MMBTU | |
| Actual | 2009 | 188 | 0.5 | 7,552 | 3.62 | 8,916 | 5.01 | 28 | 12.07 | 301 | 13.94 |
| | 2010 | 158* | 0* | 9,142 | 3.40 | 6,981 | 5.39 | 43 | 10.09 | 267 | 16.67 |
| | 2011 | 128* | 0* | 8,663 | 3.34 | 6,310 | 5.43 | 0 | N/A | 86 | 21.58 |
| | 2012 | 0 | 0 | 7,754 | 3.60 | 7,000 | 4.39 | 0 | N/A | 66 | 23.07 |
| | 2013 | 0 | 0 | 7,725 | 3.58 | 7,071 | 5.76 | 0 | N/A | 54 | 23.17 |
| | 2014 | 0 | 0 | 8,159 | 3.62 | 4,737 | 6.17 | 0 | N/A | 35 | 21.94 |
| | 2015 | 0 | 0 | 7,803 | 3.55 | 5,333 | 4.71 | 0 | N/A | 36 | 15.09 |
| | 2016 | 0 | 0 | 7,488 | 3.53 | 6,015 | 4.20 | 0 | N/A | 37 | 11.27 |
| | 2017 | 0 | 0 | 7,528 | 3.42 | 6,180 | 4.62 | 0 | N/A | 36 | 13.19 |
| | 2018 | 0 | 0 | 7,623 | 3.50 | 6,642 | 4.43 | 0 | N/A | 37 | 16.08 |
| Projected | 2019 | 0 | 0 | 7,426 | 3.16 | 6,815 | 3.32 | 0 | N/A | 38 | 15.72 |
| | 2020 | 0 | 0 | 7,208 | 3.35 | 7,230 | 2.94 | 0 | N/A | 32 | 18.87 |
| | 2021 | 0 | 0 | 6,630 | 3.52 | 7,868 | 2.90 | 0 | N/A | 35 | 20.22 |
| | 2022 | 0 | 0 | 5,615 | 3.61 | 8,985 | 2.83 | 0 | N/A | 20 | 20.69 |
| | 2023 | 0 | 0 | 2,517 | 3.69 | 12,388 | 2.79 | 0 | N/A | 17 | 20.99 |
| | 2024 | 0 | 0 | 2,757 | 3.78 | 12,362 | 2.88 | 0 | N/A | 14 | 21.17 |
| | 2025 | 0 | 0 | 2,785 | 3.86 | 12,769 | 2.98 | 0 | N/A | 14 | 21.26 |
| | 2026 | 0 | 0 | 2,842 | 3.95 | 13,015 | 3.10 | 0 | N/A | 14 | 21.24 |
| | 2027 | 0 | 0 | 2,847 | 4.04 | 13,324 | 3.19 | 0 | N/A | 14 | 21.39 |
| | 2028 | 0 | 0 | 2,839 | 4.13 | 13,524 | 3.29 | 0 | N/A | 15 | 21.57 |
| Notes | | | | | | | | | | | |
| * In 2010 & 2011, The total uranium fuel usage represents alternative energy provided to Seminole during CR3 unscheduled outage for those years. | | | | | | | | | | | |

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

Seminole utilizes recognized, authoritative independent third party commodity price forecasts and/or NYMEX natural gas and oil commodity prices as a starting point for projecting the delivered price of fuel to the generating resources. Seminole also utilizes authoritative independent third party forecasts for escalation or economic market indices to adjust future prices of fuel related service costs, such as transportation or contractual fuel price adjustments. Forecasts are then adjusted to include known and measurable conditions from Seminole's long-term fuel supply, storage, and transportation agreements.

74. Please identify and discuss expected industry trends and factors for each fuel type (coal, natural gas, nuclear fuel, oil, etc.) that may affect the Company during the period 2019–2028.
- a. Coal
 - b. Natural Gas
 - c. Nuclear (if applicable)
 - d. Fuel Oil
 - e. Other (please specify each, if any)

Please see Seminole's 2019 Ten-Year Site Plan pages 41-44.

75. Please identify and discuss steps that the Company has taken to ensure natural gas supply availability and transportation over the 2019–2028 planning period.

Seminole maintains a diverse portfolio of active, industry standard natural gas contracts (GISB/NAESB) with more than 50 suppliers, marketers and other Florida utilities that provide natural gas commodity and/or may have available transportation capacity for resale. Seminole maintains a balanced portfolio of long-term (1 to 10 years) natural gas supply arrangements for a portion of its projected baseload requirements and relies on shorter-term transactions to obtain the remaining requirements. To increase accessibility to onshore gas supply production, Seminole holds a firm transportation contract for capacity on Transcontinental Gas Pipe Line's ("Transco") Mobile Bay South portion of its system. Seminole's capacity of 25,000 Dth/day began in 2016 and provides a firm transportation path from the Transco Station-85 supply hub to interconnects with the Florida Gas Transmission ("FGT") and Gulfstream Natural Gas System ("Gulfstream") interstate pipelines that ultimately serve Seminole's power plants. Seminole also contracts for firm gas storage service to provide for year-round storage capacity for 450,000 Dths to supplement its supply purchases during periods of scarcity.

For natural gas transportation, aside from the Transco capacity mentioned above, Seminole holds various contracts for firm and interruptible transportation capacity on both FGT and Gulfstream pipelines, as well as interruptible transportation service contracts on the Elba Express Company, Southern Natural Gas Company, and Sabal Trail Transmission pipelines. Seminole currently has agreements for 193,000 Dth/day of firm natural gas transportation capacity.

76. 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 for the period 2019–2028.

To support Seminole's planned generating resource additions, Seminole is aware of expansions of existing interstate pipelines delivering into Florida that will add incremental gas transportation capacity to peninsular Florida and increase the available capacity for use specifically at Seminole's proposed new plants. These expansions are projected to go into service in the 2022-2023 timeframe to align with the expected in-service dates of Seminole's new generating units. In addition, Seminole has contracted with a third-party gas transportation company in Florida to construct, own and operate a natural gas pipeline to interconnect Seminole's SGS power plant site with FGT's mainline transmission system. Seminole has contracted for firm transportation capacity on that pipeline to ensure adequate fuel delivery to its site.

77. 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, for the period 2019–2028.

In general, LNG imports to the U.S. are expected to be minimal over the period because of global gas market economics. Sufficient domestic natural gas production is expected to keep gas prices too low in the U.S. relative to other global markets to attract cargoes of LNG. Conversely, companies are seeking to export LNG from the U.S. and exports are expected to occur during the period. While the incremental demand for U.S. gas production should result in some upward pressure on domestic gas prices, Seminole assumes that a) the export capacity from the U.S. will be small enough that its impact on U.S. prices will be minimal or b) continuing increases in production will also serve to partially offset price increases. Seminole has noticed shifts to traditional gas flows throughout the Southeast that will accommodate growing LNG exports, which is bullish in regards to future market prices for natural gas.

78. Please identify and discuss the Company's plans for the use of firm natural gas storage for the period 2019–2028.

Seminole has a firm natural gas storage agreement with SG Resources Mississippi LLC for capacity through March of 2021. The arrangement provides for storage of natural gas supply year-round and associated daily injection and withdrawal rights. Seminole uses its firm storage capacity to mitigate the risk of supply unavailability and as a tool to balance its daily/monthly gas supply to demand. As Seminole expands its use of natural gas or adds additional natural gas-fired capacity to its generation resources, it will evaluate the need for additional firm storage capacity in its portfolio.

79. 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 period 2019–2028. 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.

Seminole is a "Captive Shipper" to CSX Transportation (CSXT) for all delivery of Seminole's coal requirements to the Seminole Generating Station. Seminole does not have, nor can we develop, any direct access to water transportation or other economic alternative modes of transportation. We could supply very small quantities of coal in an emergency through truck deliveries from other power stations in Florida which could receive our coal deliveries. There are no active coal terminals in the vicinity of Palatka, Florida to receive supplies through third party transactions.

Currently, Seminole has rail transportation through a CSXT transportation contract for service to our Seminole Generating Station. This contract provides access to supply regions such as Illinois Basin, including West Kentucky, Illinois and Indiana mines, and NAPP, and includes the Charleston, SC port terminal for import of coal.

80. Please identify and discuss any expected changes in coal handling, blending, unloading, and storage for any planned changes and construction projects at coal generating units for the period 2019–2028.

During the period from 2019 through 2028, outside of the planned removing of service of one of our coal units in 2022, Seminole does not have any planned changes and/or construction projects necessitating changes to the coal handling, blending, unloading, and storage at Seminole Generating Station.

81. **[DEF & FPL Only]** Please identify and discuss the Company's plans for the storage and disposal of spent nuclear fuel for the period 2019–2028. 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

82. **[FPL Only]** Please identify and discuss expected uranium production industry trends and factors that will affect the Company during the period 2019–2028.

Not Applicable