BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Joint Petition of Seminole Electric Cooperative, Inc., and Shady Hills Energy Center, LLC, for Determination of Need for Shady Hills Combined Cycle Facility.	DOCKET NO. 20170267-EC DATE: December 22, 2017

NOTICE OF FILING CORRECTED TESTIMONY

Seminole Electric Cooperative, Inc. ("Seminole"), hereby files corrected direct testimony of Michael P. Ward II, in the above docket, and states:

1. On December 21, 2017, Seminole and Shady Hills Energy Center, LLC, filed a joint petition for determination of need for the Shady Hills Combined Cycle Facility ("SHCCF") in the above docket. On the same date, Seminole filed a separate petition for determination of need for the Seminole Combined Cycle Facility ("SCCF"), which has been assigned Docket No. 20170266-EC. In both dockets, Seminole filed supporting testimony of Michael P. Ward, II. However, undersigned counsel inadvertently filed Mr. Ward's testimony in support of the SCCF in this docket, rather than Mr. Ward's testimony in support of the SHCCF.

2. Attached hereto is the correct testimony of Mr. Ward in support of the SHCCF, which should be substituted for the testimony of Mr. Ward filed in this docket on December 21, 2017

WHEREFORE, for the foregoing reasons, Seminole Electric Cooperative, Inc., hereby files the corrected direct testimony of Michael P. Ward, II.

RESPECTFULLY SUBMITTED this 22nd day of December, 2017.

HOPPING GREEN & SAMS, P.A.

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Attorneys for SEMINOLE ELECTRIC COOPERATIVE, INC. and SHADY HILLS ENERGY CENTER, LLC.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was served upon the following by electronic mail on this 22nd day of December, 2017:

Lee Eng Tan, Esquire
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

s/*Gary V. Perko*
Attorney

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 2017_____-EC

IN RE: JOINT PETITION OF SEMINOLE ELECTRIC COOPERATIVE, INC., AND SHADY HILLS ENERGY CENTER, LLC, FOR DETERMINATION OF NEED FOR SHADY HILLS COMBINED CYCLE FACILITY

DIRECT TESTIMONY & EXHIBITS OF:

MICHAEL P. WARD II

BEFORE THE PUBLIC SERVICE COMMISSION

SEMINOLE ELECTRIC COOPERATIVE, INC.

DIRECT TESTIMONY OF MICHAEL P. WARD II

DOCKET NO. _____-EC

DECEMBER 21, 2017

Q. Please state your name and address.

A. My name is Michael Ward. My business address is 16313 North Dale Mabry Highway, Tampa, Florida 33618.

Q. By whom are you employed and in what capacity?

A. I am employed by Seminole Electric Cooperative, Inc. ("Seminole") as Vice President of Strategic Initiatives.

Q. Please describe your responsibilities in your current position.

A. My responsibilities include executive management responsibility for identifying, analyzing, developing and implementing strategic opportunities that fulfill Seminole's strategic resource plan, and to oversee, direct and manage Seminole's self-build combined cycle facility, tolling agreements, purchased power agreements, solar generation, coal unit retirement, headquarters building renovation and back-up control center/business continuity projects.

Q. Please state your professional experience and education background

A. I have worked in the energy industry for over twenty five years. I have been with Seminole since 2013, and have held my current position at Seminole since October 2017. I hold a Bachelor of Science in Electrical Engineering from the University of Florida and a Masters of Business Administration from the University of Maryland University College. In addition, I hold a Certificate in National Security Affairs from the Naval War College and National Defense University. A current copy of my professional resume is attached as Exhibit No. ___ (MPW-1) to this pre-filed testimony.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits, which were prepared by me or under my supervision and are attached to this pre-filed testimony:

- Exhibit No. __ (MPW-1) - Resume of Michael P. Ward, II;
- Sections 1, 2, 3.1, 3.2, and 3.3 of Seminole's Need Study, which is attached as Exhibit No. ____ (MPW-2) (Other witnesses will sponsor the sections of the Need Study within their areas of responsibility);
- Exhibit No. __ (MPW-3) - Seminole Electric Service Areas
- Exhibit No. __ (MPW-4) - Seminole's Power Purchase Contracts (as of December 31, 2016); and
- Exhibit No. _ (MPW-5) - Seminole's New Power Purchase Contracts.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to describe Seminole and its Members, and to provide an overview of case supporting our joint request, with Shady Hills Energy Center, LLC (“SHEC”), for a determination of need for the proposed Shady Hills Combined Cycle Facility ("SHCCF"). I also will introduce Seminole's subject matter witnesses and address the adverse consequences of a denial of Seminole's need petition.

SEMINOLE & ITS MEMBERS

Q. Please describe Seminole and its Members.

A. Seminole is a not-for-profit rural electric cooperative organized under Chapter 425, Florida Statutes. Seminole is a generation and transmission cooperative that only makes wholesale sales. It does not make retail sales.

Seminole’s nine Members are also not-for-profit rural electric cooperatives organized under Chapter 425, Florida Statutes, and each serves retail end-use member-consumers in Florida. Seminole's members are: Central Florida Electric Cooperative, Inc., Clay Electric Cooperative, Inc., Glades Electric Cooperative, Inc., Peace River Electric Cooperative, Inc., SECO Energy, Suwannee Valley Electric Cooperative, Inc., Talquin Electric Cooperative, Inc., Tri-County Electric Cooperative, Inc., and Withlacoochee River Electric Cooperative, Inc.

Approximately 1.6 million people and businesses in parts of 42 Florida counties rely on Seminole's Member cooperatives for electricity. The areas which Seminole's Members serve are shown in Exhibit No. ___ (MPW-2).

Q. Please describe Seminole's purpose.

A. Seminole exists to provide reliable electric service at competitive rates to its Members. Seminole was organized in 1948, but remained relatively inactive until shortly after the 1973 oil embargo. In 1974, Seminole's Board determined that Seminole should develop independent power supplies for its Members. In 1975, each Member entered into a long term "All Requirements" contract with Seminole for the purchase of wholesale power. Under these contracts, each Member purchases from Seminole all of its power requirements for distribution within the State of Florida not otherwise supplied under pre-existing contracts. Four of Seminole's Members had pre-existing contracts with the Southeastern Power Administration, which provide 26 MW of the total capacity required by these Members. Members also have the ability to own or lease renewable or peak shaving generation with capacity amounts up to 5% of their 3-year average peak demand.

Q. How is Seminole governed?

A. Seminole is governed by its Members, through a Board of Trustees. Each Member has two voting representatives and one alternate representative on Seminole's Board of Trustees. Our CEO and General Manager, Lisa D. Johnson, serves at the pleasure of the Board of Trustees.

Q. How does Seminole meet the power supply needs of its Members and their member-consumers?

A. Seminole meets the power supply needs of its Members and their member-consumers with Seminole-owned generation in combination with purchased power or tolling contracts with independent power producers, investor-owned and municipal utilities, and renewable energy providers.

Q. Please describe the generating units Seminole owns to meet the requirements of its Members and their members-consumers.

A. Seminole's existing owned generating resources are located at two sites. Seminole Generating Station ("SGS"), which is located in Putnam County near Palatka, Florida, includes two coal-fired generating units (Units 1 and 2), each with a net generating capacity (winter) of approximately 664 MW. Midulla Generating Station ("MGS"), which is located in Hardee County, Florida, includes a natural gas-fired combined cycle facility (Units 1-3) with a net (winter) generating capability of 539 MW and five twin-pack gas turbines (Units 4-8) with a combined net (winter) generating capability of 310 MW. All of the MGS units also have fuel oil capability. Each of these facilities is shown on Exhibit No. ___ (MPW-2).

Q. What are Seminole's current purchased power and tolling resources?

A. Exhibit No. ___ (MPW-3) is a table summarizing Seminole's purchased power agreements ("PPAs") and tolling contracts as of December 31, 2016. As a result of the Request for Proposals ("RFP") process discussed in the pre-filed testimony of Jason Peters and Julia Diazgranados, Seminole has extended the

Oleander PPA through December 31, 2021, and has entered into an additional system PPA for intermediate and peaking power with Duke Energy Florida ("DEF"), another system PPA with Southern Company Services ("SCS"), and a power purchase agreement for solar resources with Tillman Solar Center, LLC., a subsidiary of Coronal Energy. These new agreements are reflected in the updated table shown in Exhibit No. ____ (MPW-4).

Q. Does Seminole's generation portfolio currently include renewable energy?

A. Seminole's generation portfolio includes a mix of technologies and fuel types, including a renewable energy portfolio. Seminole currently receives 87.8 MW from renewable energy sources including 13 MW from Biomass, 16.8 MW from landfill gas-to-energy, and 58 MW from waste-to-energy. In addition, Seminole operates a 2.2 MW Cooperative Solar facility located in Hardee County, Florida.

REQUEST FOR NEED DETERMINATION

Q. What relief does Seminole request in this proceeding?

A. Seminole and SHEC jointly request that the Commission grant an affirmative determination of need for the Shady Hills Combined Cycle Facility ("SHCCF") with an in-service date of December 31, 2021. SHCCF will be a state-of-the-art natural gas-fired one-on-one ("1x1") combined cycle unit with a net generating capacity of 550 MW (net nominal). The new facility, which will be owned and operated by SHEC, will be constructed adjacent to the existing Shady Hills power plant site in Pasco County, Florida.

Q. What is the basis for Seminole's request for need determination?

A. As a result of moderately increasing load growth and the expiration of several purchased power and tolling contracts, Seminole determined a need for approximately 901 MW of additional generating capacity beginning in 2021 and that need was projected to grow to approximately 1,265 MW by the end of 2022. Seminole has determined that the most cost effective, risk-managed resource plan to meet this projected capacity need is a mix of resources consisting of:

- existing generation resources;
- the self-build 1,050 MW (net nominal) 2x1 combined cycle facility known as the Seminole Combined Cycle Facility ("SCCF") in conjunction with the removal from service of one of the two existing 664 MW SGS coal units (this facility is the subject of a separate determination of need proceeding initiated by Seminole);
- several power purchase agreements ("PPAs") for generating resources, including a tolling agreement supporting the SHCCF.

Seminole's Board of Trustees selected the resource plan that includes the SHCCF and SCCF based on the results of a multi-stage resource planning process. That process included extensive economic analyses of self-build options and multiple power purchase alternatives, including numerous renewable energy proposals, identified during a robust RFP process, as well as careful consideration of non-economic attributes and risk factors.

Q. What were the results of Seminole's economic evaluations?

A. As discussed in the pre-filed testimony of Julia Diazgranados, the economic evaluation demonstrates that in net present value revenue requirement terms the selected resource plan is approximately $363 million less expensive than the closest alternative resource plan over the study period.

Q. What were the results of Seminole's evaluation of non-economic attributes?

A. In addition to evaluating the cost-effectiveness and risk impacts, Seminole considered our strategic objectives for our future resource portfolio to have the attributes of diversity, flexibility and optionality. As an example, one of the new long-term PPAs included in the selected resource plan provide Seminole with the advantage of optionality in terms of the amount of capacity available for purchase. This gives Seminole the flexibility to modify its commitment up or down. Given the vulnerability of load forecasts, the ability to modify resource commitments gives Seminole the ability to mitigate the impacts of economic acceleration/downturns or faster/slower load growth rates.

Q. Did Seminole consider the potential for new renewable energy resources as part of its evaluation?

A. Yes. As part of its need evaluation process, Seminole solicited proposals for renewable energy resources. The results of Seminole's economic evaluations show that additional renewable energy resources would not be cost-effective as compared to SHCCF and SCCF. Moreover, Seminole is a winter-peaking utility that experiences its highest end-use demand on winter mornings and nights when solar energy is not a viable capacity source to offset peak demand.

Nevertheless, in recognition of the energy value and summer capacity value of solar, Seminole has included 40 MW of solar in the selected resource plan.

Q. Did Seminole consider whether additional conservation measures are reasonably available to mitigate the projected capacity need?

A. Yes. As explained in the pre-filed direct testimony of Kyle Wood, Seminole is a wholesale provider of electricity that does not directly implement demand side management ("DSM") and conservation measures. Through its rate structure, Seminole promotes conservation by providing its Members price signals that reflect Seminole's cost of supplying power; thereby providing an incentive for Members to implement cost-effective DSM and conservation measures to lower peak demand. The effect of the DSM and conservation measures offered by Seminole's Members is reflected in Seminole's load forecast, but we nevertheless project need for additional generation capacity. Seminole recently sponsored an evaluation of DSM potential to identify potentially cost-effective DSM measures for our Members to consider and further evaluate. While the results of this study may help Seminole's Members to identify new DSM opportunities, there is not a sufficient amount of reasonably achievable DSM potential to offset the need for SCCF.

Q. Did Seminole consider the potential impact of the selected resource plan on fuel supply reliability?

A. Yes. Seminole considered the potential impact of the resource plan on fuel diversity and supply reliability, particularly in light of the removal from service of one of the existing SGS coal-fired generating units. In order to

enhance fuel supply reliability, Seminole is expanding its natural gas transportation plan to include capacity agreements with four different counterparties which ensures access to and delivery of a diverse gas supply. Seminole has supply agreements with over thirty natural gas suppliers. The retention in service of one of the coal-fired units at SGS provides additional mitigation of potential natural gas supply disruptions. Thus, the selected resource plan is not expected to significantly impact fuel diversity or supply reliability.

INTRODUCTION OF SEMINOLE'S WITNESSES

Q. Please identify Seminole's other witnesses in this proceeding and subjects each witness will address in his/her direct testimony.

A. The names and areas of responsibility for each of the other seven witnesses are (in alphabetical order):

Robert DeMelo, Seminole's Manager of Transmission Planning and System Protection, discusses Seminole's transmission planning process and the transmission costs and impacts of the various alternatives considered to address Seminole's need.

Julia Diazgranados, Seminole's Director of Treasury and Planning, addresses Seminole's power supply planning process, the reliability and need assessment Seminole performed to identify its need for capacity, and Seminole's economic evaluation of self-build and purchased power and tolling options. Importantly,

she explains why the SHCCF and SCCF are the most cost-effective, risk-managed options to meet the reliability and economic needs of Seminole and its Members. She describes the Seminole Board approval process and addresses the adverse consequences that would result if the requested need determination is not granted.

Tom Hines, of Tierra Resource Consultants, describes the results of work Tierra Consultants performed to quantify the energy savings that Seminole Members are achieving through implementation of conservation and DSM measures and to help Seminole evaluate other conservation measures that Seminole's Members may choose to implement.

Ankur Mathur, a Senior Vice President, of GE Capital US Holdings, Inc. ("GECUSH"), which is an indirect, wholly-owned subsidiary of General Electric Company ("GE") and owner of SHEC. Mr. Mathur describes the SHCCF project, including its site, technology, related facilities, operating assumptions and transmission interconnections, as well as the tolling agreement between Seminole and SHEC. He also describes GE's experience in the construction and operation of combined cycle plants and other fossil-fired units.

Jason Peters, Seminole's Portfolio Director (Power), addresses Seminole's capacity solicitations to meet forecasted needs, the request for proposals ("RFP") Seminole conducted to address its need for capacity, the bids Seminole received in response to its RFP, the technical and commercial

screening of such bids in conformance with the requirements of the RFP, and other purchased power and tolling options considered by Seminole.

Alan Taylor, President of Sedway Consulting Inc., who conducted an independent evaluation and review of Seminole's overall RFP evaluation process, confirms that the resource plan selected by Seminole represents the best, least-cost alternative to meet Seminole's projected needs for 2021 and beyond.

David Wagner, Seminole's Portfolio Director (Gas), presents the natural gas supply and transportation plans for SHCCF, as well as the fuel price forecasts used in the analyses that examined the various options for meeting Seminole's capacity needs. He also addresses fuel supply diversity.

Kyle Wood, Seminole's Manager of Load Forecasting and Member Analytics, presents Seminole's load forecast. He also explains how Seminole and its Members implement conservation and DSM measures and why additional conservation and DSM measures are not reasonably available to mitigate the need for SCCF.

ADVERSE CONSEQUENCES OF DENIAL

Q. Would there be any adverse consequences to Seminole and its Members if the Commission does not grant an affirmative determination of need for the SCCF project?

A. Non-approval would mean that Seminole's Members and the Members'end-use member-consumers would be denied the most cost-effective, risk managed power supply solution. Seminole's required reserve margin would fall below the minimum reserve level in 2021. While additional off-system purchases could perhaps be made to fulfill Member power requirements and maintain the target reserve margin, Seminole would not be able to remove a coal unit from service and the costs of the resulting resource plan would be substantially higher. As explained in the testimony of Julia Diazgranados, denial of the SHCCF by itself would result in an NPV revenue requirements impact of $363 million, along with the continuation of service of the coal unit.

Q. Does this conclude your testimony?

A. Yes.

Michael P. Ward II

Experience

Vice President, Strategic Initiatives
2017-Present
SEMINOLE ELECTRIC COOPERATIVE INC.

- Executive management responsibility for identifying, analyzing, developing and implementing strategic opportunities that fulfill Seminole's strategic resource plan.
- Oversee, direct and manage Seminole's self-build combined cycle facility, tolling agreements, purchased power agreements, solar generation, coal unit retirement, headquarters building renovation and back-up control center/business continuity projects.

Director of System Operations **2014-2017**
SEMINOLE ELECTRIC COOPERATIVE INC.

- Managed operations, maintenance and engineering department responsible for all aspects of power systems engineering and energy delivery, including control center operations, planning, NERC compliance, member billing, and substation field operations.

Manager of Maintenance, Midulla Generating Station
2014-2014
SEMINOLE ELECTRIC COOPERATIVE INC.

- Managed Maintenance and Engineering department responsible for all preventative and corrective maintenance, as well as plant modifications.

Plant Engineer and Project Manager
2013-2014
SEMINOLE ELECTRIC COOPERATIVE INC.

- Plant Engineer for Combined Cycle facility.

Submarine Officer
1987-2014
UNITED STATES NAVY

- Progressive assignments on seven different nuclear submarines, up to and including commanding officer of a crew of 152 personnel. Six staff shore assignments with responsibility for national level policy-making, strategic planning, capital and operational budgeting, and expert technical advice.

Education

Bachelors of Science in Electrical Engineering, University of Florida **1994**
Masters of Business Administration, University of Maryland University College **2002**
Certificate in National Security Affairs, Naval War College and National Defense University **2011**

Skills

Previous Top Secret/SCI security clearance
Certified for Command and Supervision of Nuclear Powered Warships
Completed Prospective Commanding Officer course for Naval Nuclear Propulsion
Proficient in Microsoft Office Suite of applications, including Microsoft Project and Visio
Naval Nuclear Engineer

NEED STUDY

Submitted to the Florida Public Service Commission in support of Petitions to Determine Need for Electric Power Plants

December 2017

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1.0 EXECUTIVE SUMMARY

Seminole Electric Cooperative, Inc. ("Seminole") submits this Need Study in support of two proposed natural gas-fired combined cycle ("CC") facilities, including: the Seminole Combined Cycle Facility ("SCCF"), a self-build 1,050 MW (nominal) two-on-one generating facility to be constructed adjacent to the existing Seminole Generation Station ("SGS") site in conjunction with the removal from service of one of the existing SGS coal-fired units; and the Shady Hills Combined Cycle Facility ("SHCCF"), a 573 MW (winter) one-on-one generating facility to be constructed by Shady Hills Energy Center, LLC ("SHEC"), an indirect subsidiary of General Electric Company ("GE"), at the existing Shady Hills power plant site in Pasco County pursuant to a tolling agreement with Seminole. The analyses discussed throughout this Need Study demonstrate that the two combined cycle facilities are needed to meet the electrical demands of Seminole and its Member Cooperatives.

1.1 The Primarily Affected Utilities

Seminole is a not-for-profit rural electric cooperative organized under Chapter 425, Florida Statutes. Seminole is a generation and transmission cooperative that only makes wholesale sales; it does not make retail sales. Seminole's nine members ("Members" or "Member Cooperatives") are also not-for-profit rural electric cooperatives organized under Chapter 425, Florida Statutes, and each serves retail end use member-consumers in Florida. Seminole's Members are: Central Florida Electric Cooperative, Inc., Clay Electric Cooperative, Inc., Glades Electric Cooperative, Inc., Peace River Electric Cooperative, Inc., SECO Energy, Suwannee Valley Electric Cooperative, Inc., Talquin Electric Cooperative, Inc., Tri-County Electric Cooperative, Inc., and Withlacoochee River Electric Cooperative, Inc. Approximately 1.6 million people and businesses in parts of 42 of Florida's 67 counties rely on Seminole and its Member Cooperatives for electricity.

1.2 The Power Plant Siting Act and Need Determination Process

The Florida Electrical Power Plant Siting Act ("PPSA"), Chapter 403, Part II, Florida Statutes, provides a "centrally coordinated, one-stop licensing process" for power plant projects. The PPSA provides a centralized process to ensure that all affected state and local agencies review a project before the Siting Board, consisting of the Governor and Cabinet, takes final action on the site certification application. The Commission's need determination is a critical step in the PPSA certification process. Along with the reports submitted by the Florida Department of Environmental Protection ("DEP") and other agencies, the Commission's need determination allows the Siting Board to balance "the increasing demand for electrical power plants with the broad interests of the public."

Section 403.519(3), Florida Statutes, sets forth the following criteria which the Commission must consider in making need determinations:

- The need for electric system reliability and integrity;
- The need for adequate electricity at a reasonable cost;
- The need for fuel diversity and supply reliability;
- Whether the proposed plant is the most cost-effective alternative available;
- Whether renewable energy sources and technologies, as well as conservation measures, are utilized to the extent reasonably available; and
- Whether there are conservation measures taken by or reasonably available to the applicant or its members which might mitigate the need for the proposed plant.

1.3 The Proposed New Facilities

Seminole has determined that the most cost effective, risk-managed resource plan to meet its projected capacity need is a mix of resources consisting of existing generation resources, PPAs, and the construction of two natural gas-fired combined cycle facilities, including: the self-build 1,050 MW SCCF along with the removal from service of one of the two existing 664 MW SGS coal units; and the 573 MW SHCCF to be constructed, owned and operated by SHEC under a tolling agreement with Seminole.

1.4 Seminole's Need for Generation Capacity

Based on its continuing evaluation of its Member Cooperatives' electricity needs, Seminole projects a need for 901 MW of additional generating capacity by the end of 2021. This projected need results primarily from the expiration of power purchase agreements ("PPAs"), including the expiration of a 150 MW PPA on December 31, 2020, followed by the expiration of two more PPAs totaling 750 MW of winter capacity in May, 2021. Because an additional 300 MW PPA expires the following year, along with load growth, Seminole's projected need increases to 1,265 MW by the end of 2022.

1.5 Major Generating Alternatives

Seminole's Board of Trustees selected the resource plan that includes the SCCF and the SHCCF facilities based on the results of a multi-stage resource planning process. That process included extensive economic analyses of self-build options and multiple power purchase alternatives, including numerous renewable energy proposals, identified during a robust Request for Proposal ("RFP") process, as well as careful consideration of non-economic attributes and risk factors. Seminole's analyses demonstrate that the resource plan containing the SCCF and the tolling agreement with SHEC for the SHCCF is the most cost-effective alternative to meet Seminole's capacity needs and would result in projected net present value ("NPV") savings of approximately $363 million as compared to the next ranked alternative over the study period. The selected resource plan also includes multiple PPAs with significant optionality in terms of available capacity. This provides Seminole a hedge against economic acceleration/downturns or faster/slower load growth rates.

1.6 Non-Generating Alternatives

As a wholesale supplier of electric energy to its Members, Seminole is not directly responsible for demand-side management ("DSM") programs. However, Seminole encourages conservation through its wholesale rate structure, which provides price signals that reflect Seminole's cost of supplying power in aggregate and thereby encourages Members to concentrate their load management efforts on controlling

Seminole's overall system peak. Seminole also assists its Members in the evaluation of potential DSM measures. Despite the DSM savings achieved by Seminole's Members, the need for additional capacity still exists and there is not a reasonable scenario in which sufficient DSM or conservation could be added to avoid the need for additional capacity.

1.7 Adverse Consequences of Denial

Non-approval of the requested need determination would mean that Seminole's Members and the Members' end-use member-consumers would be denied the most cost-effective, risk-managed power supply solution. Seminole's required reserve margin would fall below the minimum reserve level in 2021. While additional off-system purchases could perhaps be made to fulfill Member power requirements and maintain the target reserve margin, Seminole would not be able to remove a coal unit from service and the costs of the resulting resource plan would be substantially higher.

1.8 Conclusion

The analyses and other information described above demonstrate that affirmative need determinations are warranted for the new SCCF and SHCCF projects based on consideration of the relevant factors set forth in section 403.519, Florida Statutes. Due primarily to the expiration of existing PPAs, Seminole will have a need for 901 MW of additional generating capacity by the end of 2021, and that need will grow to 1,265 MW by the end of 2022. Seminole's Board of Trustees selected the resource plan that includes the SCCF and SHCCF based on the results of a rigorous, multi-stage planning process that involved extensive economic analyses of generation alternatives, including numerous power purchase alternatives identified during a robust RFP process, as well as careful consideration of non-economic attributes and risk factors. In recognition of the energy value of solar, the selected resource plan also includes 40 MW from a new solar resource. Seminole and its Members continue to explore additional DSM/conservation measures even though there is no reasonable basis to conclude that such measures could offset Seminole's projected need.

2.0 PURPOSE AND OVERVIEW OF NEED STUDY

Seminole is submitting this Need Study in support of separate petitions for determination of need for the new SCCF and SHCCF pursuant to secton 403.519, Florida Statutes. Rule 25-22.081, Florida Administrative Code, sets forth specific information that each petition for need determination must include to allow the Commission to address the statutory factors. This Need Study is organized as follows to provide the information required for such need determinations by Rule 25-22.081:

- Section 3 provides a general description of the utility or utilities primarily affected, including the load and electrical characteristics, generating capability, and interconnections;
- Section 4 provides a general description of the proposed electrical power plants, including the size, number of units, fuel type and supply modes, the approximate costs, and projected in-service date or dates;
- Section 5 provides a statement of the specific conditions, contingencies or other factors which indicate a need for the proposed electrical power plant including the general time within which the generating units will be needed;
- Section 6 provides a discussion of the major available generating alternatives (including renewable energy sources) which were examined and evaluated in arriving at the decision to pursue the proposed generating units;
- Section 7 provides a discussion of non-generating alternatives; and
- Section 8 provides an evaluation of the adverse consequences which will result if the proposed electrical power plants are not added in the approximate size sought or in the approximate time sought.

3.0 PRIMARILY AFFECTED UTILITIES

3.1 Seminole Electric Cooperative & its Member Cooperatives

Seminole is a not-for-profit rural electric cooperative organized under Chapter 425, Florida Statutes. Seminole is a generation and transmission cooperative that only makes wholesale sales; it does not make retail sales. Seminole's nine Members are also not-for-profit rural electric cooperatives organized under Chapter 425, Florida Statutes, and each serves retail end use member-consumers in Florida. The names and headquarters locations of each of the Member cooperatives, along with the counties which each Member serves, are:

- Central Florida Electric Cooperative, Inc.
  Chiefland, Florida
  Counties: Alachua, Dixie, Gilchrist, Levy, Lafayette, Marion

- Clay Electric Cooperative, Inc.
  Keystone Heights, Florida
  Counties: Alachua, Baker, Bradford, Clay, Columbia, Duval, Gilchrist, Lake, Levy, Marion, Putnam, Suwannee, Union, Volusia

- Glades Electric Cooperative, Inc.
  Moore Haven, Florida
  Counties: Glades, Hendry, Highlands, Okeechobee

- Peace River Electric Cooperative, Inc.
  Wauchula, Florida
  Counties: Brevard, DeSoto, Hardee, Highlands, Hillsborough, Indian River, Manatee, Osceola, Polk, Sarasota

- SECO Energy
  Sumterville, Florida
  Counties: Citrus, Hernando, Lake, Levy, Marion, Pasco, Sumter

- Suwannee Valley Electric Cooperative, Inc.
  Live Oak, Florida
  Counties: Columbia, Hamilton, Lafayette, Suwannee

- Talquin Electric Cooperative, Inc.
  Quincy, Florida
  Counties: Gadsden, Leon, Liberty, Wakulla

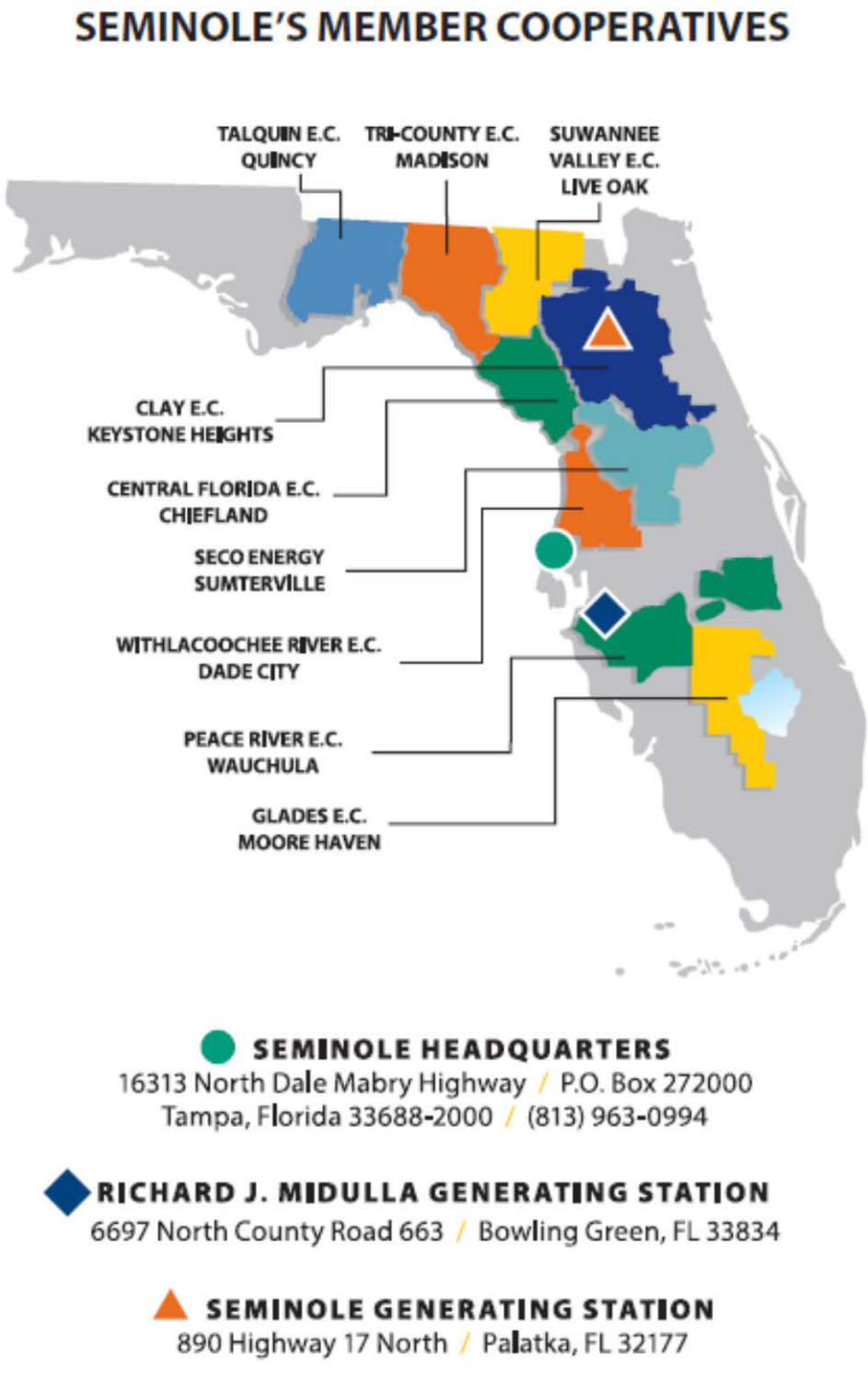
- Tri-County Electric Cooperative, Inc.
  Madison, Florida
  Counties: Dixie, Jefferson, Lafayette, Madison, Taylor

- Withlacoochee River Electric Cooperative, Inc.
  Dade City, Florida
  Counties: Citrus, Hernando, Pasco, Polk, Sumter

Seminole is owned by its Members and governed through a Board of Trustees, and it exists to provide reliable electric service at competitive rates to its Members. Seminole was organized in 1948, but remained relatively inactive until shortly after the 1973 oil embargo. In 1974, Seminole's Board determined that Seminole should develop independent power supplies for its Members. In 1975, each Member entered into a long term "All Requirements" contract with Seminole for the purchase of wholesale power. Under these contracts, each Member purchases from Seminole all of its power requirements for distribution within the State of Florida not otherwise supplied under pre-existing contracts. Four of Seminole's Members had pre-existing contracts with the Southeastern Power Administration, which provides 26 MW of the total capacity required by these Members.

Seminole is one of the largest electric generation and transmission cooperatives in the country. Seminole and its Members serve approximately 1.6 million people and businesses in parts of 42 of Florida's 67 counties. Figure 1 shows the areas of the State serviced by Seminole's nine Member Cooperatives.

Figure 1 Seminole Member Service Areas



3.2 Load and electrical characteristics

Seminole Members serve electricity to primarily-rural areas within 42 counties in the north, central, and south regions of Florida, which differ uniquely in geography, weather, and natural resources. Seminole has historically been a winter-peaking utility and is expected to remain winter-peaking due to the concentration of service territory load in the north/central portion of peninsular Florida.

3.3 Generating Capability

Seminole meets the power supply needs of its Members and their member-consumers with Seminole-owned generation in combination with purchased power or tolling agreements with independent power producers, investor-owned and municipal utilities, and renewable energy providers. As of December 31, 2016, Seminole had total winter capacity resources of approximately 4,700 MW consisting of owned, installed net winter capacity of 2,178 MW and the remaining capacity in firm purchased power. As a result of the RFP process discussed in Section 6, Seminole recently extended its existing Oleander Power PPA through 2021 and entered into a new long-term PPA with Southern Company Services ("SCS") and two new long-term PPAs with Duke Energy Florida ("DEF").

3.3.1 Seminole's Owned/Leased Generation Facilities

Seminole's existing owned or leased generating resources are located at three generating facilities:

- SGS Units 1 and 2 comprise a 1,329 MW (winter) coal-fired power plant located in Putnam County near Palatka, Florida.
- Midulla Generating Station ("MGS") Units 1-3 comprise a 539 MW (winter) gas-fired two-on-one combined cycle plant located in Hardee County, Florida. MGS Units 4-8 comprise a 310 MW (winter) peaking plant consisting of five twin-pack gas turbines. The MGS units all have fuel oil capability.

- The 2.2 MWac (summer) Cooperative Solar facility is located in Hardee County, Florida adjacent to MGS.

Table 1 summarizes Seminole's existing owned generating facilities.

Table 1 Seminole's Existing Owned Generation Facilities

Plant	Unit No.	Location	Unit Type	Fuel		Fuel Transportation		Alt Fuel Days Use	Com In-Svc Date (Mo/Yr)	Expected Retirement (Mo/Yr)	Gen. Max Nameplate (MW)	Net Capability (MW)	
				Pri	Alt	Pri	Alt					Summer	Winter
SGS	1	Putnam County	ST	BIT	N/A	RR	N/A	N/A	02/84	Unk	736	626	664
SGS	2	Putnam County	ST	BIT	N/A	RR	N/A	N/A	12/84	Unk	736	634	665
MGS	1-3	Hardee County	CC	NG	DFO	PL	TK	Unk	01/02	Unk	587	482	539
MGS	4-8	Hardee County	CT	NG	DFO	PL	TK	Unk	12/06	Unk	310	270	310
Schedule Abbreviations:		General		Unk – Unknown N/A – Not applicable									
		Unit Type ST – Steam Turbine CC – Combined Cycle CT – Combustion Turbine PV – Photovoltaic		Fuel Type BIT – Bituminous Coal NG – Natural Gas DFO – Ultra low sulfur diesel Sun – Solar Energy						Fuel Transportation PL – Pipeline RR – Railroad TK – Truck			

3.3.2 Power Purchase Agreements

Seminole uses wholesale market purchases to maintain competitive flexibility in its power supply portfolio. In 2016, approximately 26% of Seminole's energy and 54% of its capacity came from wholesale purchased power. Table 2 summarizes Seminole's purchased power and tolling contracts as of December 31, 2016. As a result of the RFP process discussed in Section 6, Seminole has extended the Oleander PPA through December 31, 2021, and has entered into additional system PPAs for intermediate and peaking power and a new PPA for solar resources. These new agreements are summarized in Table 3.

Table 2 Seminole's Power Purchase Contracts
(as of December 31, 2016)

SUPPLIER	FUEL	MW (WINTER RATINGS)	IN SERVICE DATE	END DATE
Hardee Power Partners	Gas/Oil	445	1/1/2013	12/31/2032
Oleander Power Project	Gas/Oil	546	1/1/2010	5/31/2021
FPL	System	200	6/1/2014	5/31/2021
DEF	System	<1	6/1/1987	-
DEF	System	600	1/1/2014	12/31/2020
DEF	System	150	1/1/2014	12/31/2020
DEF	System	50	6/1/2016	12/31/2018
DEF	System	200-500	6/1/2016	12/31/2024
DEF	System	50-600	1/1/2021	3/31/2027
Lee County Florida	Waste Landfill	55	1/1/2009	12/31/2016
Telogia Power	Biomass	13	7/1/2009	11/30/2023
Seminole Energy, LLC	Landfill Gas	6.2	10/1/2007	3/31/2018
Brevard Energy, LLC	Landfill Gas	9	4/1/2008	3/31/2018
Timberline Energy, LLC	Landfill Gas	1.6	2/1/2008	3/31/2020
Hillsborough County	Waste Landfill	38	3/1/2010	2/28/2025
City of Tampa	Waste Landfill	20	8/1/2011	7/31/2026

Note: Seminole Electric Cooperative may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements.

Table 3 Seminole's New Power Purchase Contracts

SUPPLIER	FUEL	MW	IN SERVICE DATE	END DATE
Shady Hills Energy Center LLC	Gas	575*	12/1/2021	11/30/2051
Oleander Power Project	Gas/Oil	546*	6/1/2021	12/31/2021
Southern Company Services	System	100-150*	6/1/2021	5/31/2026
DEF	System (IM)	50-400*	1/1/2021	12/31/2030
DEF	System (Peaking)	50-400*	1/1/2021	12/31/2035
Tillman Solar Center LLC	Solar/PV	40**	6/1/2021	5/31/2041

*Winter ratings
**Summer rating

3.3.3 Renewable Resources

Seminole's generation portfolio includes a mix of technologies and fuel types, including renewable energy. Seminole currently receives 87.8 MW from renewable

energy sources via PPAs, including 13 MW from Biomass, 16.8 MW from landfill gas-to-energy, and 58 MW from waste-to-energy. Additionally, as a result of the RFP process explained in Section 6, Seminole has entered into a new PPA for 40 MWac of solar capacity beginning in January, 2021. Seminole may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements.

In addition to renewable power purchases, Seminole operates a 2.2 MWac (summer) Cooperative Solar facility located in Hardee County, Florida. The Cooperative Solar project took shape in 2014, as the price of solar technology was declining and the abundance of government incentives for the industry provided the path to incorporate large-scale solar projects in Florida. Seminole's Members' end-use member-consumers were interested in utilizing solar power, but wanted to do so without large, personal financial commitments. Cooperative Solar provided the opportunity for Members and their member-consumers to participate and the project provides ongoing value to Seminole, as well. The information learned from designing and operating this solar facility will help inform future decisions as Seminole evaluates adding renewable resources to its energy mix.

Seminole's Members also operate small biomass facilities (1.6 MW) and wind turbines (7.4 kW), as well as small photovoltaic facilities connected to their administration buildings. Several Members are considering future community solar projects.

3.4 Transmission Interconnections

Seminole's existing transmission facilities consist of 254 circuit miles of 230 kV and 127 circuit miles of 69 kV lines. However, Seminole's transmission facilities have limited direct interconnections with Seminole's Members' load. Seminole is therefore primarily a transmission dependent utility ("TDU") that relies mainly upon the transmission systems of DEF and Florida Power & Light Company ("FPL") for the delivery of Seminole's owned and/or contracted power supply resources to Seminole's

Members' load. Seminole is a Network Integration Transmission Service ("NITS") customer of DEF and FPL under each of their respective Open Access Transmission Tariffs ("OATT"). Approximately 76%, or 2,294 MW, (based on 2016-17 actual winter net firm peak demand) of Seminole's Members' load is served by DEF's transmission system, approximately 16%, or 483 MW, is served by FPL's transmission system, and approximately 8%, or 241 MW, is served directly by Seminole's transmission system.

Seminole's facilities are interconnected to Florida's electric grid at nineteen (19) 230 kV transmission interconnections with the entities shown in Table 4.

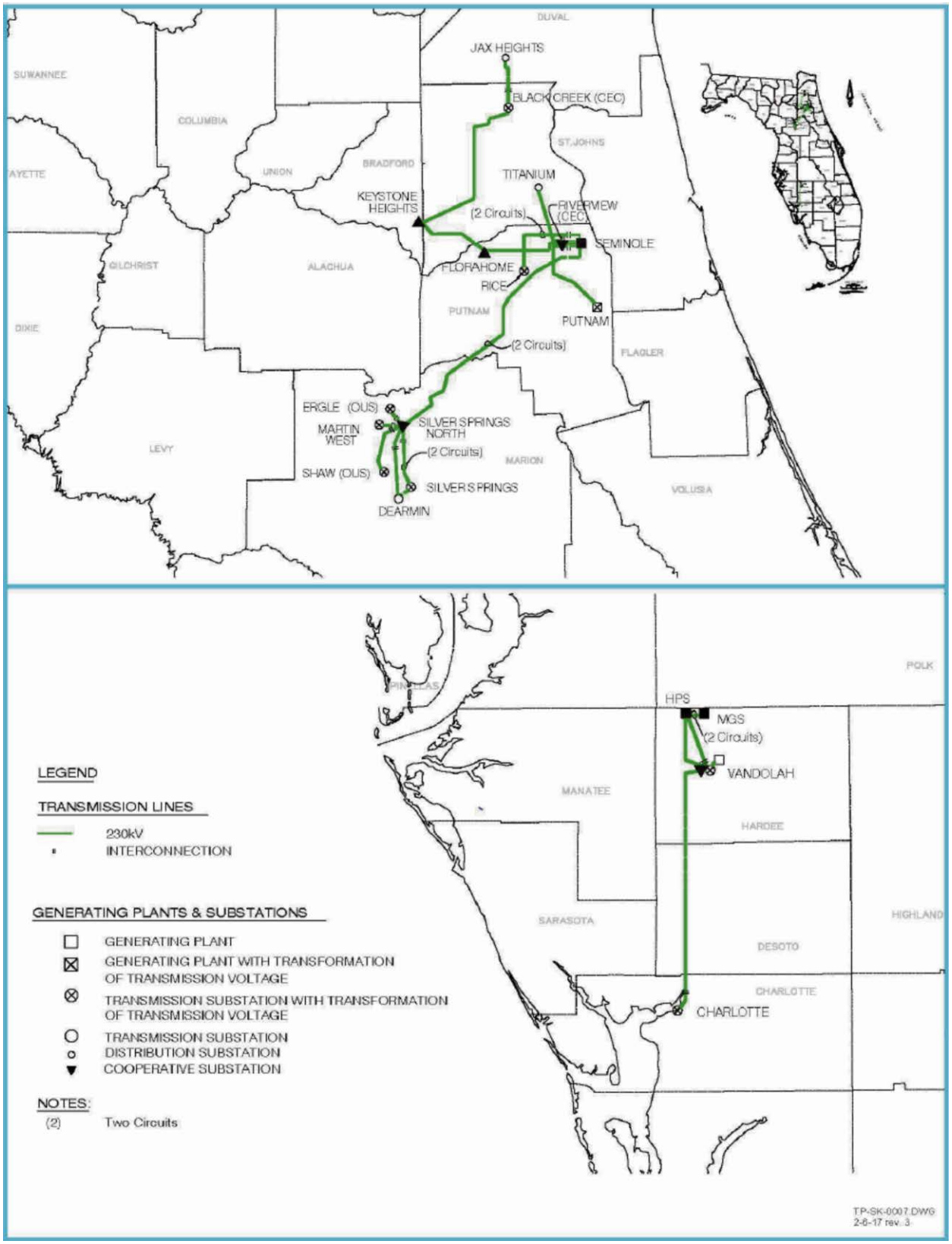
Table 4 Seminole's Transmission Interconnections

Entity	Voltage (kV)	Number of Interconnections
Florida Power & Light	230	5
Duke Energy Florida	230	7
JEA	230	1
City of Ocala (OUS)	230	2
Tampa Electric Company	230	1
Invenergy, LLC	230	3

Note: This table describes physical facility interconnections, which do not necessarily constitute contractual interconnections for purposes of transmission service or interconnections between balancing areas.

Figure 2 depicts Seminole's 230 kV transmission lines, including its interconnections with those entities identified in Table 4.

Figure 2 Seminole's Bulk Transmission Facilities



4.0 DESCRIPTION OF THE PROPOSED GENERATING UNITS

4.1 The Proposed Seminole Combined Cycle Facility ("SCCF")

The SCCF involves construction and operation of a new state-of-the-art natural gas-fired "two-on-one" combined cycle generating facility and onsite associated facilities on an approximately 32 acre parcel adjacent to the existing SGS plant. The SCCF will have a nominal net generating capacity of 1,050 MW and will be fired on natural gas only. The SGS site currently contains two 664 MW (net winter) coal-fired steam electric generating units (SGS Units 1 and 2) and associated facilities. One of the two existing SGS Units will be taken out of service coincident with the declared commercial operation of the SCCF. Figure 3 provides a conceptual rendering of the SCCF.

Figure 3 Conceptual Rendering of SCCF
(looking southwest to northeast)

4.1.1 The SGS Site

The SGS site is located 5.25 miles north-northeast of Palatka, Florida. As shown in Figure 4, the proposed SCCF site area is located southeast of the existing plant and southwest of the existing hyperbolic cooling towers.

Figure 4 Proposed Location of SCCF

4.1.2 Proposed Combined Cycle Technology

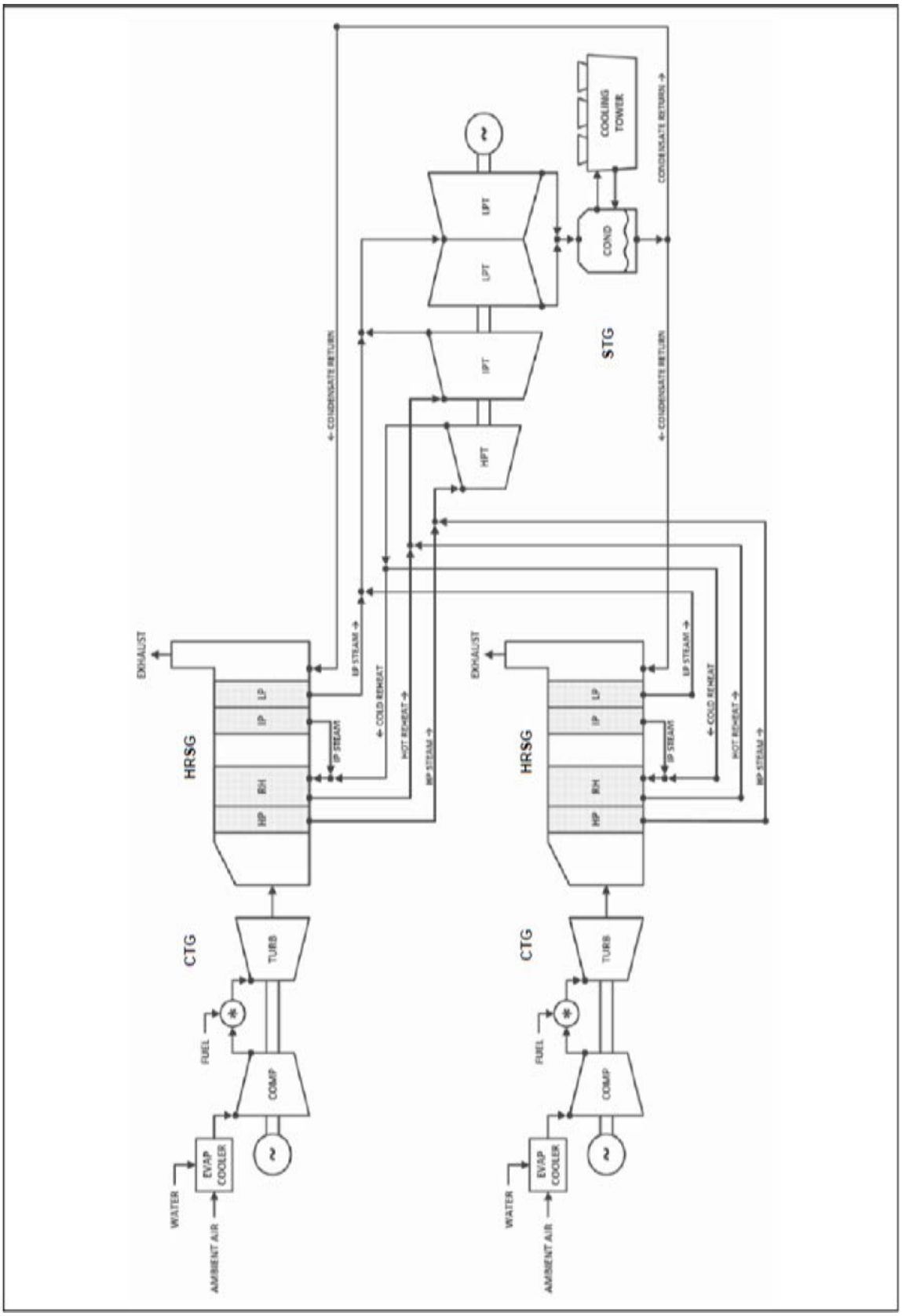
The SCCF will consist of two combustion turbine generators ("CTG"), two heat recovery steam generators ("HRSGs"), and one steam turbine generator ("STG"). Seminole has selected the advanced, large-frame GE Model 7HA.02 CTG for the SCCF. When operated in combined cycle mode, these large CTGs create the most efficient electric generating technology currently available for utility-scale power plants. These combined cycle plants can achieve an efficiency of up to 60 percent, compared to CTGs alone in simple-cycle mode at 35 to 38 percent and coal-fired steam plants at 32 to 42 percent. When a CTG is operated alone in simple-cycle mode, the hot exhaust gases from the CTG are released to the atmosphere. In combined cycle configuration, the hot exhaust gases from the CTG are used to produce steam in the HRSG, and the steam is used to drive an STG to generate additional electricity. Thus, a combined cycle power plant can generate 25 to 30 percent more electricity without burning more fuel or producing additional air emissions.

The facility is expected to have a "gross nominal" output of 1,183 MW and a "net nominal" output of 1,050 MW which it is anticipated to achieve across the entire range of ambient conditions typically experienced in Palatka, Florida. However, the facility will have significant flexibility in terms of its operational characteristics. During peak load periods, the SCCF will be able to fire supplemental natural gas in duct burners in the HRSGs to get additional generation out of the STG.

The 7HA.02 gas turbines have an extended "turndown" capability which will allow them to meet their required emissions levels while firing the turbines down to as low as 25 percent of their full-fire levels. This low turn-down capability is valuable as it will allow the SCCF to remain operational during low load periods typically experienced at night and avoid the thermal stresses, wear, and additional emissions associated with a shut-down / start-up cycle.

Figure 5 presents a conceptual schematic of a two-on-one combined cycle unit.

Figure 5 Schematic of Two-on-One Combined Cycle Unit



4.1.3 Existing Infrastructure

The SCCF will utilize existing infrastructure, including the cooling water supply and wastewater discharge pipelines to the St. Johns River and the intake and discharge structures in the river. The new electrical switchyard for the SCCF will be interconnected with the existing SGS switchyard and electricity generated by the SCCF will be transmitted to the Florida transmission network through the existing 230 kV transmission lines running west from the SGS site.

4.1.4 Associated Facilities

The SCCF also includes other associated facilities, such as electrical equipment enclosures, a mechanical draft cooling tower, exhaust stacks, an administration building that will include a control room and maintenance area, a warehouse, parking, fuel gas regulation station and heaters, diesel fired emergency fire water pump, aboveground service/fire water storage tank, aqueous ammonia tanks, a switchyard expansion, step-up transformers, potable water and sanitary wastewater treatment facilities, a stormwater management system/stormwater ponds, piping tie-ins, and other facilities necessary to integrate with existing intake and discharge water infrastructure.

4.1.5 Air Emission Controls

The SCCF will be designed with technologies to minimize air emissions. The two CTGs will be equipped with dry low-NOx combustors to control air emissions of nitrogen oxides ("NOx"). The HRSGs will be equipped with selective catalytic reduction ("SCR") systems to further reduce NOx emissions. Emissions of carbon monoxide ("CO") and volatile organic compounds ("VOCs") will be limited through use of oxidation catalyst systems. Emissions of other regulated air pollutants, such as sulfur dioxide ("SO2") and particulate matter (PM), will be controlled through use of pipeline-quality natural gas and good combustion practices. In addition, the SCCF will minimize greenhouse gas ("GHG") emissions through the use of clean-burning natural gas along with the highly efficient, combined cycle electric generating technology.

4.1.6 Water Use and Supply

The proposed SCCF is also designed to minimize the use of water. The condenser cooling system will be a closed-loop system consisting of a 16 cell mechanical draft cooling tower. Cooling tower makeup water for the SCCF will be provided from the St. Johns River through an interconnection with the existing water intake pipeline and structure. No in-water construction activities are expected for the SCCF.

Higher quality freshwater needs for plant service and potable uses for the SCCF will be provided through groundwater withdrawals from new wells within the SCCF area. Plant service water uses will include steam cycle makeup water, equipment wash water, pump seals, and emergency fire water. The service water will be filtered and treated in trailer-mounted demineralization systems, which will be regenerated offsite to avoid the need for onsite disposal of treatment wastewaters. Potable water for drinking, safety showers, eyewash stations, and other sanitary uses will be treated in a new potable water treatment facility within the SCCF site area.

Sanitary wastewater will be treated in a packaged treatment facility. The treated sanitary wastewater and other treated low-volume wastewaters will be collected in a wastewater collection sump and discharged in combination with the cooling tower blowdown through the existing water discharge pipeline and structure to the St. Johns River, similar to existing SGS operations. Any solids produced by the treatment system will be disposed offsite at the existing SGS landfill.

4.1.7 Stormwater Management

The stormwater management system for the SCCF is designed to handle and treat the 25 year, 24 hour storm event and is designed to meet all federal, state, regional, and local requirements. Potential contact stormwater runoff from the power block and equipment areas will be collected and treated through an oil/water separator and routed to the wastewater collection sump prior to discharge to the St. Johns River. Noncontact stormwater runoff from the facility area will be collected and routed to a stormwater retention pond. During construction, stormwater runoff from the construction

laydown and parking areas will also be collected and treated in swales and ponds, and best management practices will be utilized to minimize erosion from the disturbed areas during construction activities.

4.1.8 Fuel Type & Supply

The SCCF will burn natural gas as its fuel. At peak operation, including duct-firing, the SCCF will require approximately 173,000 million British thermal units ("MMBtu") of natural gas per day.

The natural gas supply for the SCCF will be purchased as a part of Seminole's procurement of its gas portfolio needs. Seminole's gas procurement process diversifies the timing and duration of such gas purchases. For example, when planning for the upcoming calendar year, Seminole will purchase a portion of its gas supply on an annual and/or seasonal basis, purchase incremental supply on a month-ahead basis, and then procure any remaining supply needs on a daily basis. Such supply is typically purchased at market based index prices. In addition, Seminole may contract for gas supply on a longer-term basis with a duration of up to five years or longer based on its projected needs and available supply.

Natural gas supply will be transported from the Florida Gas Transmission ("FGT") mainline to the SCCF via a new approximately 21-mile pipeline lateral that will be constructed, owned and operated by a third-party. Seminole will contract for firm transportation service on the pipeline lateral from FGT to the SCCF. This third-party will be an authorized natural gas transmission company in Florida as defined in section 368.103(4), Florida Statutes.

Seminole is finalizing negotiations with multiple entities for natural gas transportation service and/or natural gas supply for delivery to Putnam County, Florida and ultimately to the SCCF via the new gas pipeline lateral. These arrangements provide for up to 187,000 MMBtus per day of gas transportation rights to the lateral serving the SCCF. Some of this is existing capacity that will be re-purposed for the SCCF, some is existing capacity that will require additional facilities on FGT's system to provide the

incremental transportation capacity to Putnam County, Florida, and some of the capacity will be new transportation service into Florida enabled by additional facilities on existing pipeline(s).

Seminole is finalizing its contracts for adequate gas transportation capacity that will provide a firm transportation path from geographic locations that are expected to have adequate natural gas supply available over the horizon of the Need Study. More specifically, it is anticipated that reliable gas supply from various production basins will continue to be transported to the areas at which Seminole will have transportation rights to purchase gas supply.

4.1.9 Transmission Interconnections

The transmission interconnection process involves a System Impact Study that identifies potential impacts and mitigation plans for addressing such impacts on Seminole's transmission system as well as neighboring systems. The analysis is performed by Seminole in coordination with the Florida Reliability Coordinating Council ("FRCC") through the FRCC's Reliability Evaluation Process for Generator and Transmission Service Requests. The System Impact Study incorporates the use of steady-state load flow, short circuit, and stability analysis using industry standard tools and software programs to ensure that Seminole's transmission system operates reliably over a broad spectrum of system conditions and following a wide range of probable planning and extreme events.

In general, Seminole's transmission planning process includes the single contingency loss of any transmission circuit, transformer, bus section, shunt device, internal breaker fault, or generator. Such analysis is performed for multiple load levels, including but not limited to peak, off-peak, and high-import (Southern to Florida transfers) for select summer and winter conditions as modeled and made available by the FRCC. Additional analysis is performed to determine system response to credible, less probable extreme events, to assure the system meets Seminole, FRCC, and North American Electric Reliability Corporation ("NERC") transmission planning criteria. The

additional analysis includes the loss of multiple elements, including the loss of multiple transmission circuits, transformers, generators, or the combination of each. Seminole utilizes planned operational system adjustments, corrective action plans which can include projects that require construction of new facilities or upgrades to existing facilities, and load loss if permissible by Seminole, FRCC, and NERC transmission planning reliability criteria.

Seminole's transmission planning process also includes the evaluation of multiple fault types at various locations, consistent with the criteria of FRCC and NERC, to understand the magnitude of the resultant fault current that may be experienced by Seminole's interrupting devices and to ensure that such magnitude is safely mitigated. Lastly, Seminole's transmission interconnection process evaluates critical clearing time at multiple load levels to ensure that the system is able to respond to planning and extreme events to not compromise the existing transmission system and to ensure the system remains adequate, reliable, and secure.

Typically, new generation interconnections, such as for the SCCF, are evaluated for both interconnection and deliverability simultaneously. However, because Seminole is a TDU within the FRCC region, Seminole will be required to submit separate Transmission Service Requests ("TSR") to DEF and FPL after completion of the interconnection analyses, in accordance with their respective OATTs, for the deliverability of the SCCF to Seminole's Members' load in the respective control areas in order to determine transmission impacts on the systems of FPL and DEF, in addition to any impacts on neighboring systems that may result due to the SCCF. In order to request a TSR from DEF and FPL on their respective Open Access Same Time Information Systems ("OASIS"), via the designation of network resource ("DNR") process, Seminole is required to attest it either owns the resource, has committed to purchase generation pursuant to an executed contract, or has committed to purchase generation where execution of a contract is contingent upon the availability of transmission service, in accordance with FERC pro-forma OATT. Thus, Seminole could not submit the TSRs in advance of the interconnection process in order to obtain estimates of the costs for

delivery of the SCCF on DEF's or FPL's systems. Consequently, when evaluating alternatives to meet its projected 2021 need, Seminole did not have alternatives to evaluate deliverability of the resource into the respective areas to determine transmission impacts on DEF, FPL and neighboring systems. Instead, Seminole was limited to evaluating the SCCF interconnection for short circuit and stability impacts, including limited steady-state load flow analysis across Seminole's own transmission system emanating from the SGS Switchyard.

In late 2016, in order to evaluate the deliverability of the SCCF with a complete steady-state load flow analysis, Seminole and the members of the FRCC Transmission Technical Subcommittee ("TTS") agreed to perform a "quasi" study to evaluate the impacts of interconnection and deliverability simultaneously, with the recognition that deliverability would need to be studied again once TSRs were submitted after the completion of the interconnection process. In order to model the deliverability of the SCCF, the power output was modeled as being delivered to the DEF control area for ultimate delivery to Seminole's Members' load in DEF's area. The "quasi" study for deliverability of the SCCF included the assumption that the two existing SGS units, Unit 1 and Unit 2, were also running at full output in addition to the SCCF.

Seminole's original interconnection evaluation of the SCCF identified the required expansion of the existing SGS Switchyard, including the addition of ten (10) new 230 kV circuit breakers and associated relay protection, and twenty (20) new circuit breaker disconnect switches. Additionally, the FRCC deliverability steady-state load flow results identified the potential need for eight upgrade projects. However, the initial FRCC deliverability study assumed that both SGS unit 1 and unit 2 were at full output in addition to the SCCF, resulting in an aggregate net output emanating from the SGS Switchyard. As Seminole performed its economic analyses for this Need Study, the study assumptions changed to include the removal from service of one existing SGS unit. This resulted in a lower net incremental difference of 484 MW from the existing installed capacity. This change significantly reduces the magnitude of potential

overloads associated with four of the projects originally identified, leaving only three required to be evaluated further during the TSR process.

4.1.10 Approximate Capital Costs

The estimated capital cost of the SCCF is approximately $727 million. As summarized in Table 5, this estimate includes plant structures, equipment, construction, interest during construction, and other owner's costs.

Table 5 SCCF Capital Cost Estimate

Equipment and Interconnection	$220,000,000
Development and EPC Contract	$381,000,000
Other Owner's Costs and Contingency	$ 63,000,000
Interest During Construction	$ 45,000,000
Financing	$ 1,000,000
Insurance	$ 17,000,000
TOTAL	$727,000,000

4.1.11 Construction Schedule & Projected In-Service Date

Construction activities for the SCCF are scheduled to begin in mid to late 2019 or early 2020, with targeted commercial operation approximately 36 months later. Seminole currently projects an in-service date of December 1, 2022.

4.2 PROPOSED SHADY HILLS COMBINED CYCLE FACILITY

The new SHCCF will include a new state-of-the-art natural gas-fired 573 MW (winter), one-on-one, combined cycle generating unit and onsite associated facilities. The SHCCF will be designed, constructed, owned and operated by SHEC on a portion of the existing Shady Hills power plant site located in Shady Hills, Florida, approximately 30 miles north of Tampa, Florida. A new generator tie-line will be constructed as off-site facilities required to connect the SHCCF to the DEF power grid.

The SHCCF will sell its electric capacity, energy and ancillary services to Seminole pursuant to a tolling agreement. SHEC is a wholly-owned, indirect subsidiary of GE Capital US Holdings, Inc. ("GECUSH"), which is in turn a wholly-owned, indirect subsidiary of GE. GE Energy Financial Services ("GE EFS"), a business unit of GECUSH, will design, construct, own and operate SHEC. GE EFS has over 35 years of experience managing energy assets through multiple economic cycles, and a global portfolio that spans conventional and renewable power, and oil and gas infrastructure projects. GE EFS invests globally across the capital spectrum in essential, long-lived, and capital-intensive energy assets that meet the world's energy needs.

4.2.1 Proposed CC Technology

The SHCCF will consist of one CTG, one HRSG, and one STG, and one generator GSU. The CTG will be the advanced, large-frame GE Model 7HA.02.

4.2.2 Existing Infrastructure

The SHCCF will be located adjacent to the existing Shady Hills power plant, a three-unit simple cycle power plant using GE 7F-class technology, that is owned by Shady Hills Power Company, L.L.C. ("SHPC"), which is also a wholly-owned, indirect subsidiary of GECUSH. The new combustion turbine, steam turbine and heat recovery steam generator will be installed to the east of the existing power plant on land currently controlled by SHPC.

4.2.3 Other Facilities

Other facilities to be constructed include an approximately 1 mile generator tie-line to a new DEF substation, to be designated Hudson North, that will connect the SHCCF to the DEF 230kV high voltage transmission grid in Pasco County, Florida. Additional systems to connect the SHCCF to the Pasco County Master Reuse System, and water and wastewater treatment systems to enable use of reclaimed water, including a zero-liquid discharge ("ZLD") system will also be deployed. A new gas metering station will be provided to connect to the existing gas lateral owned by FGT to the SHCCF.

4.2.4 Air Emission Controls

The SHCCF will be designed with technologies to minimize air emissions. The CTG will be equipped with dry low-NOx combustors to control NOx emissions. The HRSG will be equipped with a SCR system, to further reduce NOx emissions. Emissions of other regulated air pollutants (SO2 and PM) will be controlled through use of pipeline-quality natural gas as the only fuel fired in the CTG, HRSG, and dew point fuel heaters, and good combustion practices. In addition, the new unit will minimize GHG emissions through the use of clean-burning natural gas along with the highly efficient, combined cycle electric generating technology.

4.2.5 Water Use & Supply

Process water for the SHCCF (cooling water, demineralized water, and service water) will be sourced in the form of wastewater treatment effluent from Pasco County's Master Reuse System, of which the Shady Hills Wastewater Treatment Plant is adjacent to the SHPC site. In addition, supplemental sources may be utilized on an emergency basis in the event reclaimed or treated wastewater is not available. An onsite water treatment system will reduce the concentrations of calcium, magnesium, alkalinity, silica and suspended solids by adding hydrated lime, soda ash, ferric chloride and polymer to reduce these constituents in clarifiers. The onsite water treatment system will also include granular media filters, ultrafiltration trains and reverse osmosis ("RO") trains. Finally,

RO reject and other concentrated process wastewater streams will be treated in brine concentrators and crystallizers. These treatment processes, and the reuse of process wastewater around the site, will be used to achieve zero liquid discharge from the site. The ZLD system will generate a solid waste byproduct that will be disposed offsite.

4.2.6 Stormwater Management

A new stormwater retention system will be provided to accommodate storm water collection, treatment, storage, and discharge from the SHCCF site.

4.2.7 Fuel Type & Supply

The SHCCF will burn only natural gas as its fuel. At peak operation, including duct-firing, the new unit will require approximately 89,000 MMBtus of natural gas per day. Seminole will be responsible for the procurement and delivery of natural gas to the SHCCF. Seminole will purchase the natural gas supply for the new unit as part of its natural gas portfolio procurement program, as discussed in Section 4.1.7 above. Natural gas supply will be transported to the SHCCF via the existing FGT pipeline system. A new interconnection with FGT will be constructed to supply fuel to the SHCCF.

Seminole is finalizing negotiations with multiple entities for natural gas transportation service and/or natural gas supply for delivery to various Seminole owned and purchased power resources, including the SHCCF. Seminole anticipates that these arrangements, combined with Seminole's existing gas transportation capacity, will provide for up to 130,000 MMBtus per day of gas transportation delivery rights to the SHCCF. Part of this transportation service will come from existing Seminole capacity that will be re-purposed for the SHCCF and some transportation will be through existing capacity on the FGT system.

Seminole is finalizing its contracts for gas transportation capacity that will provide a firm transportation path from geographic locations that are expected to have adequate natural gas supply available over the horizon of the Need Study. It is anticipated that

reliable gas supply from various production basins will continue to be transported to the areas at which Seminole will have transportation rights to purchase gas supply.

4.2.8 Transmission Interconnections

The SHCCF will be interconnected to the DEF transmission system via a planned Hudson North Switching Station. GE EFS has submitted a request for Network Resource Interconnection Service through DEF's OATT process. In 2016, DEF completed a System Impact Study and a Facilities Study to identify the necessary transmission improvements to integrate the SHCCF into the DEF transmission system.

4.2.9 Tolling Agreement

SHEC and Seminole have entered into a tolling agreement, which has a term of 30-years from the anticipated commercial operation date on December 1, 2021. Under the tolling agreement, Seminole will have the right to schedule the dispatch of the SHCCF, provide fuel for such scheduled operation, and receive the power produced. The terms of the tolling agreement provide Seminole with security of power supply at a competitive price for 30 years.

4.2.10 Construction Schedule & Projected In-Service Date

Construction activities for the SHCCF are scheduled to begin in mid 2019, with targeted commercial operation approximately 30 months later. The tolling agreement calls for an in-service date of December 1, 2021.

5.0 THE NEED FOR PROPOSED GENERATING UNITS

5.1 Overview of Need Assessment

Seminole's power supply planning process begins with the development of its nine Members' load forecasts, which are aggregated to represent the Seminole load forecast. The aggregated peak demand forecasts are used to determine Member capacity requirements and an additional 15 percent of demand is added to satisfy Seminole's Reserve Margin requirement. A gap analysis is then used to identify deficiencies between forecasted requirements and current available capacity. When a deficiency is identified, Seminole evaluates all available purchased power, acquisition, and self-build alternatives to establish a portfolio that provides a cost-effective, risk-managed, and reliable generation mix to meet the needs of Seminole's Members.

5.2 The Load Forecast

Seminole's load forecast is an annual assessment of a range of information influencing electricity demand and energy growth in the nine-Member system. Seminole and its Members coordinate throughout the year to discuss forecast assumptions, past performance and ongoing developments. Each Member service territory is forecasted individually based on the unique growth characteristics of the region. The Seminole-system forecast is the aggregate of the Member system forecasts. Seminole's peak demand is the aggregate of all Member demands that maximizes the peak of the system.

Seminole produces a load forecast study which is sumitted annually to the Rural Utilities Service ("RUS") for approval. Seminole, its Members, and the RUS have consistently relied on Seminole's forecasts as the basis for power supply planning, rate development, and financial planning. The most recent load forecast study was approved by the RUS in October 2017.

5.2.1 Consumer Base

The combined service area of Seminole Members is primarily rural and extends into 42 of Florida's 67 counties. Seminole Members provide electricity to over 763,000

member-consumers, serving a population of approximately 1.6 million people and businesses. The combined service area encompasses a variety of geographic and weather conditions, as well as a diverse mix of economic activity and demographic characteristics.

The Members' member-consumer mix is approximately 89% residential, 10% commercial/industrial, and 1% "other." Residential member-consumers represent approximately 68% of total energy sales, with commercial/industrial sales representing 31%, and "other" representing 1% of sales. The commercial sector is primarily small to medium sized retail businesses, while the industrial sector is primarily manufacturing, mining and forestry. The "other" class consists of irrigation, street and highway lighting, public buildings, and sales for resale.

5.2.2 Load Forecast Methodology & Assumptions

Seminole adheres to generally accepted load forecasting methodologies currently employed in the electric utility industry. Energy and demand is forecasted by Member-system total and the Seminole forecast is the aggregate of all Member forecasts.

Model inputs and assumptions are collected from Members, government agencies, universities, and other third party providers. The primary resource for forecasting load growth is population and Seminole primarily relies on the University of Florida's Bureau of Economic and Business Research for population forecasts. Additional economic and demographic data employed in the forecast models are collected from Moody's Analytics, Inc. Weather data is collected from AccuWeather for 25 stations and normalized weather assumptions are based on 30 years of historical observations. Seminole implements statistically adjusted end-use methods to reflect historical and forecasted trends in appliance stock saturation and efficiency for all rate class sectors.

5.2.3 Energy and Demand Models

Seminole forecasts monthly energy sales at the Member-total and Member-rate class level with econometric models. Delivery point billing load and Member-rate class

sales to end-use member-consumers grossed up for distribution losses are trained with a variety of explanatory variables in order to estimate future growth.

Maximum demand by Member by month and by season are modeled using econometric models. Winter seasonal peak models regress the highest peak during November through March of each year against contemporaneous explanatory variables. Summer seasonal peak models regress the highest peak from April through September of each year against contemporaneous explanatory variables. Seasonal peak forecasts replace monthly model forecast results for the month each seasonal peak is most likely to occur.

Seminole's maximum demand is the aggregate of the one-hour simultaneous demands of all Members that maximizes the peak of the system by month. Forecasts of Seminole maximum demand are derived by applying coincident factors to Member-maximum demand forecasts. Member demand coincident with Seminole represents Seminole's planning capacity.

5.2.4 Historical Trends and Forecast Results

Tables 6 through 13 provide Seminole's history and forecast of number of consumers, usage-per consumer and end-use sales by rate class and in total. Tables 14 and 15 provide historical and forecasted net energy for load, summer peak demand, and winter peak demand. These figures update the projections presented in Seminole's 2017 Ten Year Site Plan, which is provided as Appendix A to this Need Study. For comparison purposes, these tables are presented with and without Lee County Electric Cooperative ("LCEC") included in historical data. Prior to 2014, Seminole Electric Cooperative was a ten-Member system, which included LCEC. Tables 6 through 15 also include five and ten-year historical and forecasted average annual growth rates ("AAGR").

Seminole also prepared "high" and "low" load forecasts for use in sensivity analyses as part of the economic evaluations discussed in Section 6.5 below. These "high" and "low" load forecasts are also provided in Tables 14 and 15.

Table 6

Residential Consumers & Sales

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	803,957	-	-	14,235	-	-	11,444	-	-
2008	808,926	*4,969*	*0.6*	13,727	*-508*	*-3.6*	11,104	*-340*	*-3.0*
2009	811,767	*2,841*	*0.4*	13,912	*185*	*1.4*	11,293	*190*	*1.7*
2010	761,993	*-49,774*	*-6.1*	14,920	*1,008*	*7.2*	11,369	*75*	*0.7*
2011	765,279	*3,286*	*0.4*	13,605	*-1,315*	*-8.8*	10,412	*-957*	*-8.4*
2012	769,591	*4,312*	*0.6*	12,967	*-638*	*-4.7*	9,979	*-433*	*-4.2*
2013	777,493	*7,902*	*1.0*	12,885	*-82*	*-0.6*	10,018	*39*	*0.4*
2014	662,626	*-114,867*	*-14.8*	13,293	*408*	*3.2*	8,808	*-1,210*	*-12.1*
2015	673,215	*10,589*	*1.6*	13,470	*177*	*1.3*	9,068	*260*	*3.0*
2016	683,672	*10,458*	*1.6*	13,618	*149*	*1.1*	9,310	*242*	*2.7*
Forecast									
2017	692,985	*9,313*	*1.4*	13,034	*-585*	*-4.3*	9,032	*-278*	*-3.0*
2018	703,726	*10,741*	*1.5*	13,287	*253*	*1.9*	9,351	*318*	*3.5*
2019	715,007	*11,281*	*1.6*	13,283	*-4*	*0.0*	9,497	*147*	*1.6*
2020	726,600	*11,593*	*1.6*	13,120	*-162*	*-1.2*	9,533	*36*	*0.4*
2021	737,810	*11,209*	*1.5*	13,047	*-73*	*-0.6*	9,626	*93*	*1.0*
2022	748,714	*10,904*	*1.5*	13,031	*-16*	*-0.1*	9,757	*130*	*1.4*
2023	759,586	*10,872*	*1.5*	13,033	*2*	*0.0*	9,900	*143*	*1.5*
2024	770,385	*10,800*	*1.4*	13,029	*-5*	*0.0*	10,037	*137*	*1.4*
2025	780,806	*10,420*	*1.4*	13,018	*-11*	*-0.1*	10,164	*127*	*1.3*
2026	790,745	*9,939*	*1.3*	13,023	*5*	*0.0*	10,298	*134*	*1.3*
2027	800,299	*9,554*	*1.2*	13,037	*14*	*0.1*	10,433	*136*	*1.3*
AAGR '07-'16			*-1.8*			*-0.5*			*-2.3*
AAGR '12-'16			*-2.9*			*1.2*			*-1.7*
AAGR '18-'22			*1.6*			*-0.5*			*1.1*
AAGR '18-'27			*1.4*			*-0.2*			*1.2*

Note: Estimated-Actual data through February 2017

Table 7

Residential Consumers & Sales

Excluding Lee County Electric Cooperative

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	627,934	-	-	14,329	-	-	8,998	-	-
2008	633,384	*5,450*	*0.9*	13,871	*-457*	*-3.2*	8,786	*-212*	*-2.4*
2009	635,862	*2,478*	*0.4*	14,043	*171*	*1.2*	8,929	*143*	*1.6*
2010	639,640	*3,778*	*0.6*	15,147	*1,105*	*7.9*	9,689	*760*	*8.5*
2011	642,853	*3,214*	*0.5*	13,653	*-1,494*	*-9.9*	8,777	*-912*	*-9.4*
2012	646,830	*3,976*	*0.6*	13,021	*-632*	*-4.6*	8,423	*-354*	*-4.0*
2013	653,820	*6,990*	*1.1*	12,929	*-93*	*-0.7*	8,453	*30*	*0.4*
2014	662,626	*8,806*	*1.3*	13,293	*364*	*2.8*	8,808	*355*	*4.2*
2015	673,215	*10,589*	*1.6*	13,470	*177*	*1.3*	9,068	*260*	*3.0*
2016	683,672	*10,458*	*1.6*	13,618	*149*	*1.1*	9,310	*242*	*2.7*
Forecast									
2017	692,985	*9,313*	*1.4*	13,034	*-585*	*-4.3*	9,032	*-278*	*-3.0*
2018	703,726	*10,741*	*1.5*	13,287	*253*	*1.9*	9,351	*318*	*3.5*
2019	715,007	*11,281*	*1.6*	13,283	*-4*	*0.0*	9,497	*147*	*1.6*
2020	726,600	*11,593*	*1.6*	13,120	*-162*	*-1.2*	9,533	*36*	*0.4*
2021	737,810	*11,209*	*1.5*	13,047	*-73*	*-0.6*	9,626	*93*	*1.0*
2022	748,714	*10,904*	*1.5*	13,031	*-16*	*-0.1*	9,757	*130*	*1.4*
2023	759,586	*10,872*	*1.5*	13,033	*2*	*0.0*	9,900	*143*	*1.5*
2024	770,385	*10,800*	*1.4*	13,029	*-5*	*0.0*	10,037	*137*	*1.4*
2025	780,806	*10,420*	*1.4*	13,018	*-11*	*-0.1*	10,164	*127*	*1.3*
2026	790,745	*9,939*	*1.3*	13,023	*5*	*0.0*	10,298	*134*	*1.3*
2027	800,299	*9,554*	*1.2*	13,037	*14*	*0.1*	10,433	*136*	*1.3*
AAGR '07-'16			*0.9*			*-0.6*			*0.4*
AAGR '12-'16			*1.4*			*1.1*			*2.5*
AAGR '18-'22			*1.6*			*-0.5*			*1.1*
AAGR '18-'27			*1.4*			*-0.2*			*1.2*

Note: Estimated-Actual data through February 2017

Table 8

Commercial Consumers & Sales

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	88,306	-	-	54,798	-	-	4,839	-	-
2008	86,121	*-2,185*	*-2.5*	56,827	*2,029*	*3.7*	4,894	*55*	*1.1*
2009	84,318	*-1,803*	*-2.1*	56,643	*-184*	*-0.3*	4,776	*-117*	*-2.4*
2010	78,788	*-5,530*	*-6.6*	57,433	*790*	*1.4*	4,525	*-252*	*-5.3*
2011	78,828	*40*	*0.1*	55,386	*-2,047*	*-3.6*	4,366	*-158*	*-3.5*
2012	80,598	*1,770*	*2.2*	55,287	*-99*	*-0.2*	4,456	*90*	*2.1*
2013	82,302	*1,704*	*2.1*	54,458	*-829*	*-1.5*	4,482	*26*	*0.6*
2014	72,632	*-9,670*	*-11.7*	55,086	*628*	*1.2*	4,001	*-481*	*-10.7*
2015	73,290	*658*	*0.9*	56,689	*1,603*	*2.9*	4,155	*154*	*3.8*
2016	74,411	*1,121*	*1.5*	57,940	*1,251*	*2.2*	4,311	*156*	*3.8*
Forecast									
2017	75,712	*1,301*	*1.7*	57,536	*-405*	*-0.7*	4,356	*45*	*1.0*
2018	76,926	*1,214*	*1.6*	57,406	*-130*	*-0.2*	4,416	*60*	*1.4*
2019	78,101	*1,176*	*1.5*	57,438	*32*	*0.1*	4,486	*70*	*1.6*
2020	79,168	*1,067*	*1.4*	57,737	*299*	*0.5*	4,571	*85*	*1.9*
2021	80,176	*1,008*	*1.3*	58,000	*263*	*0.5*	4,650	*79*	*1.7*
2022	81,283	*1,107*	*1.4*	58,295	*294*	*0.5*	4,738	*88*	*1.9*
2023	82,427	*1,144*	*1.4*	58,527	*232*	*0.4*	4,824	*86*	*1.8*
2024	83,450	*1,023*	*1.2*	58,766	*239*	*0.4*	4,904	*80*	*1.7*
2025	84,426	*975*	*1.2*	59,009	*243*	*0.4*	4,982	*78*	*1.6*
2026	85,366	*941*	*1.1*	59,302	*293*	*0.5*	5,062	*81*	*1.6*
2027	86,268	*902*	*1.1*	59,602	*300*	*0.5*	5,142	*79*	*1.6*
AAGR '07-'16			*-1.9*			*0.6*			*-1.3*
AAGR '12-'16			*-2.0*			*1.2*			*-0.8*
AAGR '18-'22			*1.4*			*0.4*			*1.8*
AAGR '18-'27			*1.3*			*0.4*			*1.7*

Note: Estimated-Actual data through February 2017

Table 9

Commercial Consumers & Sales

Excluding Lee County Electric Cooperative

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	67,898	-	-	55,757	-	-	3,786	-	-
2008	68,703	*805*	*1.2*	55,814	*58*	*0.1*	3,835	*49*	*1.3*
2009	67,704	*-999*	*-1.5*	54,899	*-915*	*-1.6*	3,717	*-118*	*-3.1*
2010	67,552	*-151*	*-0.2*	57,588	*2,689*	*4.9*	3,890	*173*	*4.7*
2011	67,755	*202*	*0.3*	54,597	*-2,991*	*-5.2*	3,699	*-191*	*-4.9*
2012	69,287	*1,532*	*2.3*	55,154	*556*	*1.0*	3,821	*122*	*3.3*
2013	71,094	*1,807*	*2.6*	54,390	*-764*	*-1.4*	3,867	*45*	*1.2*
2014	72,632	*1,538*	*2.2*	55,086	*696*	*1.3*	4,001	*134*	*3.5*
2015	73,290	*658*	*0.9*	56,689	*1,603*	*2.9*	4,155	*154*	*3.8*
2016	74,411	*1,121*	*1.5*	57,940	*1,251*	*2.2*	4,311	*156*	*3.8*
Forecast									
2017	75,712	*1,301*	*1.7*	57,536	*-405*	*-0.7*	4,356	*45*	*1.0*
2018	76,926	*1,214*	*1.6*	57,406	*-130*	*-0.2*	4,416	*60*	*1.4*
2019	78,101	*1,176*	*1.5*	57,438	*32*	*0.1*	4,486	*70*	*1.6*
2020	79,168	*1,067*	*1.4*	57,737	*299*	*0.5*	4,571	*85*	*1.9*
2021	80,176	*1,008*	*1.3*	58,000	*263*	*0.5*	4,650	*79*	*1.7*
2022	81,283	*1,107*	*1.4*	58,295	*294*	*0.5*	4,738	*88*	*1.9*
2023	82,427	*1,144*	*1.4*	58,527	*232*	*0.4*	4,824	*86*	*1.8*
2024	83,450	*1,023*	*1.2*	58,766	*239*	*0.4*	4,904	*80*	*1.7*
2025	84,426	*975*	*1.2*	59,009	*243*	*0.4*	4,982	*78*	*1.6*
2026	85,366	*941*	*1.1*	59,302	*293*	*0.5*	5,062	*81*	*1.6*
2027	86,268	*902*	*1.1*	59,602	*300*	*0.5*	5,142	*79*	*1.6*
AAGR '07-'16			*1.0*			*0.4*			*1.5*
AAGR '12-'16			*1.8*			*1.2*			*3.1*
AAGR '18-'22			*1.4*			*0.4*			*1.8*
AAGR '18-'27			*1.3*			*0.4*			*1.7*

Note: Estimated-Actual data through February 2017

Table 10

Other Consumers & Sales

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	5,150	-	-	31,960	-	-	165	-	-
2008	5,075	-75	-1.5	32,098	138	0.4	163	-2	-1.0
2009	5,036	-39	-0.8	33,085	987	3.1	167	4	2.3
2010	4,956	-80	-1.6	31,896	-1,189	-3.6	158	-9	-5.1
2011	4,954	-2	0.0	32,255	359	1.1	160	2	1.1
2012	4,818	-136	-2.7	34,080	1,825	5.7	164	4	2.8
2013	5,185	367	7.6	32,022	-2,058	-6.0	166	2	1.1
2014	5,308	123	2.4	28,449	-3,573	-11.2	151	-15	-9.1
2015	5,343	35	0.7	28,262	-187	-0.7	151	0	0.0
2016	5,384	42	0.8	28,162	-100	-0.4	152	1	0.4
Forecast									
2017	5,428	44	0.8	25,357	-2,805	-10.0	138	-14	-9.2
2018	5,455	27	0.5	24,887	-470	-1.9	136	-2	-1.4
2019	5,475	20	0.4	24,534	-353	-1.4	134	-1	-1.1
2020	5,497	22	0.4	24,099	-435	-1.8	132	-2	-1.4
2021	5,524	27	0.5	23,855	-243	-1.0	132	-1	-0.5
2022	5,553	29	0.5	23,708	-147	-0.6	132	0	-0.1
2023	5,579	25	0.5	23,596	-112	-0.5	132	0	0.0
2024	5,603	25	0.4	23,492	-104	-0.4	132	0	0.0
2025	5,628	24	0.4	23,379	-113	-0.5	132	0	-0.1
2026	5,650	23	0.4	23,303	-76	-0.3	132	0	0.1
2027	5,671	21	0.4	23,247	-56	-0.2	132	0	0.1
AAGR '07-'16			0.5			-1.4			-0.9
AAGR '12-'16			2.8			-4.7			-2.0
AAGR '18-'22			0.4			-1.2			-0.8
AAGR '18-'27			0.4			-0.8			-0.3

Note: Estimated-Actual data through February 2017

Table 11

Other Consumers & Sales

Excluding Lee County Electric Cooperative

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	5,098	-	-	26,761	-	-	136	-	-
2008	5,019	-79	-1.5	26,514	-247	-0.9	133	-3	-2.5
2009	4,982	-37	-0.7	27,465	951	3.6	137	4	2.8
2010	4,966	-16	-0.3	27,693	228	0.8	138	1	0.5
2011	4,878	-88	-1.8	28,442	749	2.7	139	1	0.9
2012	4,940	61	1.3	29,287	845	3.0	145	6	4.3
2013	5,047	107	2.2	29,044	-244	-0.8	147	2	1.3
2014	5,308	261	5.2	28,449	-595	-2.0	151	4	3.0
2015	5,343	35	0.7	28,262	-187	-0.7	151	0	0.0
2016	5,384	42	0.8	28,162	-100	-0.4	152	1	0.4
Forecast									
2017	5,428	44	0.8	25,357	-2,805	-10.0	138	-14	-9.2
2018	5,455	27	0.5	24,887	-470	-1.9	136	-2	-1.4
2019	5,475	20	0.4	24,534	-353	-1.4	134	-1	-1.1
2020	5,497	22	0.4	24,099	-435	-1.8	132	-2	-1.4
2021	5,524	27	0.5	23,855	-243	-1.0	132	-1	-0.5
2022	5,553	29	0.5	23,708	-147	-0.6	132	0	-0.1
2023	5,579	25	0.5	23,596	-112	-0.5	132	0	0.0
2024	5,603	25	0.4	23,492	-104	-0.4	132	0	0.0
2025	5,628	24	0.4	23,379	-113	-0.5	132	0	-0.1
2026	5,650	23	0.4	23,303	-76	-0.3	132	0	0.1
2027	5,671	21	0.4	23,247	-56	-0.2	132	0	0.1
AAGR '07-'16			0.6			0.6			1.2
AAGR '12-'16			2.2			-1.0			1.2
AAGR '18-'22			0.4			-1.2			-0.8
AAGR '18-'27			0.4			-0.8			-0.3

Note: Estimated-Actual data through February 2017

Table 12

Total Consumers & Sales

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	897,413	-	-	18,328	-	-	16,448	-	-
2008	900,122	*2,709*	*0.3*	17,954	*-374*	*-2.0*	16,161	*-287*	*-1.7*
2009	901,121	*999*	*0.1*	18,018	*64*	*0.4*	16,236	*75*	*0.5*
2010	845,737	*-55,384*	*-6.1*	18,979	*961*	*5.3*	16,052	*-185*	*-1.1*
2011	849,061	*3,324*	*0.4*	17,594	*-1,386*	*-7.3*	14,938	*-1,113*	*-6.9*
2012	855,007	*5,946*	*0.7*	17,074	*-519*	*-3.0*	14,599	*-339*	*-2.3*
2013	864,980	*9,973*	*1.2*	16,956	*-119*	*-0.7*	14,666	*67*	*0.5*
2014	740,566	*-124,414*	*-14.4*	17,500	*545*	*3.2*	12,960	*-1,706*	*-11.6*
2015	751,848	*11,282*	*1.5*	17,788	*288*	*1.6*	13,374	*414*	*3.2*
2016	763,467	*11,620*	*1.5*	18,041	*252*	*1.4*	13,773	*399*	*3.0*
Forecast									
2017	774,126	*10,658*	*1.4*	17,473	*-568*	*-3.1*	13,526	*-248*	*-1.8*
2018	786,107	*11,982*	*1.5*	17,685	*212*	*1.2*	13,902	*376*	*2.8*
2019	798,584	*12,476*	*1.6*	17,678	*-7*	*0.0*	14,118	*215*	*1.5*
2020	811,265	*12,682*	*1.6*	17,549	*-130*	*-0.7*	14,237	*119*	*0.8*
2021	823,510	*12,245*	*1.5*	17,496	*-53*	*-0.3*	14,408	*172*	*1.2*
2022	835,550	*12,040*	*1.5*	17,506	*9*	*0.1*	14,627	*218*	*1.5*
2023	847,591	*12,041*	*1.4*	17,527	*22*	*0.1*	14,856	*229*	*1.6*
2024	859,439	*11,848*	*1.4*	17,538	*11*	*0.1*	15,073	*217*	*1.5*
2025	870,859	*11,420*	*1.3*	17,543	*5*	*0.0*	15,278	*205*	*1.4*
2026	881,761	*10,902*	*1.3*	17,569	*26*	*0.1*	15,492	*214*	*1.4*
2027	892,238	*10,477*	*1.2*	17,604	*35*	*0.2*	15,707	*215*	*1.4*
AAGR '07-'16			*-1.8*			*-0.2*			*-2.0*
AAGR '12-'16			*-2.8*			*1.4*			*-1.4*
AAGR '18-'22			*1.5*			*-0.3*			*1.3*
AAGR '18-'27			*1.4*			*-0.1*			*1.4*

Note: Estimated-Actual data through February 2017

Table 13

Total Consumers & Sales

Excluding Lee County Electric Cooperative

Year	Average Number of Customers	Change	Growth (%)	Average Consumption Per Customer (kWh)	Change	Growth (%)	Sales (GWh)	Change	Growth (%)
History									
2007	700,930	-	-	18,432	-	-	12,920	-	-
2008	707,106	*6,176*	*0.9*	18,036	*-396*	*-2.1*	12,754	*-166*	*-1.3*
2009	708,548	*1,442*	*0.2*	18,041	*5*	*0.0*	12,783	*29*	*0.2*
2010	712,159	*3,610*	*0.5*	19,260	*1,220*	*6.8*	13,716	*934*	*7.3*
2011	715,486	*3,328*	*0.5*	17,631	*-1,629*	*-8.5*	12,615	*-1,101*	*-8.0*
2012	721,056	*5,570*	*0.8*	17,181	*-450*	*-2.6*	12,389	*-226*	*-1.8*
2013	729,961	*8,905*	*1.2*	17,078	*-103*	*-0.6*	12,466	*78*	*0.6*
2014	740,566	*10,605*	*1.5*	17,500	*422*	*2.5*	12,960	*494*	*4.0*
2015	751,848	*11,282*	*1.5*	17,788	*288*	*1.6*	13,374	*414*	*3.2*
2016	763,467	*11,620*	*1.5*	18,041	*252*	*1.4*	13,773	*399*	*3.0*
Forecast									
2017	774,126	*10,658*	*1.4*	17,473	*-568*	*-3.1*	13,526	*-248*	*-1.8*
2018	786,107	*11,982*	*1.5*	17,685	*212*	*1.2*	13,902	*376*	*2.8*
2019	798,584	*12,476*	*1.6*	17,678	*-7*	*0.0*	14,118	*215*	*1.5*
2020	811,265	*12,682*	*1.6*	17,549	*-130*	*-0.7*	14,237	*119*	*0.8*
2021	823,510	*12,245*	*1.5*	17,496	*-53*	*-0.3*	14,408	*172*	*1.2*
2022	835,550	*12,040*	*1.5*	17,506	*9*	*0.1*	14,627	*218*	*1.5*
2023	847,591	*12,041*	*1.4*	17,527	*22*	*0.1*	14,856	*229*	*1.6*
2024	859,439	*11,848*	*1.4*	17,538	*11*	*0.1*	15,073	*217*	*1.5*
2025	870,859	*11,420*	*1.3*	17,543	*5*	*0.0*	15,278	*205*	*1.4*
2026	881,761	*10,902*	*1.3*	17,569	*26*	*0.1*	15,492	*214*	*1.4*
2027	892,238	*10,477*	*1.2*	17,604	*35*	*0.2*	15,707	*215*	*1.4*
AAGR '07-'16			*1.0*			*-0.2*			*0.7*
AAGR '12-'16			*1.4*			*1.2*			*2.7*
AAGR '18-'22			*1.5*			*-0.3*			*1.3*
AAGR '18-'27			*1.4*			*-0.1*			*1.4*

Note: Estimated-Actual data through February 2017

Table 14

Annual Net Energy for Load and Seasonal Net Firm Demand

Net Energy for Load				Summer Net Firm Demand				Winter Net Firm Demand			
Year	Base (GWh)	Low (GWh)	High (GWh)	Year	Base (MW)	Low (MW)	High (MW)	Year	Base (MW)	Low (MW)	High (MW)
History				*History*				*History*			
2007	17,669	-	-	2007	3,839	-	-	2007/2008	4,221	-	-
2008	17,332	-	-	2008	3,630	-	-	2008/2009	4,738	-	-
2009	17,453	-	-	2009	3,824	-	-	2009/2010	5,047	-	-
2010	17,346	-	-	2010	3,548	-	-	2010/2011	4,315	-	-
2011	16,037	-	-	2011	3,653	-	-	2011/2012	3,918	-	-
2012	15,769	-	-	2012	3,428	-	-	2012/2013	3,707	-	-
2013	15,812	-	-	2013	3,566	-	-	2013/2014	3,240	-	-
2014	13,854	-	-	2014	3,088	-	-	2014/2015	3,593	-	-
2015	14,104	-	-	2015	3,021	-	-	2015/2016	3,307	-	-
2016	14,471	-	-	2016	3,243	-	-	2016/2017	3,018	-	-
Forecast				*Forecast*				*Forecast*			
2017	14,165	13,814	15,192	2017	3,090	2,974	3,176	2017/2018	3,398	3,063	3,856
2018	14,655	13,954	15,635	2018	3,140	3,025	3,228	2018/2019	3,466	3,131	3,922
2019	14,875	14,176	15,854	2019	3,187	3,074	3,274	2019/2020	3,531	3,200	3,985
2020	15,023	14,325	15,997	2020	3,238	3,124	3,325	2020/2021	3,588	3,258	4,038
2021	15,125	14,432	16,096	2021	3,251	3,153	3,354	2021/2022	3,643	3,314	4,091
2022	15,337	14,644	16,306	2022	3,297	3,198	3,399	2022/2023	3,699	3,371	4,145
2023	15,574	14,881	16,541	2023	3,343	3,245	3,446	2023/2024	3,749	3,422	4,194
2024	15,805	15,112	16,770	2024	3,388	3,290	3,489	2024/2025	3,802	3,477	4,244
2025	16,022	15,328	16,984	2025	3,430	3,333	3,533	2025/2026	3,857	3,532	4,298
2026	16,249	15,556	17,209	2026	3,474	3,375	3,577	2026/2027	3,909	3,586	4,351
2027	16,470	15,777	17,429	2027	3,516	3,417	3,619	2027/2028	3,955	3,633	4,397
AAGR '07-'16	*-2.2*	-	-	*AAGR '07-'16*	*-1.9*	-	-	*AAGR '08-'17*	*-3.7*	-	-
AAGR '12-'16	*-2.1*	-	-	*AAGR '12-'16*	*-1.4*	-	-	*AAGR '13-'17*	*-5.0*	-	-
AAGR '18-'22	*1.1*	*1.2*	*1.1*	*AAGR '18-'22*	*1.2*	*1.4*	*1.3*	*AAGR '18-'22*	*1.8*	*2.0*	*1.5*
AAGR '18-'27	*1.3*	*1.4*	*1.2*	*AAGR '18-'27*	*1.3*	*1.4*	*1.3*	*AAGR '18-'27*	*1.6*	*1.8*	*1.4*

Note: Actual data through February 2017;
All values exclude Southeastern Power Administration.

Table 15

Annual Net Energy for Load and Seasonal Net Firm Demand

Excluding Lee County Electric Cooperative

Net Energy for Load				Summer Net Firm Demand				Winter Net Firm Demand			
Year	Base (GWh)	Low (GWh)	High (GWh)	Year	Base (MW)	Low (MW)	High (MW)	Year	Base (MW)	Low (MW)	High (MW)
History				*History*				*History*			
2007	13,729	-	-	2007	3,060	-	-	2007/2008	3,343	-	-
2008	13,567	-	-	2008	2,915	-	-	2008/2009	3,817	-	-
2009	13,659	-	-	2009	3,064	-	-	2009/2010	4,224	-	-
2010	14,658	-	-	2010	3,011	-	-	2010/2011	3,685	-	-
2011	13,502	-	-	2011	3,121	-	-	2011/2012	3,383	-	-
2012	13,256	-	-	2012	2,890	-	-	2012/2013	3,229	-	-
2013	13,302	-	-	2013	3,012	-	-	2013/2014	3,240	-	-
2014	13,854	-	-	2014	3,088	-	-	2014/2015	3,593	-	-
2015	14,104	-	-	2015	3,021	-	-	2015/2016	3,307	-	-
2016	14,471	-	-	2016	3,243	-	-	2016/2017	3,018	-	-
Forecast				*Forecast*				*Forecast*			
2017	14,165	13,814	15,192	2017	3,090	2,974	3,176	2017/2018	3,398	3,063	3,856
2018	14,655	13,954	15,635	2018	3,140	3,025	3,228	2018/2019	3,466	3,131	3,922
2019	14,875	14,176	15,854	2019	3,187	3,074	3,274	2019/2020	3,531	3,200	3,985
2020	15,023	14,325	15,997	2020	3,238	3,124	3,325	2020/2021	3,588	3,258	4,038
2021	15,125	14,432	16,096	2021	3,251	3,153	3,354	2021/2022	3,643	3,314	4,091
2022	15,337	14,644	16,306	2022	3,297	3,198	3,399	2022/2023	3,699	3,371	4,145
2023	15,574	14,881	16,541	2023	3,343	3,245	3,446	2023/2024	3,749	3,422	4,194
2024	15,805	15,112	16,770	2024	3,388	3,290	3,489	2024/2025	3,802	3,477	4,244
2025	16,022	15,328	16,984	2025	3,430	3,333	3,533	2025/2026	3,857	3,532	4,298
2026	16,249	15,556	17,209	2026	3,474	3,375	3,577	2026/2027	3,909	3,586	4,351
2027	16,470	15,777	17,429	2027	3,516	3,417	3,619	2027/2028	3,955	3,633	4,397
AAGR '07-'16	*0.6*	-	-	*AAGR '07-'16*	*0.6*	-	-	*AAGR '08-'17*	*-1.1*	-	-
AAGR '12-'16	*2.2*	-	-	*AAGR '12-'16*	*2.9*	-	-	*AAGR '13-'17*	*-1.7*	-	-
AAGR '18-'22	*1.1*	*1.2*	*1.1*	*AAGR '18-'22*	*1.2*	*1.4*	*1.3*	*AAGR '18-'22*	*1.8*	*2.0*	*1.5*
AAGR '18-'27	*1.3*	*1.4*	*1.2*	*AAGR '18-'27*	*1.3*	*1.4*	*1.3*	*AAGR '18-'27*	*1.6*	*1.8*	*1.4*

Note: Actual data through February 2017;
All values exclude Southeastern Power Administration.

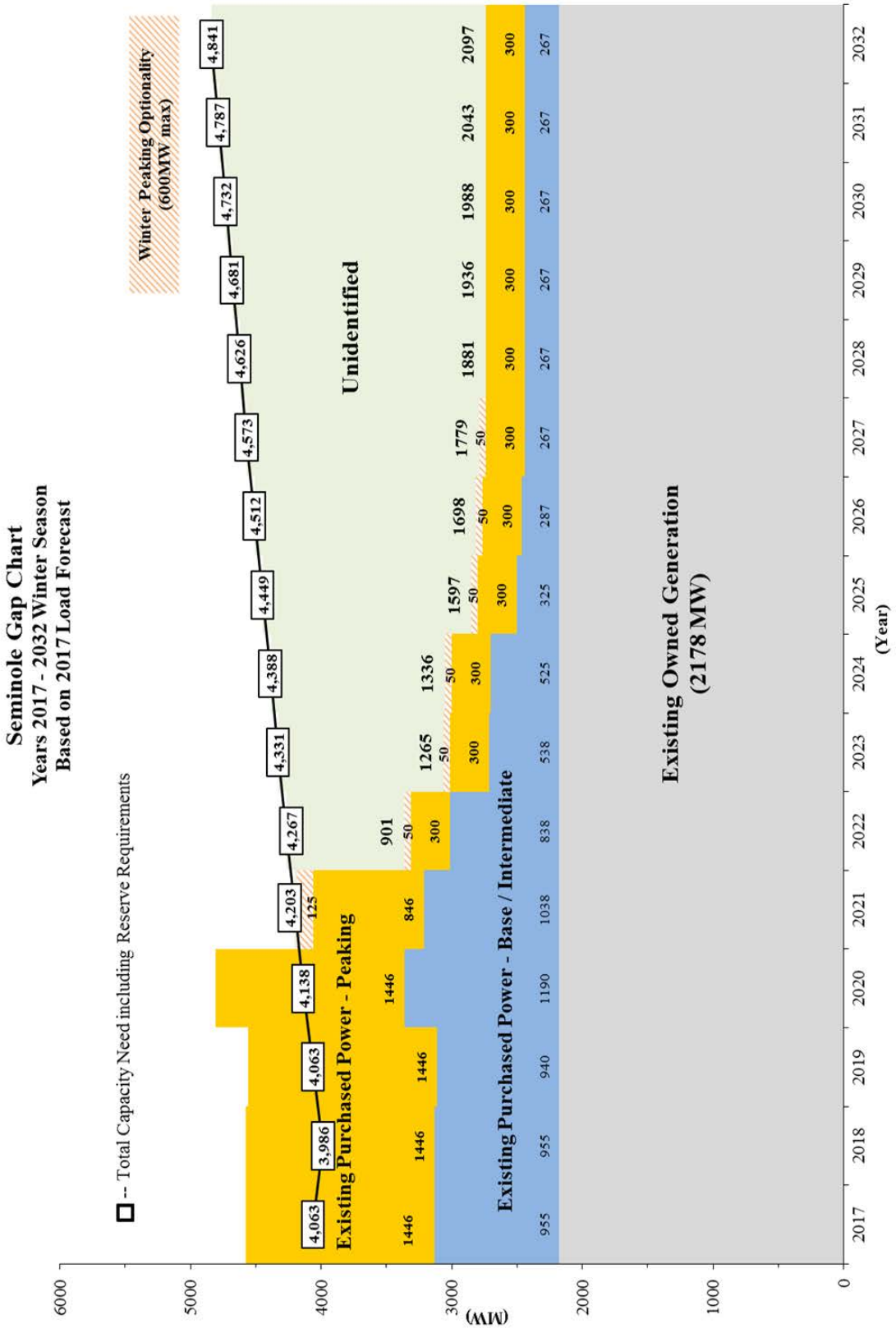
5.3 Seminole's Reliability Criteria

The total amount of generating capacity and reserves required by Seminole is affected by Seminole's load forecast and its reliability criteria. Reserves serve two primary purposes: to provide replacement power during generator outages; and to account for load forecast uncertainty. Seminole's reliability criteria include a Reserve Margin criterion of 15 percent and a Loss of Load Probability ("LOLP") criterion of one day in 10 years. The Reserve Margin is a percentage of the load forecast peak demand and is the additional amount of capacity that a utility maintains above the load forecast peak demand. The Reserve Margin considers only the peak demand versus the amount of generation resources, but the LOLP criterion takes into account load shape, unit sizes, unit availability, and capacity mix when calculating the probability of a utility not adequately meeting load. These reliability criteria help to ensure that Seminole has adequate generating capacity to provide reliable service to its Members and to limit Seminole's emergency purchases from interconnected, neighboring systems.

5.4 Seminole's Capacity Needs

By the end of 2021, Seminole will need 901 MW of generation to meet its Members' energy needs along with its Reserve Margin requirements. That need will grow to 1,265 MW by the end of 2022. Seminole's future capacity need results primarily from the expiration of PPAs, starting with the expiration of 150 MW from DEF on December 31, 2020, followed by expiration of 200 MW from FPL on May 31, 2021, and another for Southern Company's Oleander plant, which includes capacity ratings of 550 MW winter and 460 MW summer. In total, Seminole will lose 900 MW of purchased power resources by the end of 2021, followed by the loss of an additional 300 MW PPA with DEF in 2022. Figure 6 is a "gap chart" showing Seminole's projected winter season need through 2032.

Figure 6 "Gap Chart" summarizing Seminole's Projected Need



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6.0 EVALUATION OF MAJOR GENERATING ALTERNATIVES

6.1 Overview of Evaluation Process

Seminole conducted a multi-stage process for evaluating resource alternatives to meet its projected capacity need. The process began over two years ago when Seminole first determined which self-build alternatives would be evaluated. Seminole then issued an RFP into the market for firm capacity and received a robust response. Seminole then performed economic and risk evaluations on all available alternatives and developed portfolios of generation resources to fulfill Seminole's need. The recommended portfolio, which includes the SCCF and SHCCF, was submitted to Seminole's Board of Trustees and was unanimously approved on September 27, 2017.

6.2 Self-Build Alternatives Considered

6.2.1 Technology Assessment

Due to the high costs and regulatory uncertainties associated with new nuclear and coal-fired generation, Seminole limited its analysis of self-build alternatives to natural gas-fired generation. Seminole retained Black and Veatch, a global engineering, procurement and construction company, to help evaluate numerous power generation technologies as potential future resources prior to selecting the advanced class gas turbine technologies incorporated in the SCCF. Combined cycle technology was selected because the high fuel efficiency and flexible dispatch capability offered by these systems will allow the SCCF to match varying system load at a low cost and with limited environmental impact. Seminole selected state-of-the-art "advanced class" gas turbine technology coupled with flexible operation heat recovery steam generators and an associated steam turbine as the most cost-effective risk-managed self-build option. Seminole initiated a power island equipment purchase bidding process followed by an Engineer, Procure, Construct ("EPC") services bidding process to develop accurate self-build cost estimates which would then compete with market alternatives.

Seminole evaluated several different technologies from three different vendors, General Electric, Mitsubishi Hitachi, and Siemens. Upon completion of the initial screening, Seminole issued an RFP in February 2016 to three vendors; two of which, General Electric and Mitsubishi, responded with compliant bids. Both of these vendors submitted two proposals; one for a 1x1 unit and the second for a 2x1 unit. All four units were evaluated along with the market alternatives**.** Seminole ultimately determined that the GE technology was the most economic option.

6.2.2 Site Assessment

In order to fully evaluate potential self-build site location options, Seminole retained a third party environmental consultant to assess the environmental licensing considerations associated with locating new generation facilities at two potential sites owned by Seminole: the site adjacent to SGS in Putnam County and another 586-acre site in Gilchrist County. Informed by the results of that study and subsequent information, Seminole retained Black & Veatch, a global engineering firm, to evaluate the SGS site versus the Gilchrist site using a comparative analysis that utilized the following intangible criteria:

- Land Use/Ownership
- Site Development
- Electrical Transmission
- Fuel Supply
- Water Supply
- Waste Water
- Environmental Assessment
- Transportation
- Technology Selection
- Schedule

Based on the comparative analysis, the SGS site scored substantially better than the Gilchrist site for a combined cycle facility. In particular, the Gilchrist site posed

significant issues relative to water availability and wastewater discharge options. In addition, the SGS site is a brownfield site with capability of utilizing existing water intake, water discharge, and electrical transmission infrastructure. Overall, the SGS site has significant economic and strategic advantages for siting a combined cycle facility.

6.3 Purchase Power Alternatives Considered

6.3.1 The Requests for Proposals ("RFP")

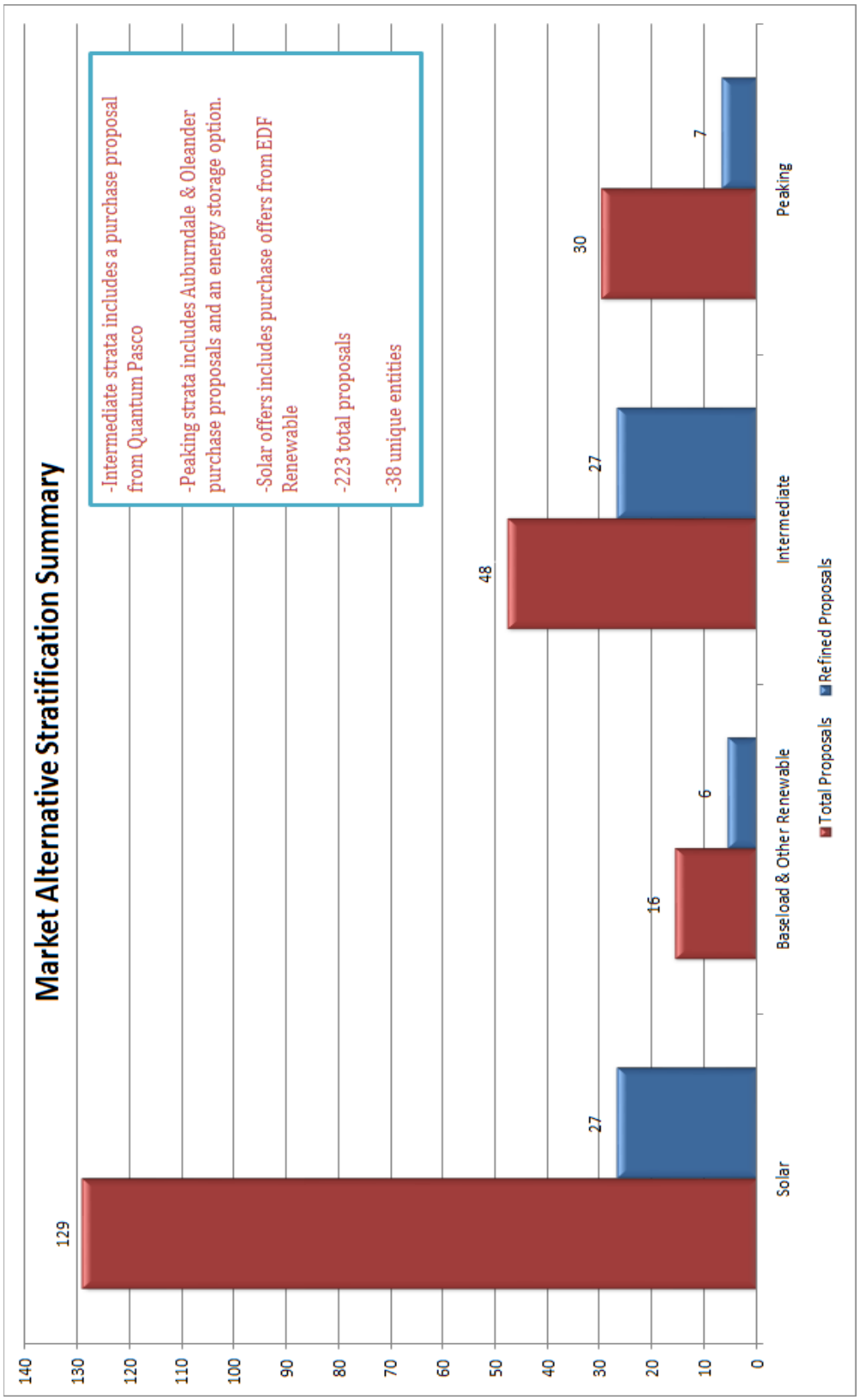
Seminole identified market alternatives by issuing an RFP in March 2016 for firm capacity up to 1,000 MW beginning as early as June 1, 2021. The RFP stated that the need for 600 MW of capacity would start in June 2021, with total needs increasing to 1,000 MW by June 2022. Seminole encouraged proposals of base, intermediate, and/or peaking capacity, as well as renewable resources. The RFP also stated that proposals providing demand side options would be considered, although no such proposals were received. A copy of the RFP is provided as Appendix A.

6.3.2 Proposals Received & Initial Economic Evaluation

In May 2016, Seminole received proposals for purchased power alternatives in response to its RFP. The response was robust, with Seminole receiving a total of 223 proposals from 38 counterparties. The proposals included offers providing generation from various renewable sources including solar, wind and energy storage; existing and new gas-fired facilities; and system offers for both intermediate and peaking generation.

Following receipt of the bids, Seminole reviewed the proposals for completeness along with technical and operational viability. Seminole also performed an initial economic screening using bus bar cost analysis (i.e., the total cost to operate a resource on a $/MWh basis) of all alternatives within a stratification (baseload and other renewables, intermediate, peaking or solar). Those with significantly higher operating cost based on a typical capacity factor within a stratification were eliminated. Figure 7 provides a summary of proposals received in response to the RFP, as well as the set of "refined proposals" that Seminole received after the intital economic screening.

Figure 7 Summary of Proposals Received in Response to RFP



6.4 Economic Evaluation of Generation Alternatives

6.4.1 Methodology

After the initial screening of proposals, Seminole evaluated all remaining alternatives, including self-build options, using System Optimizer. System Optimizer is an industry-recognized utility model developed by ABB and used to develop an optimal resource mix to satisfy future needs. The model simulates how each potential and existing resource will be used to serve the forecasted peak demand and energy requirements in the load forecast. System Optimizer's inputs include the demand and energy forecast, Reserve Margin requirements, fuel price forecast, plus the individual resource's cost and performance characteristics such as fixed cost, variable cost, heat rates, forced outage rates, and maintenance schedules.

Seminole ran multiple iterations through System Optimizer. The first iteration was used to develop a portfolio for Seminole's need starting in winter of 2022 with all resources available ("SGS 2x1 Portfolio"). Seminole also developed a limited build portfolio which allowed one 1x1 combined cycle unit to be built ("Limited Build Risk: Shady Hills Portfolio") as well as a "no build" portfolio consisting of only PPAs ("All PPA Portfolio"). Because the status of the Clean Power Plan and long-term economics for coal-fired generation were uncertain, Seminole also developed a portfolio taking into account the removal of one coal unit from service ("CPP/CC Portfolio").

Once the optimal portfolio candidates were identified via System Optimizer, Seminole used Planning and Risk ("PaR"), another industry-recognized utility model from ABB, to further evaluate the production cost. PaR is a detailed production cost model, which commits resources in each hour over the study period based on costs and operational constraints. The operational constraints are similar to those in System Optimizer but more extensive, including such constraints as minimum up and down times, must run requirements, and natural gas pipeline flow limits. The production costs from PaR along with any capital and transmission cost increases for network upgrades are loaded into the corporate financial model to develop the annual revenue requirements.

6.4.2 Economic Parameters

The primary drivers for the economic analysis among generation alternatives are plant fixed cost and fuel cost. Seminole's relatively low financing costs help mitigate the ultimate cost of self-build projects. Differences between the capital costs and fuel costs of competing technologies are the most significant factors affecting the economic comparisons among Seminole's generation altematives. Seminole's cost of debt projections for self-build alternatives assumed a financing rate of 5.96%.

The discount rate, which is used for present worth calculations, is equal to the average annual long term cost of debt. The construction cost of self-build alternatives includes a rate equal to the average annual long term debt rate on funds used during the construction period.

6.4.3 Fuel Price Forecast

Seminole's fuel price forecast is derived from a combination of published market indices, independent price forecasts, and escalators where necessary to extend the price forecast beyond the horizon of available values. For natural gas, Seminole uses the NYMEX futures forward market prices along with projected escalation of gas prices as provided by the Energy Information Administration ("EIA"). Seminole's coal price forecast is based on price projections obtained from Energy Research Company, LLC. Seminole's fuel oil price forecast is based on EIA's Annual Energy Outlook for distillate fuel oil. These sources of forward energy prices are commonly accepted in the utility industry.

The fuel price forecasts utilized in the original and updated economic analyses discussed below, including the alternative forecasts for natural gas, are summarized in Tables 16 and 17. Unless a firm fuel cost was included in an RFP proposal, Seminole used its fuel price forecast across all self-build and purchased power alternatives to ensure fairness in the evaluation.

Table 16 - Fuel Price Forecast

Year	Natural Gas Base Price Forecast ($/MMBtu)	Natural Gas High Price Forecast ($/MMBtu)	Natural Gas Low Price Forecast ($/MMBtu)	Coal Price Forecast ($/MMBtu)	#2 Oil Price Forecast ($/MMBtu)
2017	$3.52	$4.34	$2.87	$3.53	$14.64
2018	$3.20	$4.43	$2.32	$3.59	$16.55
2019	$3.04	$4.30	$2.15	$3.41	$17.59
2020	$3.04	$4.34	$2.13	$3.53	$18.08
2021	$3.04	$4.43	$2.09	$3.62	$18.43
2022	$3.06	$4.53	$2.06	$3.70	$18.69
2023	$3.14	$4.71	$2.10	$3.78	$19.02
2024	$3.27	$4.94	$2.17	$3.86	$19.34
2025	$3.42	$5.25	$2.23	$3.95	$19.81
2026	$3.56	$5.55	$2.28	$4.03	$20.17
2027	$3.71	$5.86	$2.35	$4.13	$20.38
2028	$3.86	$6.16	$2.41	$4.22	$20.39
2029	$4.01	$6.48	$2.48	$4.32	$20.65
2030	$4.13	$6.74	$2.54	$4.42	$21.08
2031	$4.31	$7.07	$2.62	$4.52	$21.40
2032	$4.40	$7.27	$2.66	$4.62	$21.87
2033	$4.42	$7.35	$2.66	$4.73	$21.82
2034	$4.48	$7.49	$2.68	$4.83	$22.14
2035	$4.64	$7.79	$2.77	$4.94	$22.31
2036	$4.71	$7.93	$2.80	$5.05	$22.85
2037	$4.80	$8.10	$2.84	$5.17	$22.93
2038	$4.87	$8.24	$2.88	$5.29	$23.05
2039	$4.99	$8.46	$2.95	$5.41	$23.40
2040	$5.08	$8.60	$3.00	$5.53	$23.59
2041	$5.20	$8.81	$3.07	$5.66	$23.65
2042	$5.37	$9.10	$3.17	$5.78	$23.69
2043	$5.62	$9.51	$3.31	$5.92	$23.76
2044	$5.79	$9.80	$3.42	$6.05	$23.86
2045	$5.99	$10.13	$3.54	$6.19	$23.97
2046	$6.19	$10.45	$3.67	$6.33	$24.15
2047	$6.42	$10.81	$3.81	$6.47	$24.45
2048	$6.70	$11.26	$3.98	$6.61	$24.49
2049	$6.91	$11.59	$4.12	$6.76	$24.69
2050	$7.16	$11.97	$4.28	$6.92	$24.96
2051	$7.42	$12.37	$4.44	$7.07	$25.52

Table 17 - Fuel Price Forecast – Updated

Year	Natural Gas Base Price Forecast ($/MMBtu)	Natural Gas High Price Forecast ($/MMBtu)	Natural Gas Low Price Forecast ($/MMBtu)	Coal Price Forecast ($/MMBtu)	#2 Oil Price Forecast ($/MMBtu)
2017	$3.32	$3.63	$2.90	$3.45	$14.64
2018	$3.20	$4.28	$3.06	$3.52	$16.55
2019	$2.94	$4.11	$2.39	$3.13	$17.59
2020	$2.92	$4.15	$2.11	$3.28	$18.08
2021	$2.94	$4.25	$2.06	$3.36	$18.43
2022	$3.03	$4.38	$2.04	$3.42	$18.69
2023	$3.09	$4.43	$2.10	$3.50	$19.02
2024	$3.16	$4.48	$2.15	$3.57	$19.34
2025	$3.24	$4.67	$2.23	$3.65	$19.81
2026	$3.33	$4.87	$2.25	$3.74	$20.17
2027	$3.42	$5.06	$2.28	$3.82	$20.38
2028	$3.51	$5.25	$2.31	$3.91	$20.39
2029	$3.60	$5.44	$2.34	$4.00	$20.65
2030	$3.71	$5.65	$2.38	$4.09	$21.08
2031	$3.86	$5.93	$2.43	$4.19	$21.40
2032	$3.94	$6.10	$2.52	$4.28	$21.87
2033	$3.96	$6.16	$2.55	$4.38	$21.82
2034	$4.02	$6.27	$2.55	$4.47	$22.14
2035	$4.16	$6.52	$2.58	$4.58	$22.31
2036	$4.23	$6.64	$2.66	$4.68	$22.85
2037	$4.30	$6.78	$2.69	$4.79	$22.93
2038	$4.37	$6.90	$2.73	$4.89	$23.05
2039	$4.48	$7.08	$2.77	$5.01	$23.40
2040	$4.55	$7.20	$2.83	$5.12	$23.59
2041	$4.66	$7.37	$2.88	$5.24	$23.65
2042	$4.84	$7.66	$2.94	$5.36	$23.69
2043	$5.06	$8.01	$3.06	$5.48	$23.76
2044	$5.22	$8.25	$3.20	$5.60	$23.86
2045	$5.40	$8.53	$3.30	$5.73	$23.97
2046	$5.58	$8.81	$3.42	$5.86	$24.15
2047	$5.78	$9.11	$3.54	$5.99	$24.45
2048	$6.04	$9.49	$3.67	$6.12	$24.49
2049	$6.22	$9.77	$3.84	$6.26	$24.69
2050	$6.45	$10.10	$3.97	$6.40	$24.96
2051	$6.68	$10.44	$4.12	$6.55	$25.52

6.4.4 Results

Ultimately, the net present value ("NPV") of the revenue requirements is the basis for comparing different portfolios in the economic evaluation. The CPP/CC Portfolio, which includes the SCCF, the SHCCF, and the removal from service of one SGS coal unit, was the least cost portfolio. The next portfolio in NPV revenue requirement terms was approximately $355 million more expensive over the study period. Figure 8 summarizes the results of Seminole's economic analyses of the various alternative portfolios.

Figure 8 Summary of Initial Economic Analyses

Portfolio Summaries
Initial Economic Analysis Results
(millions of $)

	SGS 2x1 Portfolio	CPP/CC Portfolio	Limited Build Risk: Shady Hills Portfolio	No Build Risk: All PPA Portfolio
Resources	-SGS 2x1 -Multiple PPA	-SGS 2x1 -Shady Hills 1x1 -Multiple PPA	-Shady Hills 1x1 -Multiple PPA	-Multiple PPA
Total Member Revenue Requirements - Years 2018-2027 (millions of $)				
Nominal	12,381	12,266	12,196	12,096
NPV @ 6.0%	9,008	8,936	8,885	8,797
Total Member Revenue Requirements - Years 2018-2051 (millions of $)				
Nominal	61,264	60,244	62,185	61,695
NPV @ 6.0%	22,196	21,841	22,370	22,198

Figures 9 and 10 are "gap charts" showing how the selected portfolio would fill Seminole's projected need during the winter and summer seasons, respectively (the SHCCF is included within "new purchased power agreements").

Figure 9 "Gap Chart" Showing Effect of Selected Portfolio (Winter)

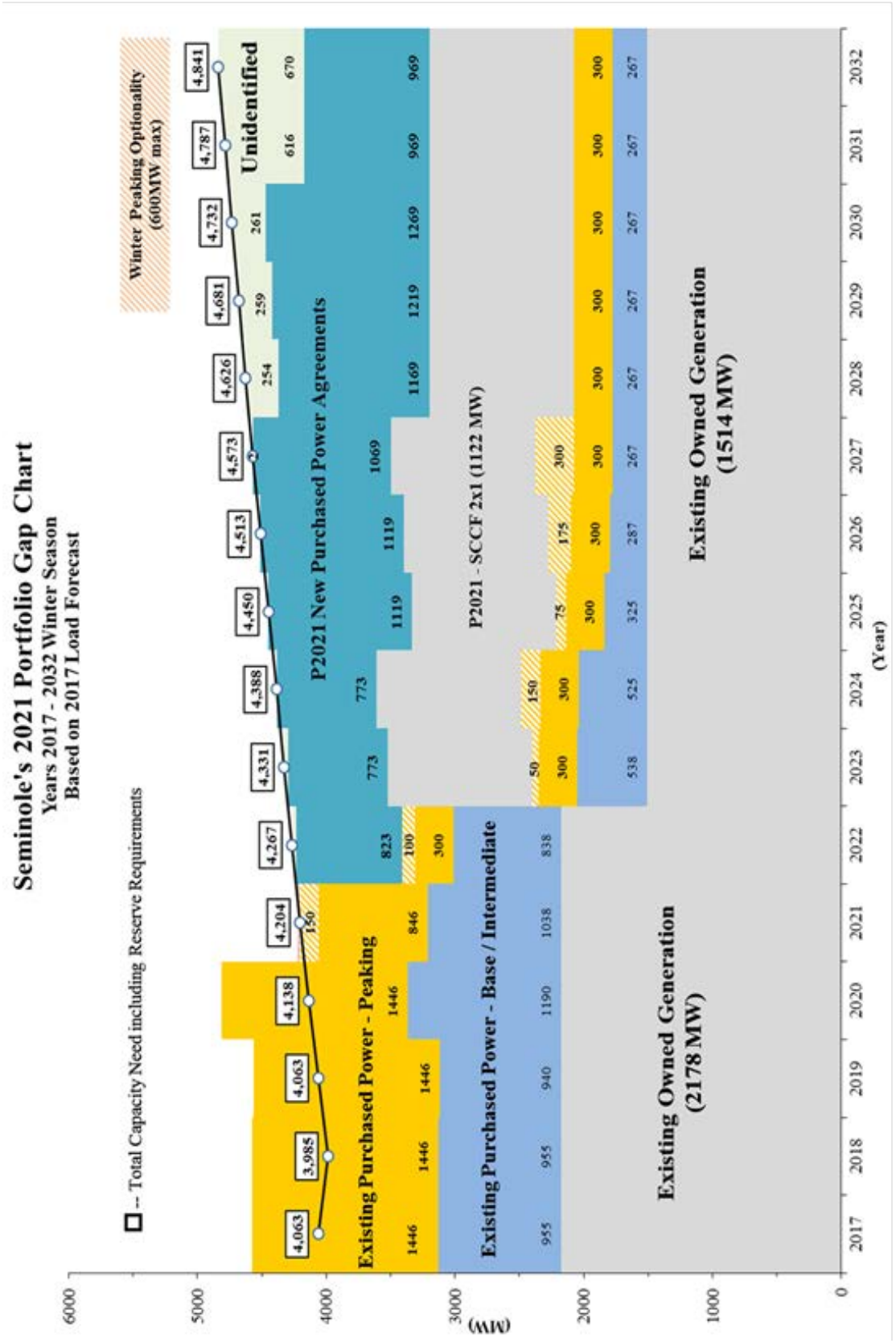
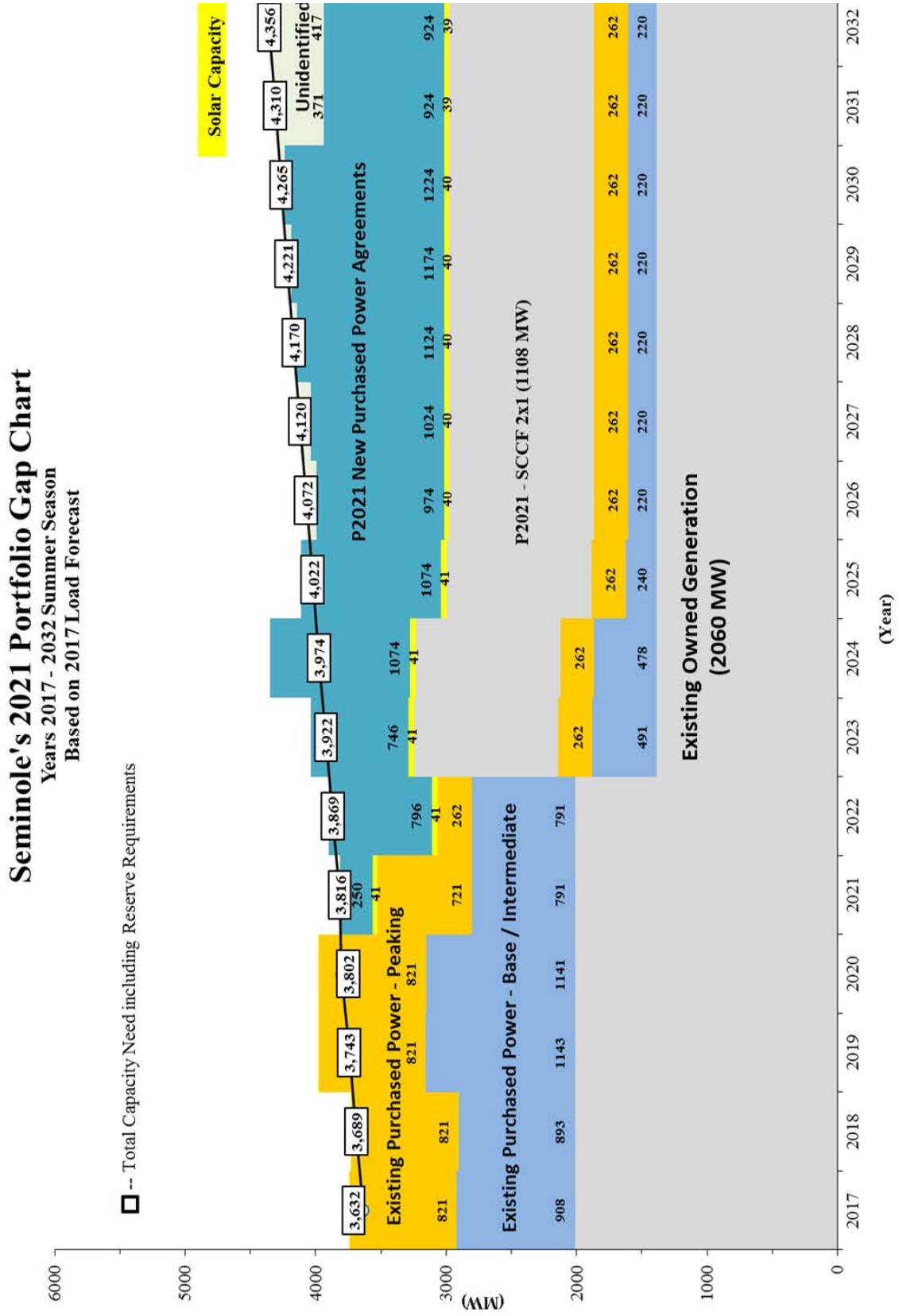


Figure 10 "Gap Chart" Showing Effect of Selected Portfolio (Summer)



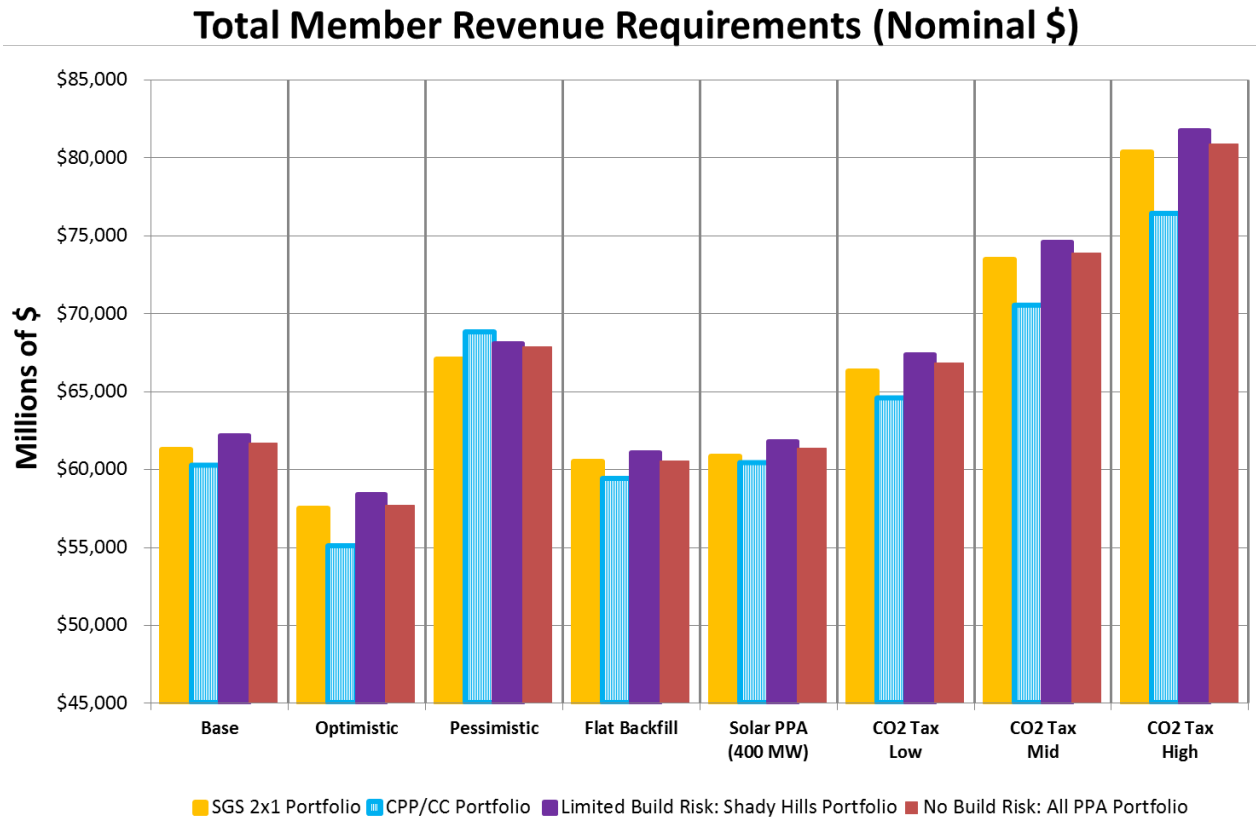
6.5 Sensitivity Analyses

Seminole also performed multiple sensitivity analyses to assess various uncertainties. The senstivity analyses include the following scenarios:

- **Optimistic (**High load growth with low gas prices)
- **Pessimistic** (Low load growth with high gas prices)
- **Flat Backfill** (No escalation of generic unit capacity costs)
- **Solar PPA 400 MW** (400 MW of additional solar PPA)
- **Various Carbon Tax** (based on Minnesota PSC Carbon tax assumptions)
    - Low – starting at $9.00/ton in 2019 and escalating
    - Mid – starting at $21.50/ton in 2019 and escalating
    - High – starting at $43.00/ton in 2019 and escalating

The results of these sensitivity analyses, which are summarized in Figure 11, support the conclusion that the CPP/CC Portfolio provides the most cost effective solution for Seminole's need.

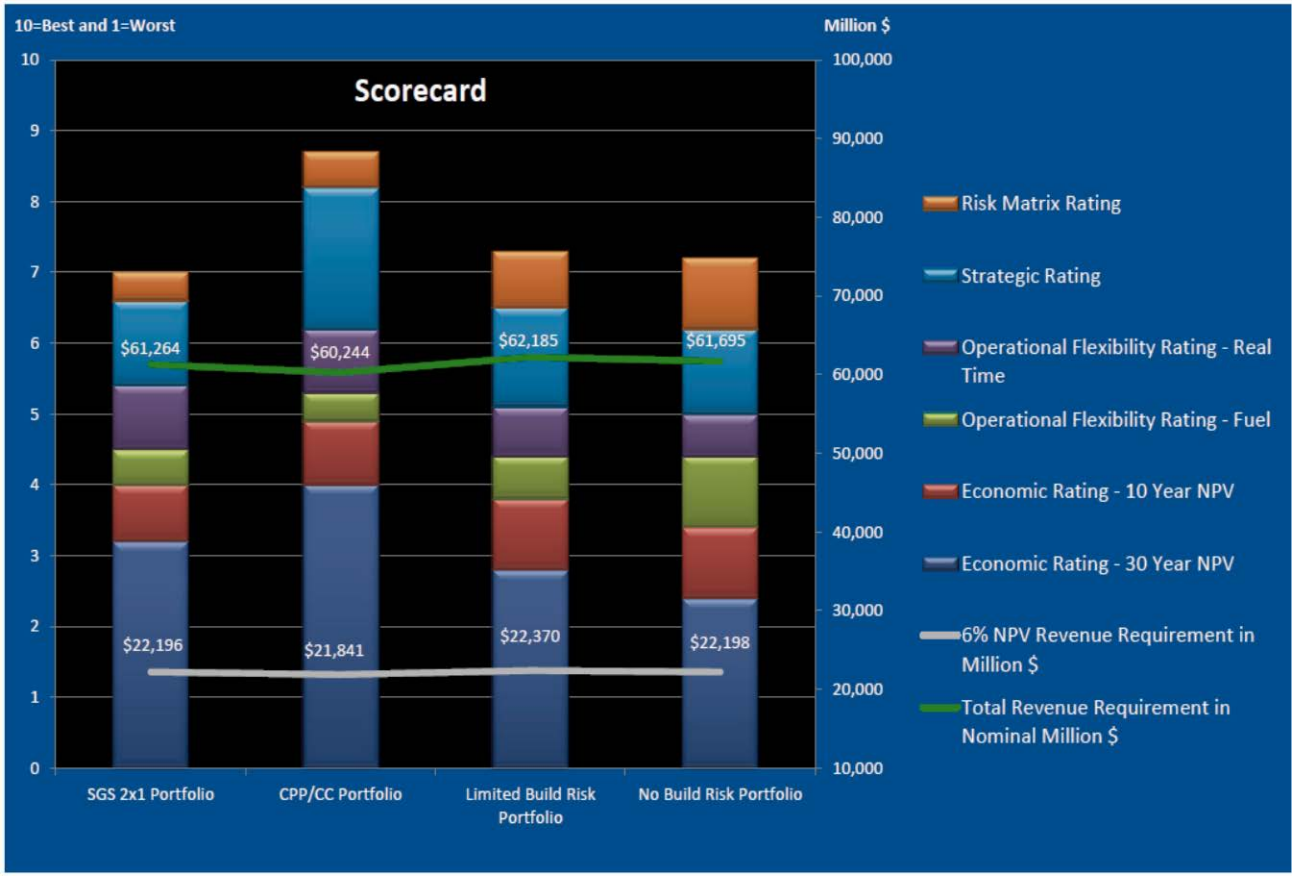
Figure 11 Results of Sensitivity Analyses



6.6 Consideration of Economic and Non-Economic Attributes

Once the production cost modeling was completed, Seminole's staff performed risk analysis for both individual alternatives and each of the remaining portfolios. Seminole produced scorecards for each portfolio which took into account a weighted risk rating, a strategic rating, operational flexibility ratings for fuel, real time operational flexibility, and an economic rating for a short-term (10 year) and long-term (30 year) net present value revenue requirement. These portfolio scorecard assessments are reflected in Figure 12.

Figure 12 Portfolio Scorecard Assessment



In addition to cost-effectiveness and risk impacts, Seminole considered the value of having optionality. One of the new PPAs included in the CPP/CC Portfolio provides Seminole with the advantage of optionality, giving Seminole the flexibility to modify its commitment up or down with relatively short notice. Given the vulnerability of load forecasts, the ability to modify resource commitments will give Seminole a hedge against economic acceleration/downturns or faster/slower load growth rates.

Seminole also considered the utilization of solar. However, Seminole is a winter-peaking utility that experiences its highest end-use demand on winter nights when solar energy is not a viable capacity source to offset peak demand. Nevertheless, in recognition of the energy value of solar, Seminole included 40 MW of new solar in the CPP/CC Portfolio.

Seminole also considered the potential impact of the resource plan on fuel diversity and supply reliability. The SCCF and SHCCF will be solely fueled by natural gas, but they will replace expiring purchased power resources that were also primarily natural gas-fired. Seminole's decision to maintain the operation of one SGS coal-fired generating unit will provide continued diversification in Seminole's fuel portfolio. Further, Seminole is implementing a natural gas transportation plan that includes contracts with four different counterparties for a variety of solutions to enhance the diversification and reliability of its delivered gas supply. For these reasons, the selected portfolio is not expected to significantly impact fuel diversity or supply reliability.

6.7 Selection of SCCF and SHCCF

Based on the analyses described above, Seminole determined that the most cost effective, risk-managed resource plan to meet its Members' future needs is a mix of resources consisting of existing generation resources, long-term PPAs, and the construction of two natural gas-fired combined cycle facilities. The first combined cycle unit would be a 573 MW (winter) one-on-one unit to be constructed, owned and operated by SHEC at the existing Shady Hills power plant site in Pasco County pursuant to a tolling agreement with Seminole. The second combined cycle plant would be a self-build 1,050 MW (nominal) two-on-one combined cycle plant adjacent to the existing SGS plant, along with the removal from service of one of the two existing 664 MW SGS coal units.

6.8 Updated Economic Assessment

Since the Board of Trustees' initial approval of the selected resource plan, Seminole conducted a present worth revenue requirements comparison for all four portfolios with the 2018 Budget assumptions approved in October 2017. While the total dollar values changed, the rankings between the portfolios did not. The CPP/CC Portfolio, which includes the SCCF and SHCCF along with the removal from service of one of the two existing 664 MW SGS coal units, remained the least cost portfolio. The

next portfolio in NPV revenue requirement terms was approximately $363 million more expensive over the study period. Figure 13 shows the differential between the portfolios.

Figure 13 Summary of Updated Economic Analysis

Portfolio Summaries Revised Economic Analysis Results (millions of $)				
	SGS 2x1 Portfolio	CPP/CC Portfolio	Limited Build Risk: Shady Hills Portfolio	No Build Risk: All PPA Portfolio
Resources	-SGS 2x1 -Multiple PPA	-SGS 2x1 -Shady Hills 1x1 -Multiple PPA	-Shady Hills 1x1 -Multiple PPA	-Multiple PPA
Total Member Revenue Requirements - Years 2018-2027 (millions of $)				
Nominal	11,859	11,754	11,735	11,571
NPV @ 6.0%	8,641	8,568	8,549	8,432
Total Member Revenue Requirements - Years 2018-2051 (millions of $)				
Nominal	57,539	56,465	58,312	58,289
NPV @ 6.0%	20,981	20,618	21,120	21,006

7.0 EVALUATION OF NON-GENERATING ALTERNATIVES

7.1 Current Conservation & Demand-Side Management Efforts

As a wholesale supplier of electric energy to its Member Cooperatives, Seminole is not directly responsible for DSM programs. However, Seminole's wholesale rate structure provides Members price signals that reflect Seminole's cost of supplying power in aggregate. Under this rate structure, Seminole's demand charge to each of its Members is applied to each Member's demand at the time of Seminole's peak. This encourages Members to concentrate their load management efforts on controlling Seminole's overall system peak rather than their separate peaks. In addition, Seminole's wholesale rate to its Members include time-of-use fuel charges to reflect the differences in fuel costs incurred by Seminole to serve its Members during the peak and off-peak periods. Each Member may use these price signals to evaluate the cost-effectiveness of DSM and conservation measures for its own circumstances. To ensure Members have the opportunity to achieve maximum load-management benefit, Seminole's system operators develop and implement a coordinated load management demand reduction strategy in real time to notify Members when Seminole's monthly billing peak is expected to occur.

Seminole also assists its Members in evaluating and implementing DSM measures. In 2008, Seminole and its Members jointly formed an Energy Efficiency Working Group to coordinate and further-promote energy conservation and efficiency initiatives. The function of this group is to promote conservation, efficiency and DSM programs through the sharing of information, member-consumer education, and joint assessment of energy efficiency technologies. In addition, Seminole has sponsored its own conservation/efficiency initiatives, which included giving light emitting diode light bulbs ("LEDs") to member-consumers during Member meetings and administering an LED bulk purchase program for Members. Seminole provides Members with materials that can be distributed to end-use member-consumers including educational brochures, manufactured housing weatherization brochures, videos on energy efficiency home

auditing, and a video on Cooperative Solar. Seminole also remains active in upgrading utility system efficiency at administration and generation facilities.

Because Seminole and its Members are not subject to the requirements of the Florida Energy Efficiency and Conservation Act ("FEECA"), they do not have Commission-approved DSM goals, programs or plans. However, Seminole's Members participate in a variety of utility system efficiency and DSM programs, including distribution system voltage reduction ("VR"), load management distributed generation and interruptible rate programs which help reduce Seminole's load during peak periods. Seminole's Members also offer a variety of programs and services to end-use member-consumers in order to promote energy conservation and cost savings. Member programs include:

- **Distribution System Voltage Reduction (VR):** Coordinated load management-demand reduction program where Member system operators lower voltage during critical peak billing periods, within allowable thresholds, on distribution feeders to reduce demand behind end-use meters during critical peak billing periods.
- **Commercial Coincident Peak Power (CPP) Rates:** Coordinated load management-demand reduction program where enrolled commercial and industrial member-consumers are signaled to shed load during critical peak billing periods.
- **Commercial Interruptible Rates:** Direct load control program where Seminole or the Member interrupts electrical service to enrolled commercial member-consumers during extreme peak demand, capacity shortage or emergency conditions.
- **Commercial Customer Load Generation:** Standby peak-shaving generators which Seminole and its Members may dispatch for purpose of load management and enhanced reliability. Members with standby generators under this program receive a billing credit.

- **Time-of-Use (TOU) Rates**: Residential, commercial, or industrial rates that encourage member-consumers to reduce power use during on-peak hours through price signals.
- **Residential Pre-Pay:** Residential member-consumers pre-pay for their electricity and receive enhanced feedback on their energy use and costs. The increased energy awareness that this program provides results in behavioral changes that produce energy savings.
- **LED/CFL Efficient Bulb Giveaway:** This program provides participating end-use member-consumers with free energy-efficient 10 Watt (W) LED or 13W compact fluorescent light ("CFL") bulbs to replace their existing 60W incandescent bulbs.
- **LED Outdoor and Street Lighting:** Replacement of Member-owned outdoor and street lighting with lower wattage LEDs.
- **Residential Energy Smart Rebates:** A rebate is given to residential member-consumers to upgrade to more efficient equipment and/or improve the building envelope. Rebate opportunities include: air conditioners and heat pumps, heat pump water heaters, solar water heaters, insulation – batt or spray foam – and window film.
- **Energy Audits:** On-site energy audit program for residential, commercial and industrial member-consumers.

Table 18 shows the specific conservation and demand-side offerings of each of Seminole's Members.

Table 18 Conservation & Demand-Side Offerings of Seminole Members

	Distribution System Voltage Reduction	Commercial Coincident Peak Power Rates	Commercial Interruptible Rate	Commercial Customer Load Generation	TOU Rates	Residential Pre-Pay	Lighting Conservation	Energy Rebates	Energy Audits
Central Florida	X			X	X	X	X		X
Clay	X		X	X	X		X	X	X
Glades				X	X		X		X
Peace River	X			X	X		X		X
SECO Energy	X	X	X	X	X	X	X		X
Suwannee Valley	X		X	X	X	X	X		X
Talquin	X			X			X		X
Tri-County		X				X	X		X
Withlacoochee River	X			X		X	X		X

In 2016, Seminole engaged Advanced Energy and Tierra Resource Consultants (AE/Tierra), an energy and natural resource consulting firm, to help quantify the energy efficiency and DSM savings achieved by Seminole and its Members. As shown in Table 19, AE/Tierra estimated that Seminole and its Members are achieving approximately 12,353 MWh in annual savings and approximately 85 MW in peak savings.

Table 19 Annual Energy Savings

Program Type	Annual MWh Savings	Annual kW Savings
Residential Pre-Paid Energy Program	7,172	201
Bulb Giveaways (LED & CFL)	287	33
TOU/CPP Rates	170	18,258
Utility System Savings (inlcuding VR)	3,475	66,298
Energy Smart Rebates	946	236
LED Outdoor Lights/Street lighting	303	0
TOTAL	**12,353**	**85,026**

7.2 Potential for Conservation and DSM Savings to Mitigate Need

In order to help Seminole evaluate whether DSM measures may be reasonably available to mitigate the projected need, Seminole also engaged AE/Tierra to identify potential new programs and to evaluate their cost-effectiveness. None of the additional measures evaluated by AE/Tierra satsified the Rate Impact Measure ("RIM") test traditionally relied upon by the Commission in evaluating the cost-effectiveness of DSM measures. Nevertheless, Seminole is planning to implement one of the identified measures (Smart Thermostat) of particular interest to Members. Seminole also is committed to working with its Members to implement recommendations made by AE/Tierra to help improve program tracking and increase future savings by enhancing current efforts and adding new measures to existing programs when appropriate.

The DSM and conservation savings actually achieved by Seminole's Members are reflected in Seminole's load forecast, yet Seminole will still need 901 MW of additional capacity beginning in 2021. To put this in perspective, in Order No. PSC-14-0696-FOF-EU, the Commission established DSM goals for the utilites subject to FEECA. Based on those goals, the largest electric utility in the State of Florida, FPL, is expected to achieve Commission-Approved DSM Goals of approximately 526 MW in summer demand reduction and 324 MW in winter demand reduction, over the course of a ten-year period from 2015 through 2024. As an additional point of comparison, TECO, which is comparable in size to Seminole in terms of consumers and annual peak demand, is expected to achieve Commission-Approved DSM Goals of approximately 56 MW in summer demand reduction and 78 MW in winter demand reduction, over the course of the same ten-year period. Based on these Commission-approved DSM goals even large, vertically integrated utilities comparable to and larger than Seminole's size with centralized staff and resources to offer DSM programs directly to their customers cannot cost-effectively achieve 901 MW peak demand reductions through DSM and conservation programs over the course of the next four years.

Even if additional DSM savings were theoretically achievable, the selected CPP/CC Portfolio would still be Seminole's most cost-effective alternative based on the results of Seminole's "low load" senstivity analysis. The low load forecast sensitivity is intended to reflect reductions in loads due to a combination of potential factors as compared to the base case, including but not limited to changes in economic conditions, decreased customer counts, mild weather, increased utilization of customer-owned distributed generation resources, and increased energy efficiency. The low load forecast sensitivity may be considered as a proxy for Seminole's Members' member-consumers achieving increased levels of demand and energy reductions due to DSM or conservation as compared to the base case load forecast. Because the CPP/CC Portfolio is the most cost-effective alternative even considering the low load forecast, there is no reasonable basis to conclude that DSM or conservation measures are reasonably available to Seminole or its Members that would mitigate the need for SCCF and SHCCF.

8.0 ADVERSE CONSEQUENCES OF DENIAL

Non-approval would mean that Seminole's Members and the Members' retail member-consumers would be denied the most cost-effective, risk-managed power supply solution. Seminole's required reserve margin would fall below the minimum reserve level in 2021. While additional off-system purchases could perhaps be made to fulfill Member power requirements and maintain the target reserve margin, Seminole would not be able to remove a coal unit from service and the costs of the resulting resource plan would be substantially higher.

If the requested need determination for the SCCF were denied, Seminole would not be able to take an SGS coal unit out of service (664 MW) and the resulting resource plan would increase costs as compared to the resource plan that includes the SCCF. Seminole estimates that if only the SCCF were denied, the NPV revenue requirements impact would be approximately $502 million.

If the SHCCF was denied, then again Seminole could pursue one of two options. One option would be to leave the SGS coal unit in service which would cover our Members and their member-consumers' needs, but at a higher cost. The second option would be to go to the market to find replacement capacity, likely resulting in higher costs. Seminole estimates that if only the SHCCF were denied, the NPV revenue requirements impact would be approximately $363 million along with the continuation of service of the coal unit.

If both projects were to be denied, Seminole estimates that the NPV revenue requirements impact would be approximately $388 million, without consideration of transmission impacts which could be significant. Moreover, Seminole would need to continue operating both SGS coal units.

9.0 CONCLUSION

The analyses and other information described in this Need Study demonstrate that affirmative need determinations are warranted for the SCCF and SHCCF projects based on consideration of the relevant factors set forth in section 403.519, Florida Statutes. Due primarily to the expiration of existing PPAs, Seminole will have a need for 901 MW of additional generating capacity by the end of 2021, and that need will grow to 1,265 MW by the end of 2022. The proposed SCCF and SHCCF are part of an integrated resource plan that will ensure that Seminole has an adequate supply of power to serve its Members' needs at a reasonable cost. The competitive RFP process, together with separate economic analyses and risk analyses presented in this Need Study demonstrate that the selected resource plan, including the two new combined cycle facilities, is the most cost-effective, risk-managed alternative to meet Seminole's power supply needs. Seminole and its Members already utilize reasonably available DSM programs and renewable resources and they are committed to implementing more. Even with potential demand and energy reductions that could be achieved from additional conservation and DSM initiatives, however, there is still a significant capacity need and the resource plan including the new SCCF and SHCCF is the least cost alternative to reliably meet that need.

APPENDIX A

Seminole Electric Cooperative

Ten Year Site Plan

Seminole Electric
COOPERATIVE, INC.
IN PARTNERSHIP WITH THOSE WE SERVE

April 1, 2016

Moniaishi Mtenga
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Ms. Mtenga:

In accordance with Section 186.801, Florida Statutes, Seminole Electric Cooperative, Inc. hereby submits our 2016 Ten Year Site Plan.

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

Sincerely,

Julia A Diazgranados

Julia A Diazgranados
Planning Manager
813-739-1538 (office)
jdiazgranados@seminole-electric.com

Enclosure

cc: M. Sherman
L. Johnson

Seminole Electric
COOPERATIVE, INC.
IN PARTNERSHIP WITH THOSE WE SERVE

Ten Year Site Plan

2016 - 2025
(Detail as of December 31, 2015)
April 1, 2016

Submitted To:
State of Florida
Public Service Commission

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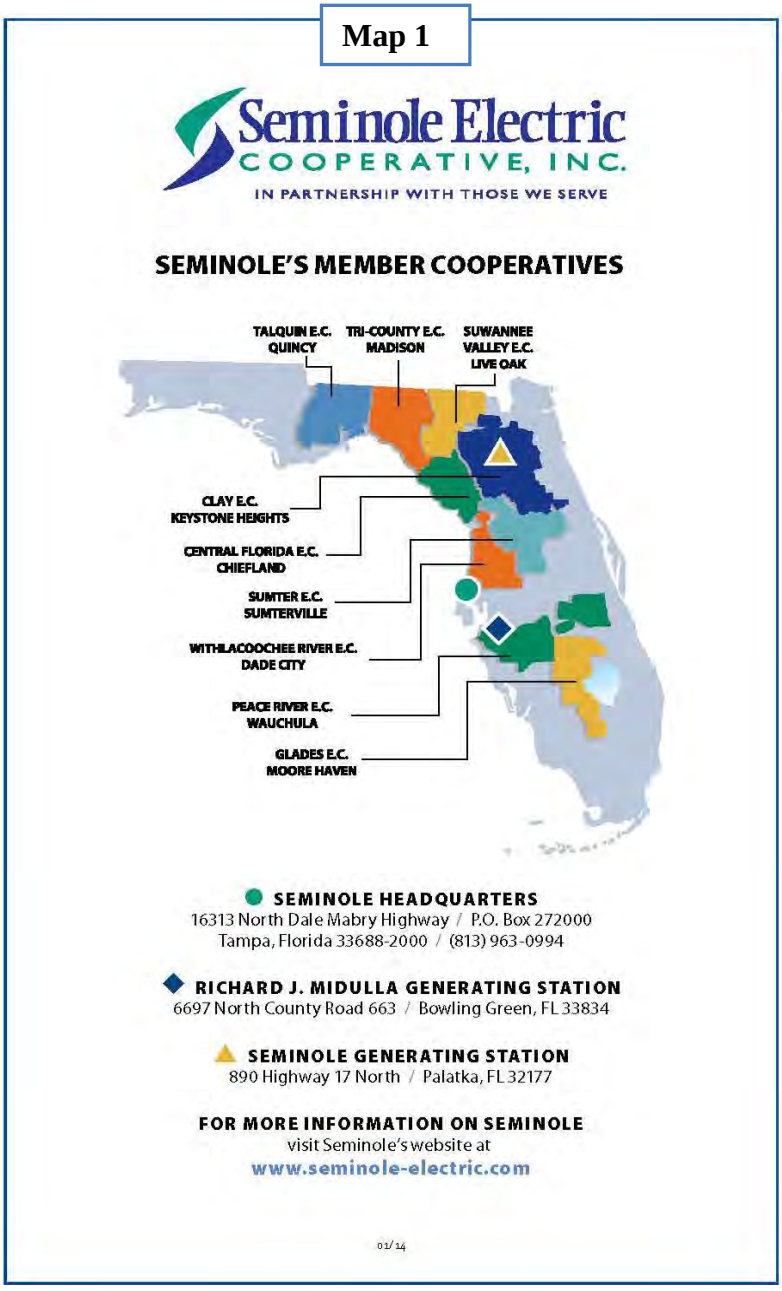
INDEX OF REQUIRED MAPS

1. DESCRIPTION OF EXISTING FACILITIES

1.1 Overview

Seminole Electric Cooperative, Inc. (Seminole) is a generation and transmission cooperative responsible for meeting the electric power and energy needs of its nine distribution cooperative members (Members). Member service areas are indicated on Map 1 below:

Map 1



Seminole provides full requirements service to all of its Members with the only exception relating to contracts between four Members with the Southeastern Power Administration (SEPA), which provides 26 MW or 1% of the total energy required by all Members. Seminole serves the aggregate loads of its Members with a combination of owned and purchased power resources. As of December 31, 2015, Seminole had total summer capacity resources of approximately 4,000 MW consisting of owned, installed net capacity of 2,012 MW and the remaining capacity in firm purchased power. Additional information on Seminole's existing resources can be found in Schedule 1 and Table 1.2 below.

1.2 Existing Facilities

1.2.1 Owned Generation

Seminole's existing generating facilities include:

1) Seminole Generating Station (SGS) Units 1 & 2 comprise a 1472 MW nameplate coal-fired plant located in Putnam County;
2) Midulla Generating Station (MGS) Units 1–3 comprise a 587 MW nameplate gas-fired combined cycle plant located in Hardee County; and,
3) MGS Units 4–8 comprise a 310 MW nameplate peaking plant.

Schedule 1
Existing Generating Facilities as of December 31, 2015

Plant	Unit No.	Location	Unit Type	Fuel		Fuel Transportation		Alt Fuel Days Use	Com In-Svc Date (Mo/Yr)	Expected Retirement (Mo/Yr)	Gen. Max Nameplate (MW)	Net Capability (MW)	
				Pri	Alt	Pri	Alt					Summer	Winter
SGS	1	Putnam County	ST	BIT	N/A	RR	N/A	N/A	02/84	Unk	736	626	664
SGS	2	Putnam County	ST	BIT	N/A	RR	N/A	N/A	12/84	Unk	736	634	665
MGS	1-3	Hardee County	CC	NG	DFO	PL	TK	Unk	01/02	Unk	587	482	539
MGS	4-8	Hardee County	CT	NG	DFO	PL	TK	Unk	12/06	Unk	310	270	310

Schedule Abbreviations:	General		
	Unit Type ST - Steam Turbine CC - Combined Cycle CT – Combustion Turbine PV – Photovoltaic	Fuel Type BIT - Bituminous Coal NG - Natural Gas DFO – Ultra low sulfur diesel Sun – Solar Energy	Fuel Transportation PL – Pipeline RR – Railroad TK – Truck

Unk – Unknown
N/A – Not applicable

1.2.2 Transmission

Seminole serves its Members' load primarily in three transmission areas: Seminole Direct Serve (SDS) system, Duke Energy Florida (DEF) system, and Florida Power & Light (FPL) system. Seminole's existing transmission facilities consist of 254 circuit miles of 230 kV and 141 circuit miles of 69 kV lines. Seminole's facilities are interconnected to the grid at twenty (20) 230 kV transmission interconnections with the utilities shown in Table 1.1.

Table 1.1

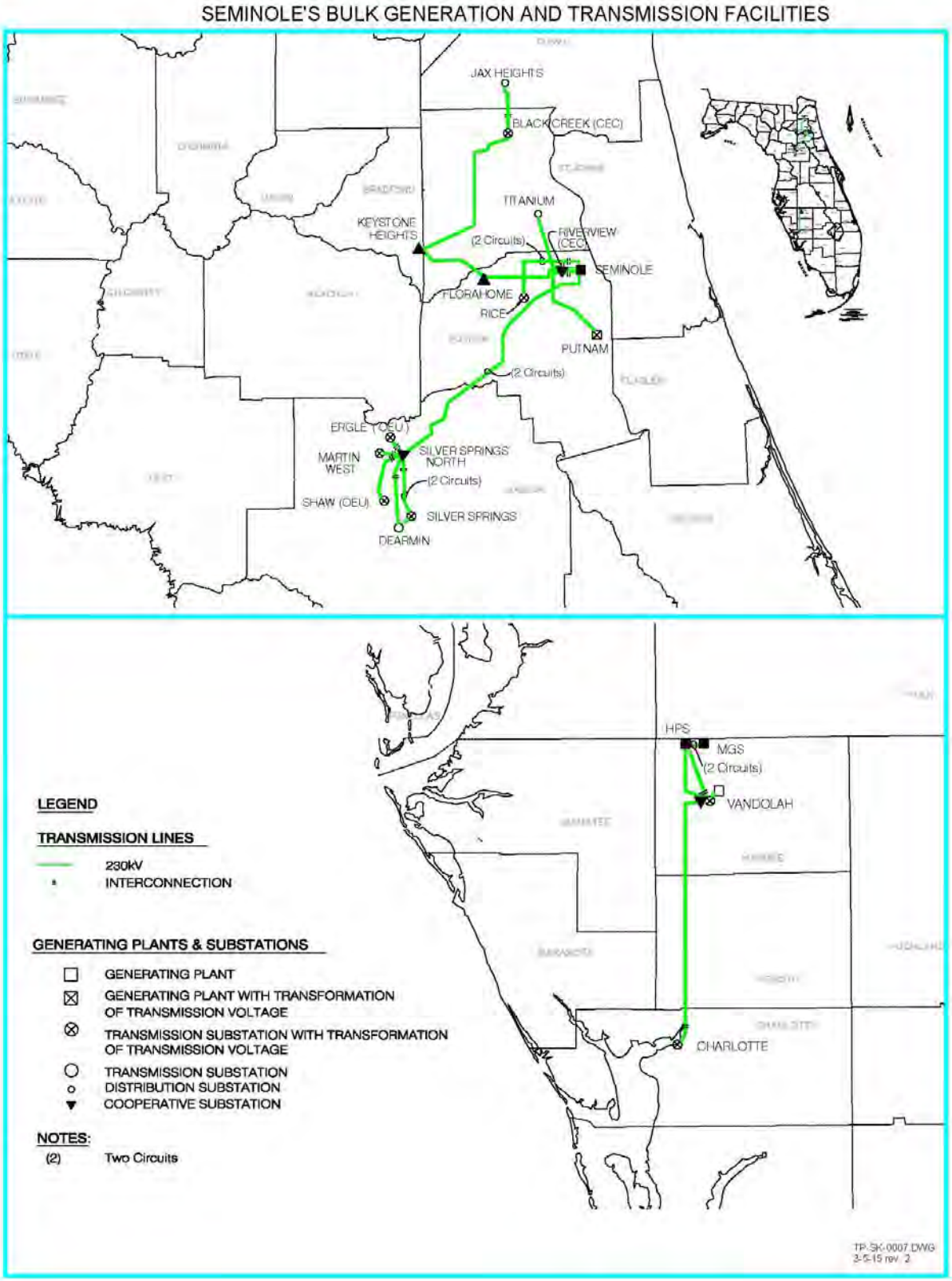
Transmission Grid Interconnections with Other Utilities

Utility	Voltage (kV)	Number of Interconnections
Florida Power & Light	230	6
Duke Energy Florida	230	7
JEA	230	1
City of Ocala	230	2
Tampa Electric Company	230	1
Hardee Power Partners	230	3

Note: This table describes physical facility interconnections, which do not necessarily constitute contractual interconnections for purposes of transmission service or interconnections between balancing areas.

Seminole contracts with other utilities for firm transmission service and interchange when required to serve loads. Map 2 below depicts Seminole's 230 kV transmission lines, including its interconnections with those entities identified in Table 1.1 above.

Map 2


SEMINOLE'S BULK GENERATION AND TRANSMISSION FACILITIES
JAX HEIGHTS
BLACK CREEK (CEC)
TITANIUM
KEYSTONE HEIGHTS
(2 Circuits)
RIVERVIEW (CEC)
SEMINOLE
FLORAHOME
RICE
PUTNAM
(2 Circuits)
ERGLE (OEU)
MARTIN WEST
SILVER SPRINGS NORTH
(2 Circuits)
SHAW (OEU)
SILVER SPRINGS
DEARMIN
HPS
MGS
(2 Circuits)
VANDOLAH
CHARLOTTE
LEGEND
TRANSMISSION LINES
230kV
INTERCONNECTION
GENERATING PLANTS & SUBSTATIONS
GENERATING PLANT
GENERATING PLANT WITH TRANSFORMATION OF TRANSMISSION VOLTAGE
TRANSMISSION SUBSTATION WITH TRANSFORMATION OF TRANSMISSION VOLTAGE
TRANSMISSION SUBSTATION
DISTRIBUTION SUBSTATION
COOPERATIVE SUBSTATION
NOTES:
(2) Two Circuits
TP-SK-0007.DWG
3-5-15 rev. 2

1.3 Purchased Power Resources

Table 1.2 below sets forth Seminole's purchased power resources.

Table 1.2

2015				
SUPPLIER	**FUEL**	**MW (WINTER RATINGS)**	**IN SERVICE DATE**	**END DATE**
Hardee Power Partners	Gas/Oil	445	1/1/2013	12/31/2032
Oleander Power Project	Gas/Oil	546	1/1/2010	5/31/2021
FPL	System	200	6/1/2014	5/31/2021
DEF	System	<1	6/1/1987	-
DEF	System	600	1/1/2014	12/31/2020
DEF	System	150	1/1/2014	12/31/2020
DEF	System	250	1/1/2014	5/31/2016
DEF	System	50	6/1/2016	12/31/2018
DEF	System	150	1/1/2014	5/31/2016
DEF	System	200-500	6/1/2016	12/31/2024
Lee County Florida	Waste Landfill	55	1/1/2009	12/31/2016
Telogia Power	Biomass	13	7/1/2009	11/30/2023
Seminole Energy, LLC	Landfill Gas	6.2	10/1/2007	3/31/2018
Brevard Energy, LLC	Landfill Gas	9	4/1/2008	3/31/2018
Timberline Energy, LLC	Landfill Gas	1.6	2/1/2008	3/31/2020
Hillsborough County	Waste Landfill	38	3/1/2010	2/28/2025
City of Tampa	Waste Landfill	20	8/1/2011	7/31/2026
Note: Seminole Electric Cooperative may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements.				

2. FORECAST OF ELECTRIC DEMAND AND ENERGY CONSUMPTION

2.1 Energy Consumption and Number of Customers

Residential consumer growth is projected to increase at an average annual rate of 1.6 percent from 2016 through 2025. Similarly, commercial consumer growth is projected to increase at an average annual rate of 1.4 percent during the same period. Residential energy sales are projected to grow at an average annual rate of 1.7 percent, and commercial energy sales are projected to grow at an average annual rate of 1.9 percent from 2016 through 2025.

Schedules 2.1, 2.2, and 2.3 below show the aggregate number of customers and energy consumption by customer classification of Seminole's nine Members, including other sales and purchases.

Schedule 2.1
History and Forecast of Energy Consumption and
Number of Customers by Customer Class

Year	Estimated Population Served by Members	Residential			
		Customers Per Household	GWh	Average Number of Customers	Average Consumption Per Customer (kWh)
2006	1,667,616	2.14	11,153	780,687	14,286
2007	1,716,841	2.14	11,444	803,957	14,235
2008	1,740,705	2.15	11,104	808,926	13,727
2009	1,748,408	2.15	11,293	811,767	13,912
2010	1,692,257	2.22	11,369	761,993	14,920
2011	1,716,516	2.24	10,412	765,279	13,605
2012	1,723,920	2.24	9,979	769,591	12,967
2013	1,749,359	2.25	10,018	777,493	12,885
2014	1,643,174	2.48	8,808	662,626	13,293
2015	1,666,850	2.48	9,068	673,215	13,470
2016	1,677,505	2.45	8,981	683,410	13,141
2017	1,697,061	2.44	9,177	695,982	13,185
2018	1,719,281	2.42	9,379	709,589	13,218
2019	1,746,279	2.42	9,555	722,026	13,234
2020	1,772,180	2.41	9,731	734,291	13,252
2021	1,795,824	2.41	9,892	745,826	13,263
2022	1,818,008	2.40	10,040	756,799	13,266
2023	1,839,569	2.40	10,183	767,621	13,266
2024	1,860,751	2.39	10,321	778,202	13,263
2025	1,881,770	2.39	10,452	788,493	13,256

NOTE: Actual value for 2013 and prior includes Lee County Electric Cooperative.
Estimated values for 2015.

Schedule 2.2

History and Forecast of Energy Consumption and

Number of Customers by Customer Class

Year	Commercial[1]			Other Sales (GWh)[2]	Total Member Sales to Ultimate Consumers (GWh)[3]
	GWh	Average Number of Customers	Average Consumption Per Customer (kWh)		
2006	4,634	84,345	54,941	158	15,945
2007	4,839	88,306	54,798	165	16,448
2008	4,894	86,121	56,827	163	16,161
2009	4,776	84,318	56,643	167	16,236
2010	4,525	78,788	57,433	158	16,052
2011	4,366	78,828	55,386	160	14,938
2012	4,456	80,598	55,287	164	14,599
2013	4,482	82,302	54,458	166	14,666
2014	4,001	72,632	55,086	151	12,960
2015	4,155	73,290	56,689	151	13,374
2016	4,146	74,567	55,600	142	13,268
2017	4,262	75,722	56,282	140	13,579
2018	4,364	77,002	56,676	142	13,885
2019	4,478	78,212	57,249	143	14,176
2020	4,562	79,377	57,467	145	14,437
2021	4,640	80,508	57,636	146	14,679
2022	4,712	81,613	57,738	148	14,900
2023	4,781	82,694	57,816	149	15,114
2024	4,848	83,749	57,884	151	15,319
2025	4,912	84,790	57,928	152	15,516

NOTE: Actual value for 2013 and prior includes Lee County Electric Cooperative.
Estimated values for 2015

[1] Includes Industrial and Interruptible Customers.

[2] Includes Lighting Customers.

[3] Excludes Sales for Resale and includes SEPA.

Schedule 2.3
History and Forecast of Energy Consumption and
Number of Customers by Customer Class

Year	Sales for Resale (GWh)	Utility Use & Losses, Less SEPA (GWh)*	Net Energy for Load (GWh)	Other Customers*	Total Number of Customers*
2006	0	1,288	17,233	5,101	870,133
2007	0	1,221	17,669	5,150	897,413
2008	0	1,171	17,332	5,075	900,122
2009	0	1,217	17,453	5,036	901,121
2010	0	1,294	17,346	4,956	845,737
2011	157	942	16,037	4,954	849,061
2012	134	1,036	15,769	4,818	855,007
2013	137	1,009	15,812	5,185	864,980
2014	170	724	13,854	5,308	740,566
2015	16	714	14,104	5,343	751,848
2016	5	651	13,925	5,332	763,309
2017	6	664	14,249	5,312	777,016
2018	6	675	14,566	5,335	791,927
2019	7	687	14,870	5,359	805,598
2020	9	687	15,133	5,392	819,060
2021	1	690	15,370	5,423	831,758
2022	0	702	15,602	5,455	843,868
2023	0	701	15,815	5,487	855,803
2024	0	707	16,026	5,517	867,467
2025	0	708	16,224	5,543	878,827

NOTE: Actual value for 2013 and prior includes Lee County Electric Cooperative
* Estimated values for 2015.

2.2 Annual Peak Demand and Net Energy for Load

Schedules 3.1, 3.2, and 3.3 provide Seminole's summer peak demand, winter peak demand and net energy for load, respectively. Net firm peak demand reflects the energy reduction due to controllable interruptible load used in the historical years or made available for use in the forecasted years. Since population is the primary driver for Seminole's load growth, Seminole does not create high and low forecasts based upon alternative economic conditions.

Schedule 3.1

History and Forecast of Summer Peak Demand (MW)

Year	Total	Wholesale	Retail	Interruptible Load[1]	Distributed Generation[2]	Residential		Commercial[5]		Net Firm Demand[4]
						Load Mgmt.[3]	Cons.	Load Mgmt.[3]	Cons.	
2006	3,813	3,813	0	0	51	130	N/A	N/A	N/A	3,632
2007	4,006	4,006	0	0	62	105	N/A	N/A	N/A	3,839
2008	3,778	3,778	0	0	48	100	N/A	N/A	N/A	3,630
2009	3,987	3,987	0	0	62	101	N/A	N/A	N/A	3,824
2010	3,714	3,714	0	0	67	99	N/A	N/A	N/A	3,548
2011	3,829	3,829	0	0	79	97	N/A	N/A	N/A	3,653
2012	3,525	3,525	0	0	0	97	N/A	N/A	N/A	3,428
2013	3,665	3,665	0	0	0	99	N/A	N/A	N/A	3,566
2014	3,155	3,155	0	0	0	67	N/A	N/A	N/A	3,088
2015	3,092	3,092	0	0	0	71	N/A	N/A	N/A	3,021
2016	3,207	3,207	0	32	78	73	N/A	N/A	N/A	3,024
2017	3,275	3,275	0	41	78	74	N/A	N/A	N/A	3,082
2018	3,337	3,337	0	41	78	75	N/A	N/A	N/A	3,143
2019	3,396	3,396	0	41	78	76	N/A	N/A	N/A	3,201
2020	3,445	3,445	0	32	78	77	N/A	N/A	N/A	3,257
2021	3,480	3,480	0	32	78	78	N/A	N/A	N/A	3,291
2022	3,535	3,535	0	42	78	79	N/A	N/A	N/A	3,336
2023	3,576	3,576	0	41	78	80	N/A	N/A	N/A	3,377
2024	3,619	3,619	0	41	78	81	N/A	N/A	N/A	3,419
2025	3,657	3,657	0	41	78	82	N/A	N/A	N/A	3,457

NOTE: Actual value for 2013 and prior includes Lee County Electric Cooperative.

[1] Excludes Wholesale Interruptible Purchases

[2] Distributed Generation reflects customer-owned self-service generation.

[3] Historical load management data is actual amount exercised at the time of the seasonal peak demand.

[4] Excludes SEPA allocations.

[5] Reduced demands associated with Member Cooperative coincident demand billing are not reflected, although reductions are reflected in "Total" & "Net Firm Demand"

Schedule 3.2

History and Forecast of Winter Peak Demand (MW)

Year	Total	Wholesale	Retail	Interruptible Load[1]	Distributed Generation[2]	Residential		Commercial		Net Firm Demand[4]
						Load Mgmt.[3]	Cons.	Load Mgmt.[3]	Cons.	
2005-06	4,349	4,349	0	0	47	77	N/A	N/A	N/A	4,225
2006-07	4,178	4,178	0	0	43	109	N/A	N/A	N/A	4,026
2007-08	4,410	4,410	0	0	56	133	N/A	N/A	N/A	4,221
2008-09	4,946	4,946	0	0	58	150	N/A	N/A	N/A	4,738
2009-10	5,263	5,263	0	0	64	152	N/A	N/A	N/A	5,047
2010-11	4,476	4,476	0	0	55	106	N/A	N/A	N/A	4,315
2011-12	4,118	4,118	0	0	66	134	N/A	N/A	N/A	3,918
2012-13	3,839	3,839	0	0	0	132	N/A	N/A	N/A	3,707
2013-14	3,333	3,333	0	0	0	93	N/A	N/A	N/A	3,240
2014-15	3,696	3,696	0	0	0	103	N/A	N/A	N/A	3,593
2015-16[5]	3,403	3,403	0	0	0	96	N/A	N/A	N/A	3,307
2016-17	3,696	3,696	0	36	78	101	N/A	N/A	N/A	3,481
2017-18	3,756	3,756	0	38	78	102	N/A	N/A	N/A	3,539
2018-19	3,815	3,815	0	38	78	103	N/A	N/A	N/A	3,596
2019-20	3,869	3,869	0	38	78	104	N/A	N/A	N/A	3,649
2020-21	3,919	3,919	0	38	78	106	N/A	N/A	N/A	3,698
2021-22	3,966	3,966	0	38	78	107	N/A	N/A	N/A	3,744
2022-23	4,010	4,010	0	38	78	108	N/A	N/A	N/A	3,787
2023-24	4,052	4,052	0	38	78	109	N/A	N/A	N/A	3,827
2024-25	4,091	4,091	0	38	78	110	N/A	N/A	N/A	3,866
2025-26	4,130	4,130	0	38	78	110	N/A	N/A	N/A	3,904

NOTE: Actual value for 2013-14 and prior includes Lee County Electric Cooperative.

[1] Excludes Wholesale Interruptible Purchases

[2] Distributed Generation reflects customer-owned self-service generation.

[3] Historical load management data is actual amount exercised at the time of the seasonal peak demand.

[4] Excludes SEPA allocations.

[5] Reduced demands associated with Member Cooperative coincident demand billing are not reflected, although reductions are reflected in "Total" & "Net Firm Demand"

Schedule 3.3

History and Forecast of Annual Net Energy for Load (GWh)

Year	Total	Conservation		Retail	Total Sales Including Sales for Resale*	Utility Use & Losses, less SEPA*	Net Energy for Load	Load Factor %
		Residential	Commercial					
2006	17,233	N/A	N/A	0	15,945	1,288	17,233	48.9
2007	17,669	N/A	N/A	0	16,448	1,221	17,669	50.1
2008	17,332	N/A	N/A	0	16,161	1,171	17,332	46.7
2009	17,453	N/A	N/A	0	16,236	1,217	17,453	42.1
2010	17,346	N/A	N/A	0	16,052	1,294	17,346	39.2
2011	16,037	N/A	N/A	0	15,095	942	16,037	46.7
2012	15,769	N/A	N/A	0	14,733	1,036	15,769	45.8
2013	15,812	N/A	N/A	0	14,803	1,009	15,812	45.7
2014	13,854	N/A	N/A	0	13,130	724	13,854	44.3
2015	14,104	N/A	N/A	0	13,390	714	14,104	48.7
2016	13,925	N/A	N/A	0	13,274	651	13,925	45.7
2017	14,249	N/A	N/A	0	13,585	664	14,249	46.0
2018	14,566	N/A	N/A	0	13,891	675	14,566	46.2
2019	14,870	N/A	N/A	0	14,183	687	14,870	46.5
2020	15,133	N/A	N/A	0	14,446	687	15,133	46.7
2021	15,370	N/A	N/A	0	14,680	690	15,370	46.9
2022	15,602	N/A	N/A	0	14,900	702	15,602	47.0
2023	15,815	N/A	N/A	0	15,114	701	15,815	47.2
2024	16,026	N/A	N/A	0	15,319	707	16,026	47.3
2025	16,224	N/A	N/A	0	15,516	708	16,224	47.4

NOTE: Actual value for 2013 and prior includes Lee County Electric Cooperative.

* Estimated values for 2015

2.3 Monthly Peak Demand and Net Energy for Load

Schedule 4 shows peak demand and net energy for load by month for 2015 actuals and 2016 through 2017 forecasts.

Schedule 4

Previous Year and 2-Year Forecast of Peak Demand and Net Energy for Load by Month

Month	2015 Actual		2016 Forecast		2017 Forecast	
	Peak Demand (MW)[1]	NEL (GWh)	Peak Demand (MW)[2]	NEL (GWh)	Peak Demand (MW)	NEL (GWh)
January	2,826	1,109	3,307	1,150	3,481	1,176
February	3,593	1,051	2,900	976	2,939	1,005
March	2,069	1,009	2,438	996	2,513	1,023
April	2,362	1,083	2,319	1,005	2,375	1,032
May	2,821	1,275	2,651	1,208	2,691	1,232
June	3,021	1,375	2,816	1,317	2,850	1,340
July	2,935	1,393	2,945	1,412	2,985	1,434
August	3,021	1,406	3,024	1,415	3,082	1,445
September	2,845	1,254	2,794	1,287	2,835	1,310
October	2,470	1,079	2,508	1,089	2,573	1,124
November	2,471	1,034	2,498	978	2,567	1,004
December	2,065	1,036	2,706	1,092	2,795	1,124
ANNUAL		**14,104**		**13,925**		**14,249**

[1] Peak Demand includes interruptible load; Excludes Distributed Generation, Load Management and SEPA allocations

[2] Peak Demand Excludes Interruptible Load, Distributed Generation, Load Management and SEPA allocations.

Note: Peak Demand for January 2016 is Actual.

2.4 Fuel Requirements

Seminole's coal, oil, and natural gas requirements for owned and future generating units are shown on Schedule 5 below.

Schedule 5
Fuel Requirements For Seminole Generating Resources

Fuel Requirements		Units	Actual 2014	Actual 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Nuclear		Trillion BTU	-	-	-	-	-	-	-	-	-	-	-	-
Coal		1000 Tons	3,231	3,048	3,072	3,272	3,284	3,167	3,320	3,154	2,902	3,045	3,070	2,982
Residual	Total	1000 BBL	-	-	-	-	-	-	-	-	-	-	-	-
	Steam	1000 BBL	-	-	-	-	-	-	-	-	-	-	-	-
	CC	1000 BBL	-	-	-	-	-	-	-	-	-	-	-	-
	CT	1000 BBL	-	-	-	-	-	-	-	-	-	-	-	-
Distillate	Total	1000 BBL	20	33	35	37	37	36	38	36	33	38	38	49
	Steam	1000 BBL	19	32	35	37	37	36	38	36	33	35	35	34
	CC	1000 BBL	1	1	-	-	-	-	-	-	-	3	3	14
	CT	1000 BBL	-	-	-	-	-	-	-	-	-	-	-	1
Natural Gas	Total	1000 MCF	19,250	18,895	26,486	27,644	27,248	28,789	28,129	38,259	48,144	49,279	50,326	56,447
	Steam	1000 MCF	-	-	-	-	-	-	-	-	-	-	-	-
	CC	1000 MCF	18,346	17,529	25,567	26,844	26,263	28,189	27,628	37,913	47,815	47,736	48,275	51,098
	CT	1000 MCF	904	1,366	919	800	985	600	501	346	329	1,543	2,051	5,349

NOTE: Above fuel is for existing and future owned generating resources (excludes purchased power contracts).
Totals may not add due to rounding.

2.5 Energy Sources by Fuel Type

Seminole's total system energy sources in GWh and percent for each fuel type are shown on Schedules 6.1 and 6.2, respectively, on the following pages. Generation listed under renewable reflects the renewable units output but Seminole may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements. Seminole's additional requirements for capacity beyond 2021 are assumed to be from gas/oil resources. Due to concerns over proposed environmental regulations that would impact coal units negatively, future coal generation was not currently considered as a viable resource option.

Schedule 6.1
Energy Sources (GWh)

Energy Sources		Units	Actual 2014	Actual 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Inter-Regional Interchange		GWh	-	-	-	-	-	-	-	-	-	-	-	-
Nuclear		GWh	-	-	-	-	-	-	-	-	-	-	-	-
Coal		GWh	8,159	7,803	7,680	8,151	8,193	7,895	8,274	7,815	7,136	7,498	7,563	7,363
Residual	Total	GWh	-	-	-	-	-	-	-	-	-	-	-	-
	Steam	GWh	-	-	-	-	-	-	-	-	-	-	-	-
	CC	GWh	-	-	-	-	-	-	-	-	-	-	-	-
	CT	GWh	-	-	-	-	-	-	-	-	-	-	-	-
Distillate	Total	GWh	35	36	37	39	43	42	37	38	29	35	35	50
	Steam	GWh	23	19	21	22	22	21	22	21	19	20	20	20
	CC	GWh	12	17	15	14	18	18	15	13	10	14	15	28
	CT	GWh	-	-	1	3	3	3	0	4	0	1	0	2
Natural Gas	Total	GWh	4,737	5,333	5,211	5,413	5,764	6,395	6,291	6,987	7,912	7,767	8,000	8,625
	Steam	GWh	-	-	-	-	-	-	-	-	-	-	-	-
	CC	GWh	4,570	5,052	5,093	5,294	5,579	6,256	6,200	6,901	7,875	7,603	7,787	8,086
	CT	GWh	167	281	118	119	185	139	91	86	37	164	213	539
NUG		GWh	-	-	-	-	-	-	-	-	-	-	-	-
Renewables *		GWh	923	932	997	646	566	538	531	530	525	515	428	186
Other		GWh	-	-	-	-	-	-	-	-	-	-	-	-
Net Energy for Load		GWh	13,854	14,104	13,925	14,249	14,566	14,870	15,133	15,370	15,602	15,815	16,026	16,224

NOTE: Net interchange, unit power purchases and DEF and FPL system purchases are included under source fuel categories.
Totals may not add due to rounding.
* Seminole Electric Cooperative may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements.

Schedule 6.2
Energy Sources (Percent)

Energy Sources		Units	Actual 2014	Actual 2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Inter-Regional Interchange		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Nuclear		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Coal		%	58.89%	55.32%	55.15%	57.20%	56.25%	53.09%	54.67%	50.84%	45.74%	47.41%	47.19%	45.38%
Residual	Total	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Steam	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CC	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CT	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Distillate	Total	%	0.25%	0.26%	0.27%	0.27%	0.30%	0.28%	0.24%	0.25%	0.19%	0.22%	0.22%	0.31%
	Steam	%	0.16%	0.14%	0.15%	0.15%	0.15%	0.14%	0.15%	0.14%	0.12%	0.13%	0.12%	0.12%
	CC	%	0.09%	0.12%	0.11%	0.10%	0.12%	0.12%	0.10%	0.08%	0.06%	0.09%	0.09%	0.17%
	CT	%	0.00%	0.00%	0.01%	0.02%	0.02%	0.02%	0.00%	0.03%	0.00%	0.01%	0.00%	0.01%
Natural Gas	Total	%	34.19%	37.81%	37.42%	37.99%	39.57%	43.01%	41.57%	45.46%	50.71%	49.11%	49.92%	53.16%
	Steam	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	CC	%	32.99%	35.82%	36.57%	37.15%	38.30%	42.07%	40.97%	44.90%	50.47%	48.08%	48.59%	49.84%
	CT	%	1.20%	1.99%	0.85%	0.84%	1.27%	0.93%	0.60%	0.56%	0.24%	1.04%	1.33%	3.32%
NUG		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Renewables		%	6.66%	6.61%	7.16%	4.53%	3.89%	3.62%	3.51%	3.45%	3.36%	3.26%	2.67%	1.15%
Other		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Net Energy for Load		%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

NOTE: Net interchange, unit power purchases and DEF and FPL system purchases are included under source fuel categories.
Totals may not add due to rounding.
* Seminole Electric Cooperative may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements

3. FORECASTING METHODS AND PROCEDURES

3.1 Forecasting Methodology

Seminole adheres to generally accepted methodology and procedures currently employed in the electric utility industry to model number of consumers, energy and peak demand. Models are developed using regression and time series techniques and each Member Cooperative is modeled separately. Seminole produces monthly forecasts for each Member system and, when applicable, by multiple rate classifications. Seminole's system forecast is the aggregate of Member system forecasts.

3.1.1 Consumer Model

Numbers of consumers are modeled with regression and time-series techniques. Model input data sources include Member Rural Utilities Services Form-7 Financial and Statistical Reports (RUS Form-7), Moody's Economic Consumer and Credit Analytics (ECCA) and University of Florida's Bureau of Economic and Business Research (UF BEBR). Explanatory variables analyzed in these models include population, number of households, housing stock, gross county product and employment.

Consumers are modeled by Member total and by rate classification. Rate class forecasts are reconciled to match in aggregate the total consumer forecasts by each Member. Territorial agreements and information provided directly from Member representatives regarding anticipated changes in service territories are incorporated in forecast projections. The "other" consumer class represents a small portion of Member energy sales, including irrigation, street and highway lighting, public buildings and sales for resale.

3.1.2 Energy Model

Forecasts of Member energy purchases from Seminole are developed using regression

and time-series techniques. Model input data sources include Seminole's System Operations Power Billing System (PBS), RUS Form-7, Moody's ECCA, UF BEBR and AccuWeather. Explanatory variables analyzed in this model include heating and cooling degrees, population, number of households, housing stock and gross county product. The dependent variable, Member energy purchases from Seminole, is projected by aggregating hourly delivery point meter load to the monthly aggregate level.

Member rate class energy purchases from Seminole are projected by scaling RUS Form-7 energy sales to end-users by distribution loss factors. Rate class energy purchases forecasts are reconciled to match in aggregate the Member-total purchases forecasts. Historical reductions in energy consumption due to conservation and efficiency are reflected in historical sales and purchases data and are implied in forecasts.

3.1.3 Peak Demand Model

Maximum peak demand is modeled by month and by season for each Member system using regression and time-series techniques. Model input data sources include Seminole's PBS, Moody's ECCA, UF BEBR and AccuWeather. Explanatory variables analyzed in this model include heating and cooling degrees, minimum and maximum temperature, population, number of households, housing stock, gross county product and load factor.

Seasonal peak models are designed to predict winter and summer peaks based on a range of months when the highest peaks can be expected to occur in each season. Winter seasonal peak models regress the highest peak during November through March of each year against contemporaneous explanatory variables. Summer seasonal peak models regress the highest peak beginning as early as May and as late as September of each year against contemporaneous explanatory variables. Seasonal peak forecasts replace monthly model forecast results for the

month each seasonal peak is most likely to occur.

Seminole's maximum demand is the aggregate of the one-hour simultaneous demands of all Members that maximizes the peak of the system in a single month. Forecasts of Seminole maximum demand is derived by applying coincident factors to Member-maximum demand forecasts. Future peak demands coincident with Seminole may be equal to or less than Member non-coincident maximum peaks, if the Member peak is normally not coincident with Seminole.

Load factor forecasts are derived through regression analysis of monthly temperatures and daily temperatures leading up to the peak day. These models are also developed by month and by season.

3.1.4 Alternative-Scenario Models

In addition to the base forecasts, Seminole produces high and low forecasts based on population growth alternatives provided by UF BEBR. Seminole's system is primarily residential and population growth is the primary driver for load growth. Therefore, high and low population scenarios, rather than alternative economic growth scenarios, are developed for each Member system. Seminole also forecasts load conditions given mild and severe temperatures in a Member's geographical region. Last, we show a set of alternative projections associated with the statistical error of each model at the ninety-five percent prediction interval.

3.2 Load Forecast Data

The primary resources for load forecasting are weather data, economic data, Member retail data and delivery point meter data. Number of consumers and sales by consumer class are provided by Members through the Form-7 financial report. Hourly delivery point load data is provided monthly by Seminole's System Operations department. Independent source data for economic and demographic statistics are provided by government and credit rating agencies, as

well as local universities. A listing of load forecast data sources is provided below.

3.2.1 Materials Reviewed and/or Employed

Load Data by Delivery Point

- Seminole's System Operations' Power Billing System (PBS)

Retail Number of Consumers, Energy Sales by Rate Class:

- Rural Utilities Services Form-7 Financial and Statistical Reports (RUS Form-7)

Individual Large Consumer Loads Over 1000 kVA:

- Member provided

Demographic and Economic Indicators:

- Moody's Analytics Economic Consumer and Credit Analytics (ECCA)
- University of Florida Bureau of Economic and Business Research (UF BEBR)

Weather Data:

- AccuWeather

3.3 Significant Load Forecast Assumptions

3.3.1 Economic Assumptions

Seminole Members serve electricity to primarily rural areas within 42 counties in the north, central and south regions of Florida, which differ uniquely in geography, weather, and natural resources. These large, low-density land areas are largely undeveloped. Population growth in Seminole's territory is sensitive to national economic and demographic factors that influence population migration from other states and metropolitan areas within Florida.

This load forecast reflects expectations that the national economy, and Florida's economy in particular, will continue to recover from the Great Recession over the next several years. In

addition, Member territories will likely benefit from consumer growth due to "baby-boomer" retiree migration into Florida from other states. Improving economic conditions and expected net migration are leading indicators for overall load growth. Despite the potential growth opportunities however, electricity usage per residential consumer trends over the last decade for electric utilities in the state of Florida are on average flat to negative and Seminole projects this trend will generally continue into the future.

3.3.2 Weather Assumptions

Hourly temperature data for 25 weather stations in the proximity of Member service territories are provided by AccuWeather. Weather statistics for each Member's geographical area are derived from a set of weather stations that represent the optimal simple average combination of weather station temperature observations that best project Member aggregate load by date and time, using the lowest mean absolute percent error as an indicator of statistical efficiency.

Historical weather statistics input into forecast models include monthly average, minimum and maximum temperatures, as well as monthly heating and cooling degree days. Monthly heating degree days represent the sum of degrees each daily average temperatures falls below 61° Fahrenheit, which is an approximate temperature when consumers turn on heating devices. Alternatively, monthly cooling degree days represent the sum of degrees each daily average temperatures exceeds 72° Fahrenheit, which is an approximate temperature when consumers turn on A/C units.

Normal weather statistics are the thirty year median of historical observations by month. Seasonal weather statistics are the thirty year median of historical observations by month in which the highest peak demand occurred in a summer and winter season. Extreme weather used for alternative-scenario forecasts include the tenth and ninetieth percentile of historical

temperatures, representing mild and severe events, respectively.

4. FORECAST OF FACILITIES REQUIREMENTS

Seminole's forecasts of capacity and demand for the projected summer and winter peaks are in the following Schedules 7.1 and 7.2, respectively. The forecasts include the addition of approximately 1,700 MW of capacity by 2025. Such capacity is needed to replace expiring purchased power contracts and to serve increased Member load requirements while maintaining Seminole's reliability criteria.

Seminole's capacity expansion plan includes the need for four 224 MW class combustion turbine units and one 741 MW combined cycle plant, none of which are currently sited. The four combustion turbine units are scheduled to enter service in December 2021, December 2022, and two units in December 2024. In addition, by June 2021, Seminole also has a need for 741 MW of combined cycle capacity. A final decision as to whether Seminole will construct and own these additional facilities will be based upon future economic studies. The inclusion of these units in Seminole's capacity expansion plan does not represent at this time a commitment for construction by Seminole.

In March of 2015 Seminole issued a request for proposals for 2 MW of solar photovoltaic (PV) energy either through an Engineer, Procure, and Construct (EPC) contract or through a Purchase Power Agreement (PPA) to be in commercial operation on or before November 2, 2016. Seminole has incorporated a 2 MW solar photovoltaic facility into Seminole's ten year plan. On March 21 2016 Seminole finalized agreements for a 2.2 MW solar facility to be constructed at Seminole's MGS site in Hardee County.

Schedule 7.1
Forecast of Capacity, Demand and Scheduled Maintenance at Time of Summer Peak

Year	Total Installed Capacity (MW)	Firm Capacity Import (MW)			Firm Capacity Export (MW)	QFs (MW)	Capacity Available (MW)		System Firm Summer Peak Demand (MW)		Reserve Margin Before Maintenance		Scheduled Maintenance (MW)	Reserve Margin After Maintenance	
		PR and FR	Other Purchases	Total			Total	Less PR and FR	Total	Obligation	MW	% of Pk		MW	% of Pk
2016	2,012	0	1,595	1,595	0	0	3,607	3,607	3,024	3,024	583	19%	0	583	19%
2017	2,012	0	1,650	1,650	0	0	3,662	3,662	3,082	3,082	580	19%	0	580	19%
2018	2,012	0	1,635	1,635	0	0	3,647	3,647	3,143	3,143	504	16%	0	504	16%
2019	2,012	0	1,885	1,885	0	0	3,897	3,897	3,201	3,201	696	22%	0	696	22%
2020	2,012	0	1,883	1,883	0	0	3,895	3,895	3,257	3,257	639	20%	0	639	20%
2021	2,661	0	1,135	1,135	0	0	3,796	3,796	3,291	3,291	505	15%	0	505	15%
2022	2,862	0	986	986	0	0	3,848	3,848	3,336	3,336	512	15%	0	512	15%
2023	3,063	0	833	833	0	0	3,896	3,896	3,377	3,377	519	15%	0	519	15%
2024	3,063	0	881	881	0	0	3,944	3,944	3,419	3,419	525	15%	0	525	15%
2025	3,465	0	522	522	0	0	3,987	3,987	3,457	3,457	530	15%	0	530	15%

NOTES: 1. Total installed capacity and the associated reserve margins are based on Seminole's current base case plan and are based on a 15% reserve margin criterion.

2. Total Installed Capacity does not include SEPA or Solar.

3. Percent reserves are calculated at 15% of Seminole's obligation and include any surplus capacity.

Schedule 7.2
Forecast of Capacity, Demand and Scheduled Maintenance at Time of Winter Peak

Year	Total Installed Capacity (MW)	Firm Capacity Import (MW)			Firm Capacity Export (MW)	QFs (MW)	Capacity Available (MW)		System Firm Winter Peak Demand (MW)		Reserve Margin Before Maintenance		Scheduled Maintenance (MW)	Reserve Margin After Maintenance	
		PR and FR	Other Purchases	Total			Total	Less PR and FR	Total	Obligation	MW	% of Pk		MW	% of Pk
2016/17	2,178	0	2,322	2,322	0	0	4,500	4,500	3,481	3,481	1,019	29%	0	1,019	29%
2017/18	2,178	0	2,322	2,322	0	0	4,500	4,500	3,539	3,539	960	27%	0	960	27%
2018/19	2,178	0	2,307	2,307	0	0	4,485	4,485	3,596	3,596	889	25%	0	889	25%
2019/20	2,178	0	2,557	2,557	0	0	4,735	4,735	3,649	3,649	1,086	30%	0	1,086	30%
2020/21	2,178	0	2,086	2,086	0	0	4,264	4,264	3,698	3,698	565	15%	0	565	15%
2021/22	3,143	0	1,174	1,174	0	0	4,317	4,317	3,744	3,744	573	15%	0	573	15%
2022/23	3,368	0	999	999	0	0	4,366	4,366	3,787	3,787	579	15%	0	579	15%
2023/24	3,368	0	1,046	1,046	0	0	4,413	4,413	3,827	3,827	586	15%	0	586	15%
2024/25	3,816	0	642	642	0	0	4,458	4,458	3,866	3,866	592	15%	0	592	15%
2025/26	3,816	0	685	685	0	0	4,501	4,501	3,904	3,904	597	15%	0	597	15%

NOTES: 1. Total installed capacity and the associated reserve margins are based on Seminole's current base case plan and are based on a 15% reserve margin criterion.

2. Total Installed Capacity does not include SEPA or Solar.

3. Percent reserves are calculated at 15% of Seminole's obligation and include any surplus capacity.

4.1 Planned and Prospective Generating Facility Additions and Changes

Schedule 8 below shows Seminole's planned and prospective generating facility additions and changes.

Schedule 8
Planned and Prospective Generating Facility Additions and Changes

Plant Name	Unit No	Location	Unit Type	Fuel		Transportation		Const. Start Date	Comm. In-Service Date	Expected Retirement Date	Max Nameplate	Summer MW	Winter MW	Status
				Pri	Alt	Pri	Alt							
MGS Solar	1	Hardee County	PV	Sun		N/A		TBD	11/2016	Unk	2	2	2	P
Unnamed CC	1	TBA	CC	NG		PL		(1)	5/2021	Unk	741	649	741	P
Unnamed CT	1	TBA	CT	NG		PL		(1)	12/2021	Unk	224	201	224	P
Unnamed CT	2	TBA	CT	NG		PL		(1)	12/2022	Unk	224	201	224	P
Unnamed CT	3	TBA	CT	NG		PL		(1)	12/2024	Unk	224	201	224	P
Unnamed CT	4	TBA	CT	NG		PL		(1)	12/2024	Unk	224	201	224	P

NOTES:
(1) Future resource which may be existing or new as determined by future Request for Proposal results.
(2) Abbreviations – See Schedule 1
(3) MGS Solar is planned to be a leased facility

4.2 Proposed Generating Facilities

Schedule 9 below reports status and specifications of Seminole's proposed generating facilities.

Schedule 9 Status Report and Specifications of Proposed Generating Facilities		
1	Plant Name & Unit Number	MGS Solar Unit 1
2	Capacity a. Nameplate - AC (MW) b. Summer Firm - AC (MW): c. Winter Firm - AC (MW):	 2 0 0
3	Technology Type:	Photovoltaic
4	Anticipated Construction Timing a. Field construction start-date: b. Commercial in-service date:	 May 2016 November 2016
5	Fuel a. Primary fuel: b. Alternate fuel:	 Sun
6	Air Pollution Control Strategy	N/A
7	Cooling Method:	N/A
8	Total Site Area:	TBD
9	Construction Status:	Planned
10	Certification Status:	Planned
11	Status With Federal Agencies	N/A
12	Projected Unit Performance Data Planned Outage Factor (POF): Forced Outage Factor (FOF): Equivalent Availability Factor (EAF): Resulting Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	 N/A N/A N/A 26.8% N/A
13	Projected Unit Financial Data ($2021) Book Life (Years): Total Installed Cost (In-Service Year $/kW): Direct Construction Cost ($/kW): AFUDC Amount ($/kW): Escalation ($/kW): Fixed O&M ($/kW-Yr): Variable O&M ($/Run Hour): Variable O&M ($/MWH): K Factor:	 25 2,212 2,212 N/A N/A 0.02 N/A N/A N/A **NOTE:MGS Solar is planned to be a leased facility**

Schedule 9 **Status Report and Specifications of Proposed Generating Facilities**		
1	Plant Name & Unit Number	Unnamed Generating Station CC Unit 1
2	Capacity a. Summer (MW): b. Winter (MW):	 649 741
3	Technology Type:	Combined Cycle
4	Anticipated Construction Timing a. Field construction start-date: b. Commercial in-service date:	 May 2018 May 2021
5	Fuel a. Primary fuel: b. Alternate fuel:	 Natural Gas
6	Air Pollution Control Strategy	SCR
7	Cooling Method:	Wet Cooling Tower with Forced Air Draft Fans
8	Total Site Area:	TBD
9	Construction Status:	Planned
10	Certification Status:	Planned
11	Status With Federal Agencies	N/A
12	Projected Unit Performance Data Planned Outage Factor (POF): Forced Outage Factor (FOF): Equivalent Availability Factor (EAF): Resulting Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	 4.50 2.50 93.00 50% 6684 Btu/kWh (HHV) - ISO Rating
13	Projected Unit Financial Data ($2021) Book Life (Years): Total Installed Cost (In-Service Year $/kW): Direct Construction Cost ($/kW): AFUDC Amount ($/kW): Escalation ($/kW): Fixed O&M ($/kW-Yr): Variable O&M ($/Run Hour): Variable O&M ($/MWH): K Factor:	 30 808 742 66 Included in values above 12.72 1,728 0.08 N/A

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

1	Plant Name & Unit Number	Unnamed Generating Station CT Unit 1
2	Capacity a. Summer (MW): b. Winter (MW):	 201 224
3	Technology Type:	Combustion Turbine
4	Anticipated Construction Timing a. Field construction start-date: b. Commercial in-service date:	 December 2019 December 2021
5	Fuel a. Primary fuel: b. Alternate fuel:	 Natural Gas
6	Air Pollution Control Strategy	Dry Low NOx Burner
7	Cooling Method:	Air
8	Total Site Area:	TBD
9	Construction Status:	Planned
10	Certification Status:	Planned
11	Status With Federal Agencies	N/A
12	Projected Unit Performance Data Planned Outage Factor (POF): Forced Outage Factor (FOF): Equivalent Availability Factor (EAF): Resulting Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	 1.4 3.5 95.1 5% 9915 Btu/kWh (HHV) - ISO Rating
13	Projected Unit Financial Data ($2022) Book Life (Years): Total Installed Cost (In-Service Year $/kW): Direct Construction Cost ($/kW): AFUDC Amount ($/kW): Escalation ($/kW): Fixed O&M ($/kW-Yr): Variable O&M ($/MWH): K Factor:	 30 602 575 27 Included in values above 8.16 0.99* N/A *Variable O&M does not include start up charge of $7,301 per start

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

1	Plant Name & Unit Number	Unnamed Generating Station CT Unit 2
2	Capacity a. Summer (MW): b. Winter (MW):	 201 224
3	Technology Type:	Combustion Turbine
4	Anticipated Construction Timing a. Field construction start-date: b. Commercial in-service date:	 December 2020 December 2022
5	Fuel a. Primary fuel: b. Alternate fuel:	 Natural Gas
6	Air Pollution Control Strategy	Dry Low NOx Burner
7	Cooling Method:	Air
8	Total Site Area:	TBD
9	Construction Status:	Planned
10	Certification Status:	Planned
11	Status With Federal Agencies	N/A
12	Projected Unit Performance Data Planned Outage Factor (POF): Forced Outage Factor (FOF): Equivalent Availability Factor (EAF): Resulting Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	 1.4 3.5 95.11 5% 9915 Btu/kWh (HHV) - ISO Rating
13	Projected Unit Financial Data ($2023) Book Life (Years): Total Installed Cost (In-Service Year $/kW): Direct Construction Cost ($/kW): AFUDC Amount ($/kW): Escalation ($/kW): Fixed O&M ($/kW-Yr): Variable O&M ($/MWH): K Factor:	 30 613 588 25 Included in values above 8.40 1.01* N/A *Variable O&M does not include start up charge of $7,456 per start

Schedule 9 **Status Report and Specifications of Proposed Generating Facilities**		
1	Plant Name & Unit Number	Unnamed Generating Station CT Unit 3 & 4
2	Capacity a. Summer (MW): b. Winter (MW):	 201 224
3	Technology Type:	Combustion Turbine
4	Anticipated Construction Timing a. Field construction start-date: b. Commercial in-service date:	 December 2022 December 2024
5	Fuel a. Primary fuel: b. Alternate fuel:	 Natural Gas
6	Air Pollution Control Strategy	Dry Low NOx Burner
7	Cooling Method:	Air
8	Total Site Area:	TBD
9	Construction Status:	Planned
10	Certification Status:	Planned
11	Status With Federal Agencies	N/A
12	Projected Unit Performance Data Planned Outage Factor (POF): Forced Outage Factor (FOF): Equivalent Availability Factor (EAF): Resulting Capacity Factor (%): Average Net Operating Heat Rate (ANOHR):	 1.4 3.5 95.11 5% 9915 Btu/kWh (HHV) - ISO Rating
13	Projected Unit Financial Data ($2024) Book Life (Years): Total Installed Cost (In-Service Year $/kW): Direct Construction Cost ($/kW): AFUDC Amount ($/kW): Escalation ($/kW): Fixed O&M ($/kW-Yr): Variable O&M ($/MWH): K Factor:	 30 639 612 27 Included in values above 8.64 1.05* N/A *Variable O&M does not include start up charge of $7,765 per start

4.3 Proposed Transmission Lines

Schedule 10 below reports status and specifications of Seminole's proposed directly associated transmission lines corresponding with proposed generating facilities.

Schedule 10 **Status Report and Specifications of Proposed Associated Transmission Lines**		
1	Point of Origin and Termination:	Unknown
2	Number of Lines:	To be determined
3	Right-of-Way	To be determined
4	Line Length:	To be determined
5	Voltage:	To be determined
6	Anticipated Construction Timing:	To be determined
7	Anticipated Capital Investment:	To be determined
8	Substation:	To be determined
9	Participation with Other Utilities:	N/A

5. OTHER PLANNING ASSUMPTIONS AND INFORMATION

5.1 Transmission Reliability

In general, Seminole models its transmission planning criteria after the Florida Reliability Coordinating Council's ("FRCC") planning guidelines. The FRCC has modeled its planning guidelines consistent with the North American Electric Reliability Corporation's ("NERC") Reliability Standards. In addition, Seminole uses the following voltage and thermal criteria as guidelines for all stations:

1. No station voltages generally above 1.05 per unit or below 0.90 per unit under normal or contingency conditions.
2. Transmission facilities shall not exceed their applicable facility rating under normal or contingency conditions.

Since sites for future generation have not been selected, Seminole has not yet modeled any associated transmission or evaluated constraints and/or plans for alleviating such constraints.

5.2 Plan Economics

Power supply alternatives are compared against a base case scenario which is developed using the most recent load forecast, fuel forecast, operational cost assumptions, and financial assumptions. Various power supply options are evaluated to determine the overall effect on the present worth of revenue requirements (PWRR). All other things being equal, the option with the lowest long-term PWRR is normally selected. Sensitivity analyses are done to test how robust the selected generation option is when various parameters change from the base study assumptions (e.g., load forecast, fuel price, and capital costs of new generation).

5.3 Fuel Price Forecast

5.3.1 Coal

Spot and long-term market commodity prices for coal (at the mine) and transportation rates have shown increased volatility in recent years. This condition is expected to continue into the future, as environmental rules/standards, generating station retirements, coal supply/demand imbalances, coal transportation availability/pricing and world energy markets all combine to affect U.S. coal prices. The underlying value of coal at the mine will continue to be driven by changing domestic demand, reductions to the number of available coal suppliers, planned coal unit retirements, export opportunities for U.S. coal and federal/state mine safety rules/legislation affecting the direct mining costs. Additional coal delivered price increases and volatility will come from the cost of transportation equipment (railcars), handling service contracts and freight transportation impacts. Railroads are also affected by federal rules and legislative changes and fuel oil markets, which are impacting the volatility of the cost of rail service in the U.S. As long-term rail transportation contracts come up for renewals, the railroads have placed upward pressure on delivered coal costs to increase revenues to overcome operating cost increases and reduced demand. However, since 2012, lower natural gas prices have created an opportunity for electric utilities to swap natural gas for coal-fired generation and this price arbitrage may have reduced the railroads' near-term ability to apply upward pricing pressure during contract renewals. CSX Transportation, Inc. is Seminole's sole coal transport provider and the parties are operating under a confidential multi-year rail transportation contract. Seminole also has a confidential multi-year coal contract with Alliance Coal, LLC providing a majority of our coal requirements from the Illinois Basin. Both of these existing relationships reduce Seminole's coal price volatility risk for the near term.

5.3.2 Fuel Oil

The domestic price for fuel oils will continue to reflect the price volatility of the world energy market for crude oil and refined products. In late 2014 and through 2015, the price for fuel oil moved down significantly across the globe. Seminole is currently only purchasing ultra-low sulfur fuel oil for its generating stations.

5.3.3 Natural Gas

At year-end 2015, natural gas prices were near $2.30 per mmBtu and nominal Henry Hub prices are projected to increase slowly over the next ten years nearing $4.00 per mmBtu at the end of the ten-year study period.

5.3.4 Modeling of Fuel Sensitivity

Given the uncertainty of future fuel prices, the historical volatility of natural gas prices, and Seminole's reliance on gas as a significant component of its fuel portfolio, it is prudent to evaluate the impact of various gas prices on its alternative resources for meeting future needs. For this, Seminole incorporates both a high and low natural gas price forecast as a complement to its base case price forecast to support resource planning. Calculated with available market information (e.g. projected volatility of gas prices), Seminole’s high/low gas price curves form a statistical confidence interval around its base case price forecast. Seminole's base fuel price forecast for this Ten Year Site Plan does not take into account potential federal carbon emission initiatives, such as the proposed Clean Power Plan, that if approved, would impact the market prices for all fuels. If legislation that penalizes carbon emissions is enacted in future years, Seminole’s costs to use all fossil fuels will rise since all fossil fuels emit carbon dioxide when burned. Further, the price of natural gas and fuel oil relative to coal may rise because of the associated carbon emissions penalty imposed on coal, the competing fuel.

5.4 Coal/Gas Price Differential

The current natural gas and coal markets continue to reflect a significant narrowing, and even inversion during some years, of the price spread that existed between the two fuels over the prior ten years primarily due to soft gas prices. This spread is expected to remain compressed throughout the study period given the projected slow rise in gas prices.

5.5 Modeling of Generation Unit Performance

Existing units are modeled with forced outage rates and heat rates for the near term based on recent historical data. The long-term rates are based on a weighting of industry average data or manufacturers' design performance data.

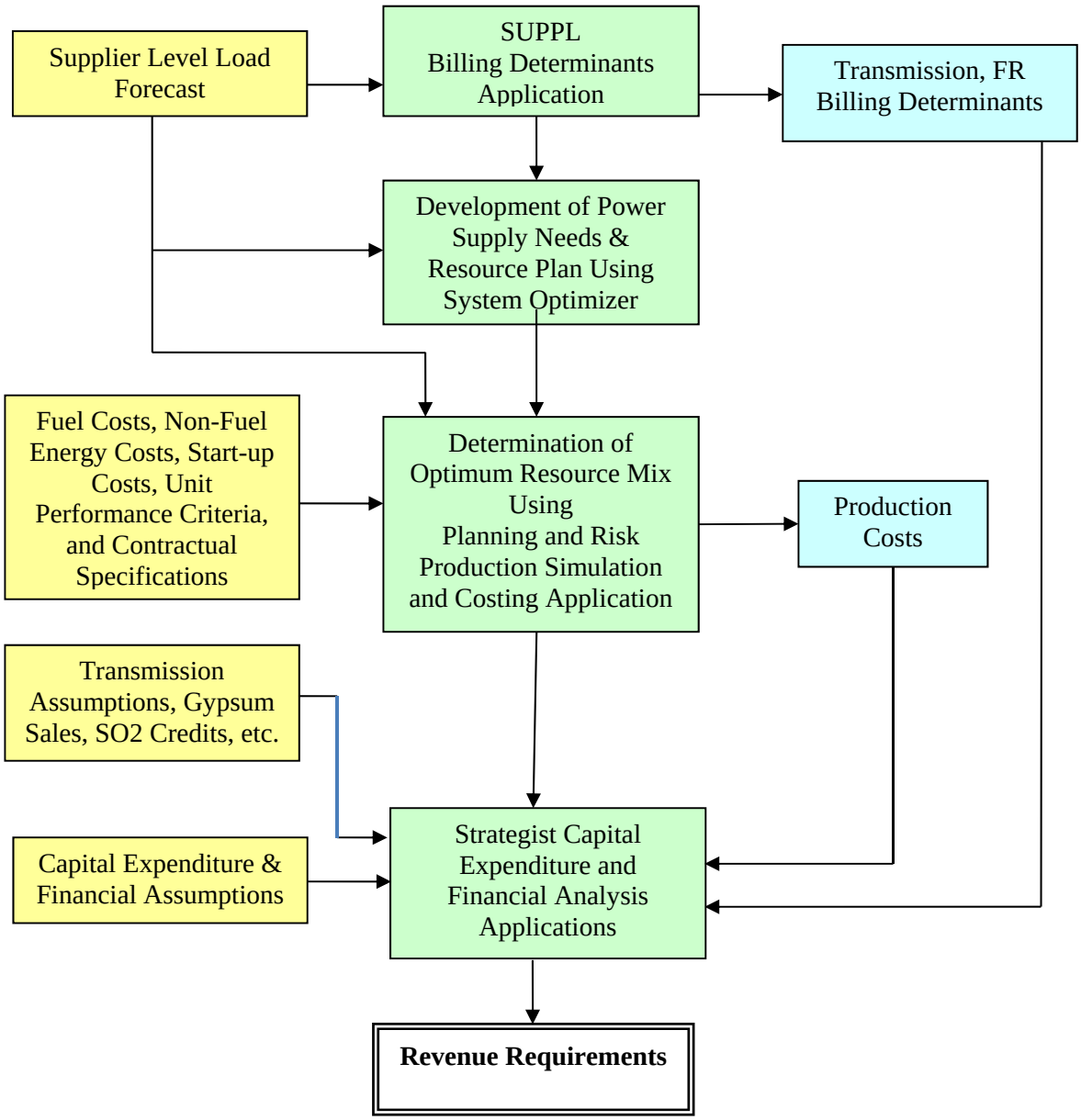
5.6 Financial Assumptions

Expansion plans are evaluated based on Seminole's forecast of market-based loan fund rates.

5.7 Resource Planning Process

Seminole's primary long-range planning goal is to develop the most cost-effective way to meet its Members' load requirements while maintaining high system reliability. Seminole's optimization process for resource selection is based primarily on total revenue requirements. As a not-for-profit cooperative, revenue requirements translate directly into rates to our Members. The plan with the lowest revenue requirements is generally selected, assuming that other factors such as reliability impact, initial rate impact, and strategic considerations are neutral. Seminole also recognizes that planning assumptions change over time, so planning decisions must be robust and are, therefore, tested over a variety of sensitivities. A flow chart of Seminole's planning process is shown below in Figure 5.1.

Figure 5.1
Resource Planning Process



5.8 Reliability Criteria

The total amount of generating capacity and reserves required by Seminole is affected by Seminole's load forecast and its reliability criteria. Reserves serve two primary purposes: to provide replacement power during generator outages; and to account for load forecast uncertainty. Seminole's primary reliability criteria is a minimum reserve margin of 15% during the peak season which ensures that Seminole has adequate generating capacity to provide reliable service to its Members and to limit Seminole's emergency purchases from interconnected, neighboring systems.

5.9 DSM Programs

Seminole promotes Member involvement in demand side management (DSM) through coincident peak billing and time-of-use energy rates as well as substation level conservation voltage reduction (CVR). The majority of Seminole's Members are active in managing their peak demand via one or more of these programs and several Members offer a time of use rate and a curtailable service rate to their commercial consumers for shifting energy usage from on-peak to off-peak periods.

Seminole's load management generation programs utilize standby generation on commercial consumer loads to lower demands at the time of the Seminole system peak demand. This program allows Seminole's Members to install distributed peaking generation resources on their system and/or to partner with their retail end-users to install "behind the meter" customer-based distributed generation (DG) to operate as dispatchable load management resources for Seminole's system, while providing load-center based generation to improve system reliability.

Seminole's load forecast accounts for reductions in peak demand resulting from DSM programs. Energy efficiency and energy conservation programs implemented by Seminole

Members have not been specifically quantified or estimated, but are both reflected in Seminole's load history and extrapolated into the future.

5.10 Strategic Concerns

In the rapidly changing utility industry, strategic and risk related issues are becoming increasingly important and will continue to play a companion role to economics in Seminole's power supply planning process. Seminole values resource diversity as a hedge against a variety of risks, as evidenced by our current generation portfolio. Long-term resources contribute stability while shorter term arrangements add flexibility. Seminole considers both system and unit-specific capacity when determining our reserve requirements. Resource location and transmission interconnection is also a consideration for Seminole in constructing its portfolio. Flexibility in fuel supply is another significant strategic concern. A portfolio that relies on a diverse number of fuel types is better protected against extreme price fluctuations, supply interruptions, and transportation constraints/instability. Seminole believes that the existing and future diversity in its power supply plan has significant strategic value, leaving Seminole in a good position to respond to both market and industry changes while remaining competitive.

The ongoing debate over the further need to regulate carbon emissions, mercury emissions and/or whether to establish renewable resource mandates has introduced new risks for electric utilities – among them is the risk of the most cost-effective fuels and associated technologies under current environmental regulations could change via new federal or state emissions rules. Using the best available information, Seminole is addressing these risks through its evaluation of a range of scenarios to assess what constitutes the best generation plan to ensure adequate and competitively priced electric service to its Members. Given the current regulatory environment, Seminole has assumed that all future large generation additions will be primarily

fueled with natural gas. Seminole is also reviewing the possibility of renewable generation additions, including solar.

5.11 Procurement of Supply-Side Resources

In making decisions on future procurement of power supply, Seminole compares self-build, acquisition and purchased power alternatives. Seminole solicits proposals from reliable counterparties. Seminole's evaluation of its options includes an assessment of economic life cycle cost, reliability, operational flexibility, strategic concerns and risk elements.

5.12 Transmission Construction and Upgrade Plans

Seminole is assessing future generation projects and needs for new, upgraded, or reconfigured transmission facilities over the ten-year planning horizon. At this time, Seminole has no specific transmission plans for future generating unit additions.

6. ENVIRONMENTAL AND LAND USE INFORMATION

6.1 Potential Sites

6.1.1 Gilchrist Site – Gilchrist County, Florida

Seminole owns land in Gilchrist County but has not made a final determination if or when the site will be used for any of Seminole's future resource requirements. The Gilchrist site is approximately five-hundred thirty (530) acres in size. The site is located in the central portion of Gilchrist County, approximately eight (8) miles north of the City of Trenton and may be suitable for installation of generation or transmission resources. Much of the site has been used for silviculture (pine plantation) and consists of large tracts of planted longleaf and slash pine communities. Few natural upland communities remain. Most of these large tracts have been

harvested, leaving xeric oak and pine remnants. A few wetland communities remain on the east side of the site with relatively minor disturbances due to adjacent silvicultural activities.

The initial site evaluation in 2007 included wetland occurrence information documented on National Wetland Inventory (NWI) map(s) from the U.S. Fish and Wildlife Service (USFWS), soils maps and information from the National Resource Conservation Service (NRCS), records of any listed plants or animals known from Gilchrist County that are available from online data and records maintained by the Florida Natural Areas Inventory (FNAI) and the Atlas of Florida Vascular Plants maintained by the University of South Florida Herbarium, lists of federally listed plants and animals maintained by USFWS, and records of eagle nest locations and wading bird rookeries that might occur within the site available on the Florida Fish and Wildlife Conservation Commission (FWC) website. At such time as Seminole has determined the Gilchrist site should be considered a preferred site for the construction of generation or transmission facilities, Seminole will update the site evaluation and will obtain approval of the site certification application.

6.1.2 Seminole Generating Station (SGS) - Putnam County, Florida

SGS is located in a rural unincorporated area of Putnam County approximately five (5) miles north of the City of Palatka. The site is one thousand nine-hundred seventy-eight (1,978) acres bordered by U.S. 17 on the west, and is primarily undeveloped land on the other sides. The site was certified in 1979 (PA78-10) for two 650 MW class coal-fired electric generating units, SGS Units 1 & 2.

The area around the SGS site includes mowed and maintained grass fields and upland pine flatwoods. Areas further away from the existing units include live oak hammocks, wetland conifer forest, wetland hardwood/conifer forest, and freshwater marsh. A small land parcel

located on the St. Johns River is the site for the water intake structure, wastewater discharge structure, and pumping station to supply the facility with cooling and service water.

The primary water uses for SGS Units 1 and 2 are for cooling water, wet flue gas desulfurization makeup, steam cycle makeup, and process service water. Cooling and service water is pumped from the St. Johns River and groundwater supplied from on-site wells is for steam cycle makeup and potable use. The site is not located in an area designated as a Priority Water Resource Caution Area by the St. Johns River Water Management District.

The local government future land use for the area where the existing units are located is designated as industrial use, and the site has not been listed as a natural resource of regional significance by the regional planning council.

Water conservation measures that are incorporated into the operation of SGS include the collection, treatment and recycling of plant process wastewater streams. This wastewater reuse minimizes groundwater and service water uses. A portion of recirculated condenser cooling water (cooling tower blowdown) is withdrawn from the closed cycle cooling tower and discharged to the St. Johns River. Site stormwater is reused to the maximum extent possible and any not reused is treated in wet detention ponds and released to onsite wetlands.

6.2 Preferred Sites

6.2.1 Midulla Generating Station (MGS) – Hardee County, Florida

MGS is located in Hardee and Polk Counties about nine (9) miles northwest of Wauchula. The site is bordered by County Road 663 on the east and by The Mosaic Company on the south, north and west. Payne Creek flows along the site's south and southwestern borders. The site was originally strip-mined for phosphate and was reclaimed as pine flatwoods, improved pasture, and a cooling reservoir with a marsh littoral zone. The proposed solar project

will be located on approximately 29-acres of land on the west side of the current plant entrance road and to the north of three onsite above ground storage tanks. A more detailed description of environmental, land use, as well as water use and supply, is available in the site certification application PA-89-25SA.

6.2.1.1 Land and Environmental Features

a. U.S. Geological Survey Map

   See Map 5

b. Proposed Facilities Layout

   The current proposed configuration of the single-axis tracking solar facility is attached. See Map 6

c. Map of Site and Adjacent Areas

   See Map 7

d. Existing Land Uses of Site and Adjacent Areas

   The existing land use for the majority of MGS is listed as utilities and zoned as industrial. There is a large reservoir and some wetlands located onsite as well. The solar PV area of the site will be located in an area that is currently active cattle pasture. The adjacent areas include reclaimed mine lands with both forested and non-forested uplands and wetlands interspersed, as well as industrial land use designations.

e. General Environmental Features On and In the Site Vicinity

   1. Natural Environment

      The majority of the site is currently made up of the MGS facilities, a 570-acre cooling reservoir, pastureland and some forested and non-forested

uplands and wetlands interspersed. The PV site is to be built completely on an area that is currently pastureland.

2. Listed Species

   A Florida Natural Areas Inventory (FNAI) database query was done for the site and indicated no documented occurrences of any state or federal listed species within 1-mile. Wildlife field surveys were performed on August 26 and 27, as well as December 8, 2015, and no listed species or signs of their presence were observed. Based on this information, no negative impacts to threatened or endangered species are anticipated as a result of the PV project.

3. Natural Resources of Regional Significance Status

   There are no natural resources of regional significance on or adjacent to the site.

4. Other Significant Features

   Seminole is not aware of any other significant site features.

f. Design Features and Mitigation Options

   The design includes construction of a single-axis tracking solar PV facility with approximately 2.2 MW of power generation.

g. Local Government Future Land Use Designations

   The Hardee County Future Land Use Map shows the entire site designated under the industrial category which should include solar PV.

h. Site Selection Criteria Process

   The Seminole Solar site at MGS has been selected as the location of the PV

facility based on various factors including system load, interconnection availability, and proximity to existing Seminole operations and maintenance personnel, as well as economics.

i. Water Resources

Minimal amounts of water, if any, would be required for cleaning the PV panels. The water would be provided by water trucks or obtained from existing onsite permitted water resources.

j. Geological Features of Site and Adjacent Areas

The soil types found on and adjacent to the site include Smyrna fine sand, Myakka fine sand, Basinger fine sand, Floridana muck fine sand (depressional), Ona fine sand, and Bradenton-Felda-Chobee Association (frequently flooded). The soils are disturbed in most areas since the site is on reclaimed mine lands.

k. Projected Water Quantities for Various Uses

The PV site requires minimal water, if any, for the cleaning of the panels in the absence of sufficient rainfall.

l. Water Supply Sources by Type

A water supply source is not required for this site. Any needed water may be brought to the site by water truck or obtained from existing onsite permitted water resources.

m. Water conservation Strategies Under Consideration

The PV site does not require a permanent water source. Water conservation strategies include minimizing water use by cleaning the panels with water only in the absence of sufficient rainfall and leaving the vegetation in and around the site

as is with no required watering.

n. Water Discharges and Pollution Control

Although no discharges of water are planned at the PV site, the facility will implement Best Management Practices (BMP) to prevent and control the inadvertent release of pollutants.

o. Fuel Delivery, Storage, Waste Disposal and Pollution Control

No traditional fuel sources are required and no waste products will be generated at the site.

p. Air Emissions and Control Systems

Solar PV does not generate air emissions.

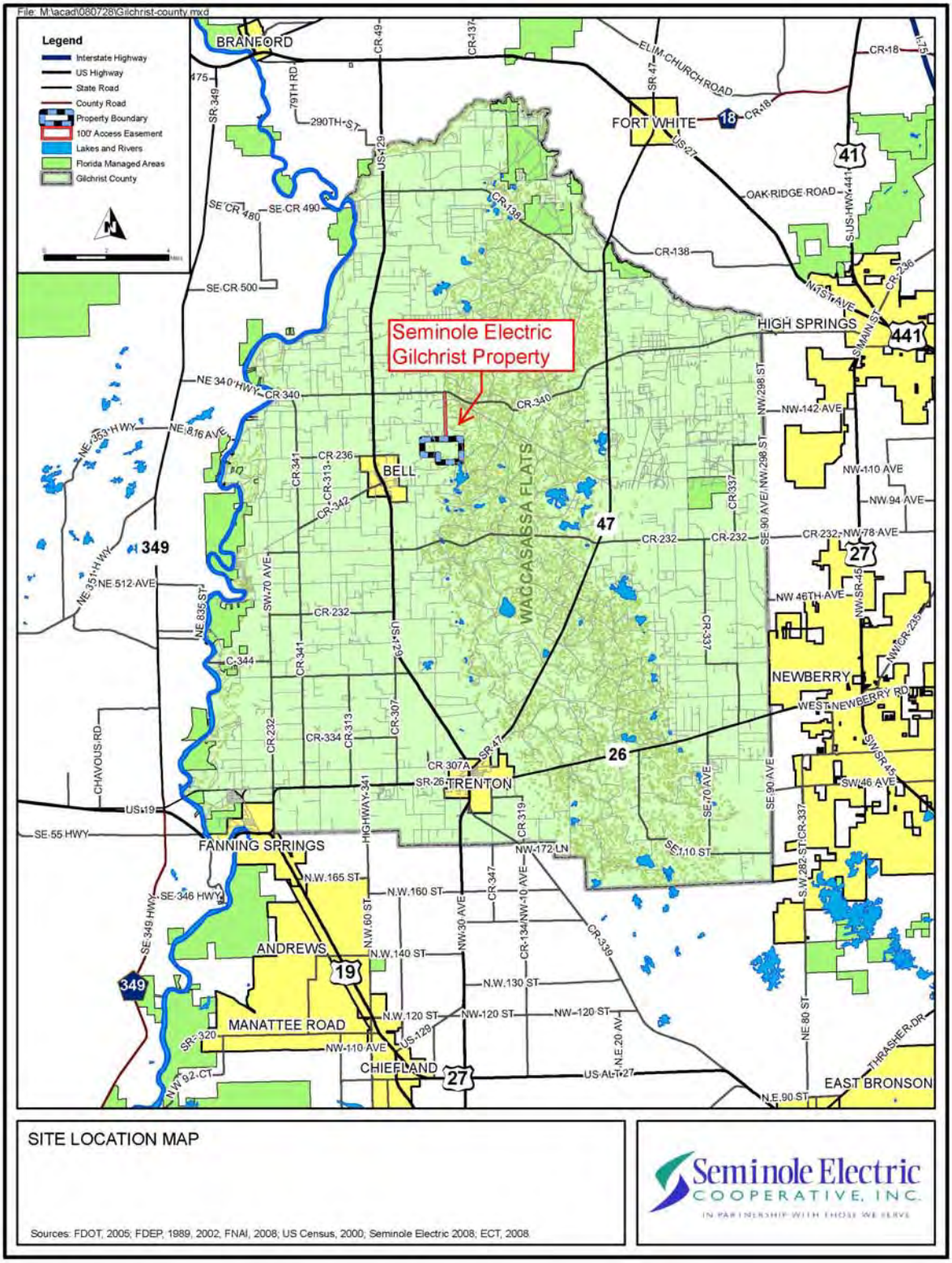
q. Noise Emissions and Control Systems

Solar PV does not generate noise.

r. Status of Applications

Applications will be made to the Florida Department of Environmental Protection (FDEP) to amend the current Conditions of Certification for MGS. Hardee County will be contacted for local development approval.

Map 3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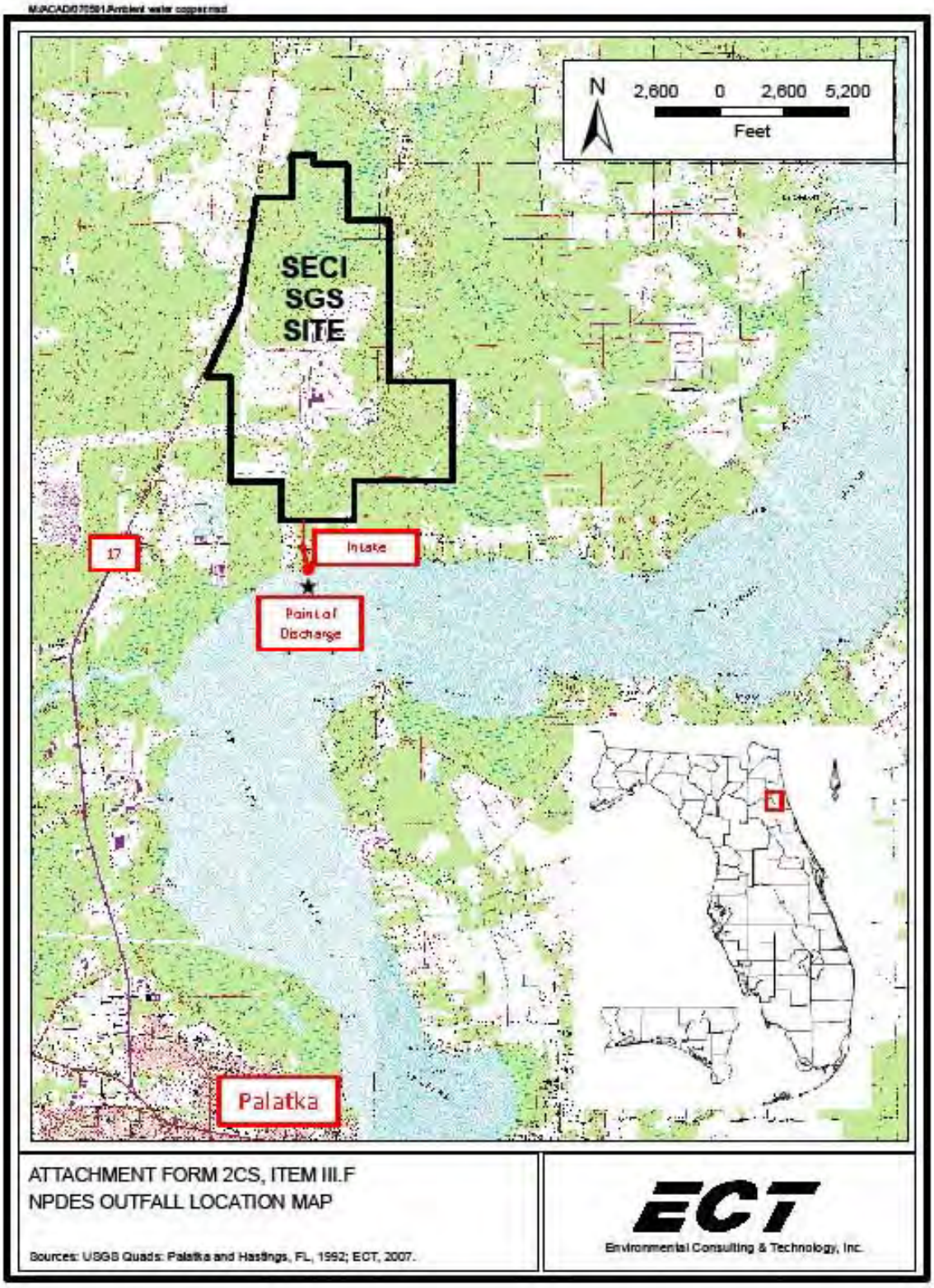
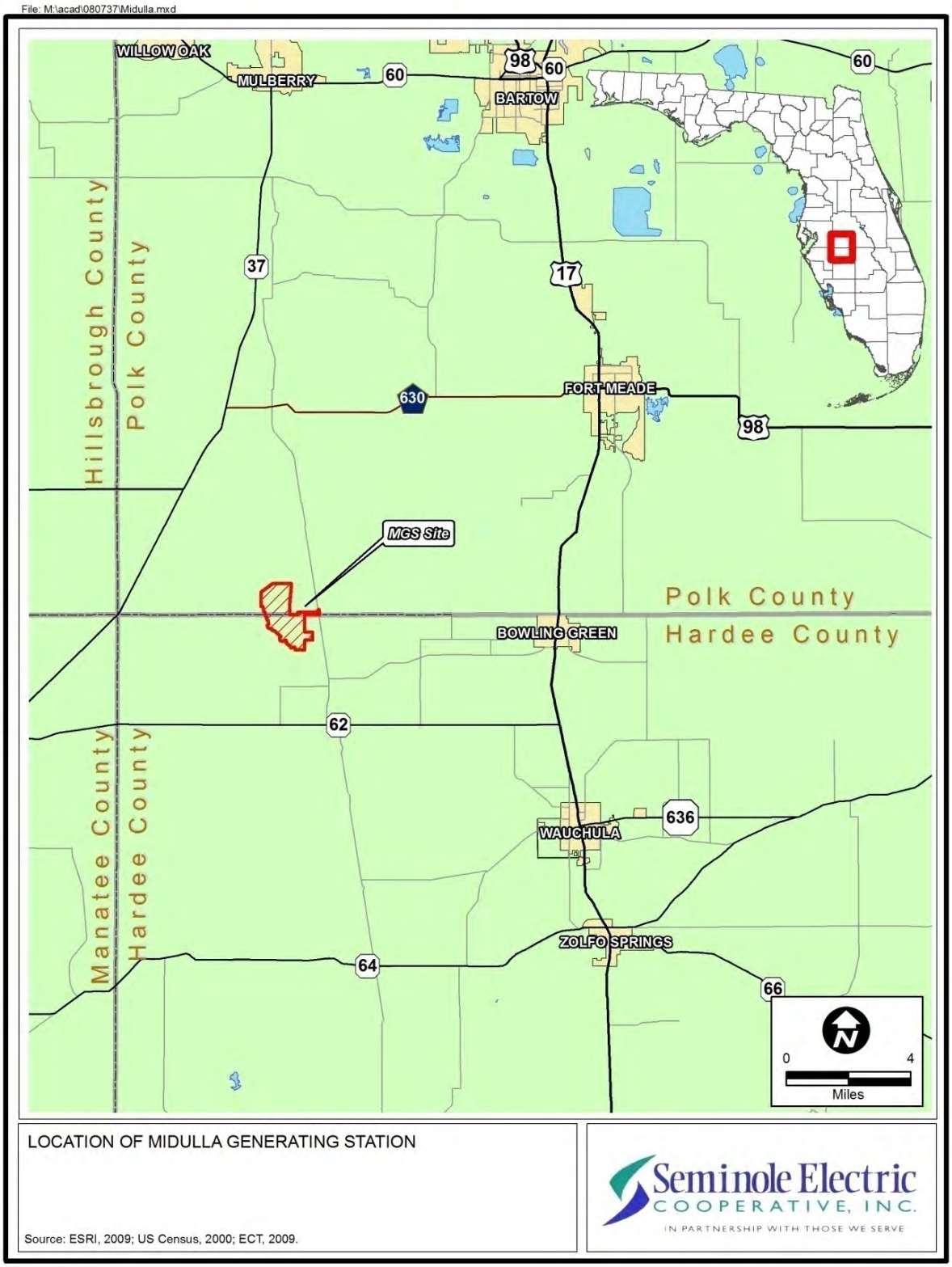
Legend
Interstate Highway
US Highway
State Road
County Road
Property Boundary
100' Access Easement
Lakes and Rivers
Florida Managed Areas
Gilchrist County
Seminole Electric
Gilchrist Property
BRANFORD
FORT WHITE
HIGH SPRINGS
BELL
NEWBERRY
TRENTON
FANNING SPRINGS
ANDREWS
MANATTEE ROAD
CHIEFLAND
EAST BRONSON
WACCASASSA FLATS
SITE LOCATION MAP
Sources: FDOT, 2005; FDEP, 1989, 2002, FNAI, 2008; US Census, 2000; Seminole Electric 2008; ECT, 2008
Seminole Electric
COOPERATIVE, INC.

Map 4


N
2,600 0 2,600 5,200
Feet
SECI
SGS
SITE
17
Intake
Point of
Discharge
Palatka
ATTACHMENT FORM 2CS, ITEM III.F
NPDES OUTFALL LOCATION MAP
Sources: USGS Quads: Palatka and Hastings, FL, 1992; ECT, 2007.
ECT
Environmental Consulting & Technology, Inc.

Map 5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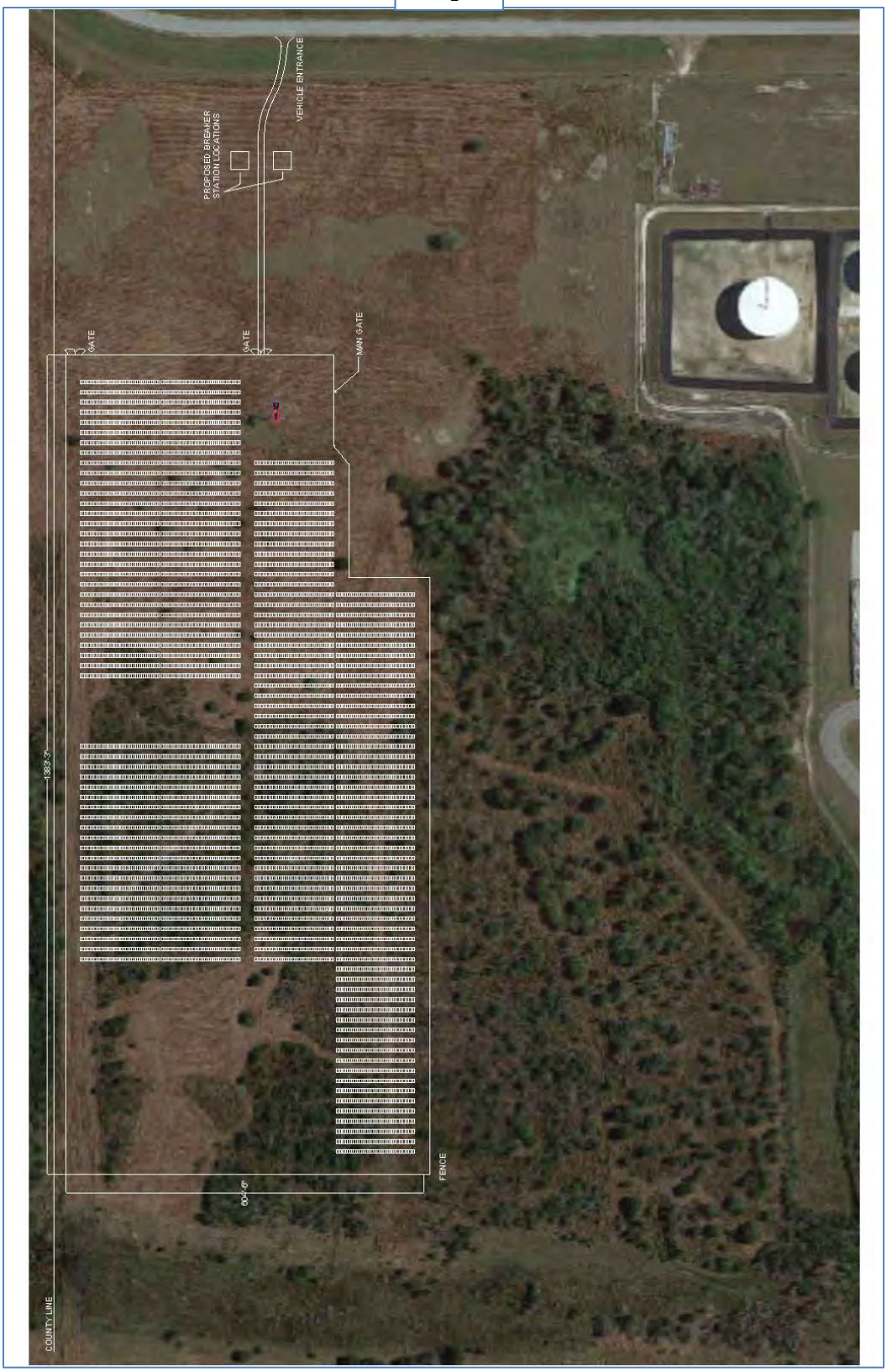
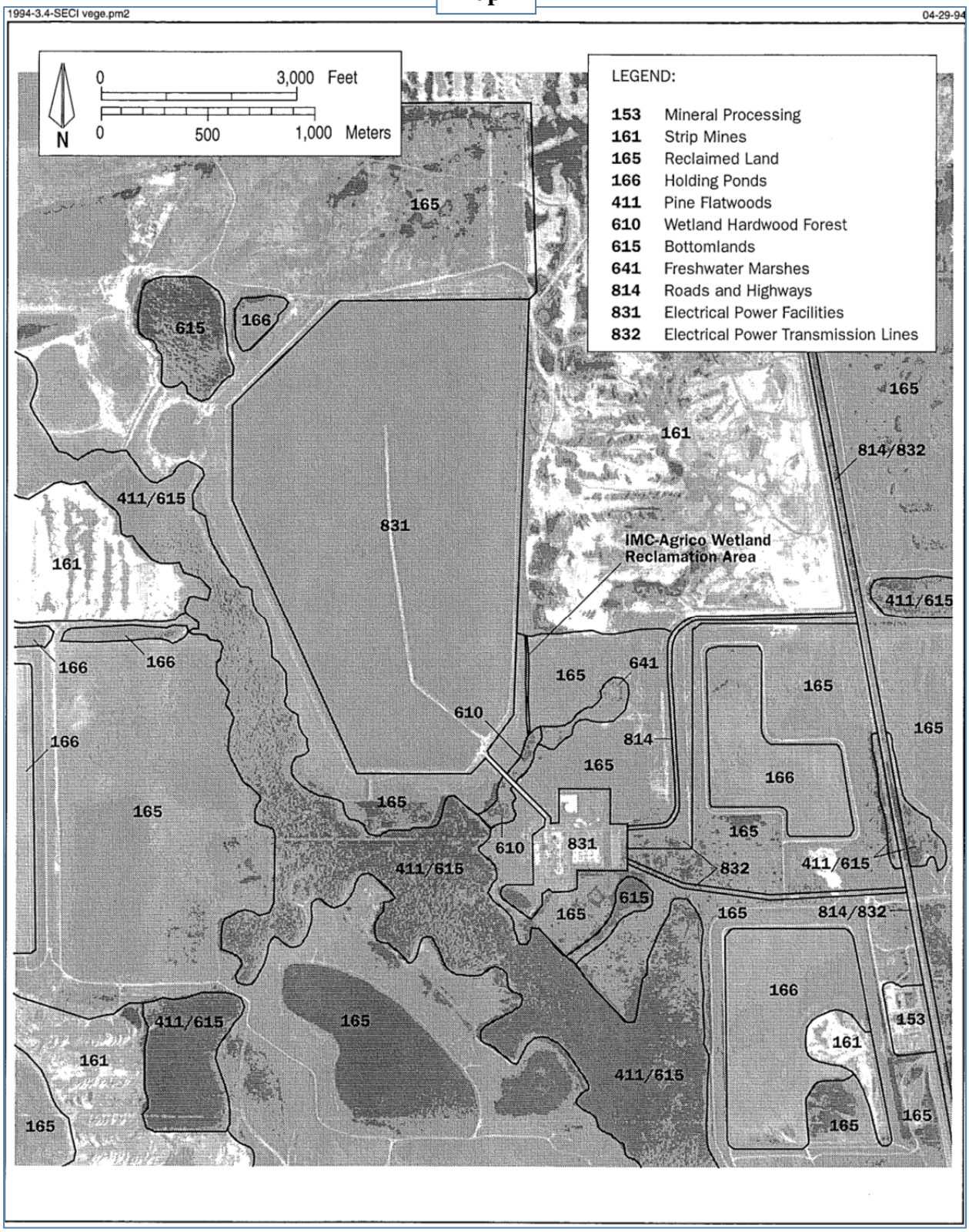
WILLOW OAK
MULBERRY
BARTOW
FORT MEADE
BOWLING GREEN
WAUCHULA
ZOLFO SPRINGS
Hillsbrough County
Polk County
Manatee County
Hardee County
MGS Site
Polk County
Hardee County
60
98
37
17
630
62
636
64
66
0
4
Miles
LOCATION OF MIDULLA GENERATING STATION
Source: ESRI, 2009; US Census, 2000; ECT, 2009.
Seminole Electric
COOPERATIVE, INC.
IN PARTNERSHIP WITH THOSE WE SERVE

Map 6


PROPOSED BREAKER STATION LOCATIONS
VEHICLE ENTRANCE
GATE
GATE
MAIN GATE
1333'-3"
FENCE
COUNTY LINE

Map 7


1994-3.4-SECI vege.pm2
04-29-94
N
0 3,000 Feet
0 500 1,000 Meters
LEGEND:
153 Mineral Processing
161 Strip Mines
165 Reclaimed Land
166 Holding Ponds
411 Pine Flatwoods
610 Wetland Hardwood Forest
615 Bottomlands
641 Freshwater Marshes
814 Roads and Highways
831 Electrical Power Facilities
832 Electrical Power Transmission Lines
IMC-Agrico Wetland Reclamation Area

APPENDIX B

Seminole Electric Cooperative

Request for Proposal

& Addenda

Request for Proposals ("RFP")

Request for Firm Capacity
RFP No. FC 2021

Seminole Electric
COOPERATIVE, INC.
IN PARTNERSHIP WITH THOSE WE SERVE

March 1, 2016

Request for Proposals
RFP No. FC 2021

Table of Contents

Proposal Forms

Seminole Electric Cooperative, Inc.
RFP No. FC 2021

March 1, 2016
Request for Firm Capacity

1.0 Purpose

Seminole Electric Cooperative, Inc. ("Seminole") is seeking proposals from qualified and eligible bidders to provide up to 1,000 MW of firm capacity, beginning as early as June 1, 2021. Seminole has determined a need for capacity of 600 MW in June 2021, with total needs increasing to 1,000 MW in June 2022 and thereafter. Seminole encourages proposals of base, intermediate, and/or peaking capacity. Proposals providing demand side options will also be considered for evaluation. The evaluation among the proposals received will be seeking the least cost option, in consideration of all identified risks, when such resource(s) is operated as a part of Seminole's overall generation mix. Seminole is also evaluating self-build alternatives for the identified capacity needs.

2.0 Description of Seminole Electric Cooperative, Inc.

Seminole is an electric generation and transmission ("G&T") cooperative headquartered in Tampa Florida. Seminole provides wholesale electric service to nine (9) member electric distribution cooperatives ("Members"). The Members are located throughout peninsular Florida, serving loads located in 42 counties. More than 1,600,000 consumers rely on Seminole and its Members for electric service. Seminole has a current peak demand of approximately 3,500 MW, and continues to experience growth in its system.

Seminole supplies the Members' capacity and energy requirements from a mix of firm resources including both owned generation and purchased power agreements, supplemented by various interchange purchases. Seminole has an objective to continue to diversify its portfolio between resources it owns and purchased generation assets and is using this RFP to identify capacity and energy resources to help achieve this objective while meeting its future growth needs.

Seminole maintains "A" category investment grade credit ratings of A-/Stable with S&P and A3/Stable with Moody's. For additional information about Seminole, please see our website at **http://www.seminole-electric.com**.

3.0 RFP Provisions

3.1 This RFP is open to all parties, including, but not limited to: independent power producers, renewable energy providers, exempt wholesale generators, qualifying facilities (under PURPA), power marketers, and electric utilities. Seminole will consider offers including purchased power proposals (system or tolling), generation proposals

that include Seminole taking an ownership/equity position in a portion of a facility, facility acquisitions, or proposals for firm energy.

3.2 Proposals received from specific units should be dispatchable and provide Seminole with scheduling flexibility (including real time control capability such as automatic generation control ("AGC")) and availability guarantees equivalent to the technical specifications of the units. Respondents should also indicate their ability to coordinate scheduled maintenance with Seminole.

3.3 Proposals sourced from a Seller's system of resources should be dispatchable and must offer intraday scheduling rights. Preference will be given to any proposals that can also provide contingency reserves, fast starts, and/or offer intra hour scheduling flexibility.

3.4 Seminole prefers the term of a proposal to be in the range of 2 years to 20 years, but may consider longer terms if proposed. Proposals longer than 30 years will not be considered.

3.5 Offers of capacity must be firm, from identifiable (either planned or existing) generating resources. Energy only products (such as Firm LD contracts) will be considered if adequate, reliable back-up capacity is specified and verifiable.

3.6 Proposals may be for less than the amount as shown in Section 1.0. However, proposals must be greater than a minimum of 25 MW.

3.7 Offers of capacity and energy may be from one or more resources. Such resources must be suitable to meet Seminole's firm load and/or reserve obligations Proposals based on system resources must provide Seminole with reliability equivalent to seller's firm native load customers.

3.8 Existing Seminole plant sites are not available for the addition of unit(s) to sell to Seminole.

3.9 Seminole also encourages the submission of proposals from renewable energy providers to meet its future power supply needs as defined in this RFP. Proposals from renewable resources do not have to be dispatchable, but must meet the 25 MW minimum stated in Section 3.6 above. Non-dispatchable renewable proposals of 75 MW or more will not be eligible to respond to this RFP and instead will need to pursue a standard offer agreement with Seminole, provided the facility has a Qualifying Facility certification under PURPA. Further details can be found on Seminole's website at **http://www.seminole-electric.com/index.php/S=0//site/qf**.

4.0 Delivery to the Seminole System

4.1 Seminole currently serves its load primarily through its own transmission system ("SSN") or through the transmission systems of Duke Energy Florida ("DEF") and Florida Power and Light Company ("FPL"). Wheeling and interconnection

arrangements and all costs to deliver the capacity and energy to the Seminole, DEF or FPL balancing authority areas are the responsibility of the bidder.

4.2 Proposed prices must include all integration and interconnection costs, and transmission network service upgrades to deliver the capacity and energy to one (or more) of the Seminole balancing authority areas.

4.3 All proposals must identify any wheeling and interconnection agreements with third parties that are required to deliver the capacity and energy to Seminole. Seminole requires that any transmission arrangements to deliver the offered capacity to the Seminole, DEF or FPL balancing authority areas to be firm. Seminole will accept and evaluate responses to the RFP in which arrangements of firm transmission for the delivery of energy to one of the Seminole balancing authority areas are in the process of being studied or finalized. In this case, the bidder should identify the underlying transmission service request, and provide Seminole with any existing studies and a summary of the study process and/or expected resolution.

4.4 For the benefit of the bidders in structuring their proposals, Seminole's forecasted peak loads in Winter 2022 in its three load serving balancing authority areas are as follows below. Bidders offering capacity amounts greater than the amounts listed in the SSN or FPL balancing authority areas will need to summarize their proposal to deliver the remainder of their offered capacity to one (or more) of the other balancing authority areas. Generally, Seminole does not want proposals for future generation resources to exceed the amount of its forecasted loads in any particular balancing authority area.

Balancing Authority Area	Winter Peak MW (2022)	Percentage (%) of Total Seminole Load
SSN	300	8
FPL	550	15
DEF	2,900	77
TOTAL	3,750	100

5.0 Bidder Forms

5.1 Bidders should complete and submit a Seminole Bidder Qualification Questionnaire ("BQQ") and Schedules A and B as part of each submittal. Schedules C through D will be completed by the bidders as required by the structure of their proposal. If

more than one submittal is made by a bidder, separate Schedules C through D must be prepared for each submittal.

5.2 All price quotes must be communicated on the attached Proposal Forms. Prices quoted shall always include all costs that Seminole would be expected to pay. Charges subject to change must be stated and estimates for the period provided along with their underlying assumptions.

6.0 Other Terms and Conditions

Each proposal must comply with all applicable federal and state laws. All permits, licenses, fees, emissions allowances, and environmental requirements are the responsibility of the bidder for the entire term of each proposal. If a resource detailed in a proposal is not yet in service, a detailed milestone schedule describing major project activities, including a permitting schedule, leading up to the commencement date for commercial service must also be provided. The minimum data required by Seminole to evaluate a bidder proposal is requested in Schedule D.

7.0 Reservation of Rights

Seminole expects to fulfill the capacity needs of this RFP through contracts resulting from this RFP, and/or from self-build options including joint ownership projects; however,

7.1 Seminole reserves the right to make resource commitments outside this RFP which result from (1) negotiated amendments to agreements with its current power suppliers, (2) negotiated arrangements with parties that Seminole is currently engaged in negotiations with for all or a portion of said capacity needs, or (3) negotiated arrangements for small power resources.

7.2 Seminole reserves the right, without qualification and at its sole discretion, to modify, supplement or withdraw this RFP and to reject any or all proposals or portions thereof or to waive irregularities or omissions. Those who submit proposals to Seminole do so without recourse against Seminole for either rejections by Seminole or failure to execute an agreement for any reason.

7.3 Seminole reserves the right to request further information, as necessary, to complete its evaluation of the proposals received.

7.4 No part of this RFP and no part of any subsequent communications with Seminole, its Members, trustees, employees, or officers shall be taken as providing legal, financial, or other advice, nor as establishing a commitment, promise or contractual obligation with a bidder.

7.5 Any negotiated contract shall be subject to the approval and award by the Seminole Board of Trustees.

8.0 Procedures for Application

8.1 A copy of this RFP, together with supporting forms, is on the Seminole website, "**www.seminole-electric.com**". The link to the RFP appears on the Seminole home page.

8.2 Bidders must submit their bid proposals via e-mail to the e-mail address below. Please note that an e-mail submission cannot exceed 20 MB in size. In addition, an **original bid proposal, signed by an authorized officer, plus two (2) copies must be mailed by either courier or U.S. Postal Service**. A separate point of contact for questions related to this RFP is defined in Section 11.4 below.

By Courier:
Seminole Electric Cooperative, Inc.
Attention: Mr. Timothy Nasello, Director of Supply Management
16313 North Dale Mabry Highway
Tampa, FL 33618

By U.S. Postal Service:
Seminole Electric Cooperative, Inc.
Attention: Mr. Timothy Nasello, Director of Supply Management
P.O. Box 272000
Tampa, FL 33688-2000

By E-Mail:
"**SeminolePowerRFP@seminole-electric.com**".

8.3 All proposals must arrive via e-mail by 5:00 PM Eastern Prevailing Time (EPT), **May 2, 2016**. Paper copies must arrive at Seminole's Tampa offices by 5:00 PM EPT on the next date (i.e., **May 3, 2016**). Seminole is not obliged to contact bidders concerning missing or incomplete forms. Only versions of the forms attached to this RFP may be used to submit proposals.

8.4 All bid packages should include any additional information required to support evaluation of the proposal, including a completed BQQ. Documents requested in support of the BQQ, including the applicant's most recent financial statements, must accompany the mailed versions of the proposals.

8.5 Seminole will not be assessing bidders a fee for any proposals submitted as a response to this RFP.

9.0 Confidentiality

9.1 Seminole recognizes that certain information contained in proposals submitted may be confidential and, as permitted by applicable law, will use reasonable efforts to maintain the information contained in the proposal as confidential. Seminole will not

treat submitted information as confidential if it already has the information, the information is clearly in the public domain or is readily available from public sources. However, Seminole reserves the right to submit the proposal to the Rural Utilities Service ("RUS") and to any other regulatory agency or judicial authority that may request it.

9.2 Seminole also reserves the right to disclose any or all of the information submitted in response to this request to any consultant(s) or attorney(s) retained by Seminole to assist with aspects of this process. Seminole will take reasonable steps to ensure that its consultant(s) or attorney(s) will also treat information received from bidders as confidential; however, Seminole will not be liable for any failure or for any damages of any consultant(s) or attorney(s) to do so. It is recommended that bidders clearly mark any response forms they desire to keep confidential as "Confidential".

10.0 Bid Evaluation Process

The procedures and criteria utilized to evaluate proposals will be as follows: first, to determine if the proposals are responsive to the RFP; second, to evaluate proposals from a technical, operational and commercial viewpoint, third, to evaluate proposals from an economic viewpoint, and fourth, if determined to be in the best interests of Seminole to develop a short-list for negotiations. Received proposals will be compared to Seminole's self-build alternatives as well as the other proposals. Seminole will use its planning and financial models to perform the analysis on the terms and conditions of each RFP proposal.

10.1 The economic evaluation of the RFP will use common economic assumptions for all proposals where appropriate.

10.2 Proposals may undergo a review from a technical and operational perspective on the following items:

- to ensure that the service offered is consistent with this RFP based upon the factors included herein, including, but not limited to:
  - a commercially viable term;
  - the reliability of the proposed power supply;
  - acceptable operational and scheduling characteristics;
  - acceptable fuel supply;
  - acceptable siting, construction and permitting plan (if applicable);
  - acceptable third party transmission arrangements (if applicable);
- to confirm that the capacity and energy will be delivered to the Seminole, DEF or FPL transmission systems, and can be delivered further to Seminole's member delivery points within the control areas of Seminole, DEF and/or the FPL; and if wheeling is required, that a firm transmission path will be available during the term;
- to evaluate the number and type of exceptions taken to the terms and

conditions of this RFP.

10.3 Proposals may then undergo a review from a commercial perspective, which will include but not be limited to the following, to ensure that the bidder has:

- adequate and pertinent experience, resources, and qualifications;
- the necessary financial assurance and operational viability to sustain an offer;
- made a commitment of guaranteed firm capacity to Seminole with adequate availability/non-performance guarantees and remedies;
- either itself, or through its guarantor, an investment grade credit rating, or is willing to post a letter of credit or other security acceptable to Seminole.

10.4 Seminole may conduct scenario and sensitivity analyses of proposals to evaluate risks and strategic value. The results of these analyses may be considered in Seminole's evaluation of proposals, including the selection of proposal(s) for the short list, if applicable.

11.0 Communication

11.1 Seminole expects to identify a short list by **August 19, 2016**. Contracts detailing the terms and conditions of completed agreement(s), if any, are expected to be executed by **January 31, 2017**.

11.2 This RFP is available on the Internet at **http://www.seminole-electric.com**, or by e-mail or U.S. mail. Please routinely check this web site for addendums and/or clarifications to this RFP.

11.3 Prospective bidders will be placed on Seminole's RFP e-mail distribution list for RFP updates. If your company intends to submit a proposal, please send your contact information (name, company name, title, phone and fax numbers, and e-mail address) to "**SeminolePowerRFP@seminole-electric.com**" no later than **March 15, 2016**.

11.4 If any prospective bidder has any questions or desires additional information related to this request for proposals, **such questions or information requests should be made in writing and directed via e-mail at "SeminolePowerRFP@seminole-electric.com"** to Mr. Jason Peters, Portfolio Director. Any RFP addendum(s), or question(s) of general interest and the respective answer will be posted on the above web site and directly e-mailed to parties that have provided their contact information to Seminole per Section 11.3 above.

Thank you for your interest in this RFP.

RFP FC 2021- ISSUED MARCH 1, 2016

ADDENDUM NUMBER 1
ISSUED MARCH 18, 2016

Seminole Electric Cooperative, Inc. issues this Addendum 1 in response to general questions and inquiries applicable to all potential bidders.

1. **RFP Proposal Forms.** Seminole has modified Schedule D-1, Facility Information. Modifications were made to the "Average Heat Rate Curves" portion of the form based on bidder questions. The changes made are as follows: 1) winter values were eliminated from Seminole's data request, 2) specific data for certain percentages of capacity states/unit output (100%, 80% 60% and minimum output were requested), and 3) comments were added to individual cells to facilitate bidder use of the form. The remaining forms were unchanged from those issued with the RFP on March 1, 2016.

2. **Seminole Self-Build Option.** Several bidders have requested general information on Seminole's self-build alternative. Seminole is evaluating a self-build combined cycle option. Generally, Seminole is reviewing both a 1x1 and a 2x1 combined cycle option. The power island equipment for the self-build project has not yet been selected, and multiple sites are being assessed. MW output will range from about 550 MW to 1150 MW, and any constructed generation will be expected to be fully commercial by June 2021.

3. **Proposals Beginning Before June 2021.** Several bidders have asked if their proposals can start before June 1, 2021. The reason Seminole chose June 1, 2021 as a start date is because that is the first period of significant capacity need in Seminole's portfolio. Any proposal with a start date prior to June 2021 will be considered compliant with the RFP and will be evaluated by Seminole staff. However, any proposals with an earlier than requested start date will be evaluated against Seminole's existing portfolio to ascertain any potential energy benefits, and capacity will have a minimal value, if any.

4. **Hourly Loads in the FPL Balancing Authority Area.** Several bidders have asked if they can obtain historical hourly loads for Seminole in the FPL BAA. Seminole has provided these historical loads (by individual delivery point) for years 2013-2015 as part of this RFP addendum so that it is available for all bidders.

5. **Variable Generation/Non-Dispatchable Generation.** Several bidders have asked if they can provide proposals of greater than 75 MW of non-dispatchable generation in response to the RFP. Seminole has reviewed the cap (less than 75 MW) in Section 3.9 of RFP FC 2021 and still prefers proposals of less than 75 MW. However, any proposal of 75 MW or greater will be considered compliant with the RFP and will be evaluated by Seminole staff.

RFP FC 2021- ISSUED MARCH 1, 2016

ADDENDUM NUMBER 2
ISSUED APRIL 7, 2016

Seminole Electric Cooperative, Inc. issues this Addendum 2 in response to general questions and inquiries applicable to all potential bidders. A number of bidders have asked for further detail regarding distribution, transmission facilities and wheeling.

1. **Seminole Network Resources – Transmission Level Interconnection.** If the proposed resource interconnects with 69kV (or higher) voltage on the transmission system in either of the Duke Energy Florida ("DEF") or Florida Power and Light ("FPL") balancing authority areas, Seminole will request to designate the resource a "designated network resource" for the respective balancing authority area. If a proposed resource is approved as a designated network resource, that resource will serve Seminole's native load in that balancing area and no incremental wheeling costs will be assessed. Similarly, if the project interconnects with the Seminole transmission system, there will be no incremental wheeling costs for the bidder or Seminole.

2. **Seminole Network Resources – Distribution Level Interconnection.** If the proposed resource interconnects at the distribution level on the FPL or DEF systems (below 69kV) there will be additional wheeling charges and losses for the bidder. The bidder is responsible for the distribution wheeling charges and the related energy losses. Under the RFP requirements, the bidder's delivery of energy must be made to Seminole at transmission level.

3. **Resources from SERC.** Seminole will accept proposals delivering to the FL-GA interface on firm transmission. Seminole will then request that the resource be a designated network resource on either the FPL or DEF transmission system and there will be no incremental wheeling costs.

Below is a list of Frequently Asked Questions regarding Transmission Arrangements for Proposals to RFP FC 2021:

Question: For this RFP, would projects that are in an interconnection queue have a preference over those not in the queue?

Answer: Yes. Proposals that are submitted without any work on interconnection/transmission wheeling may be considered non-compliant with the RFP requirements (see section 4.3).

Question: At the time of submission of the bid proposal, the supplier would not have any interconnection studies back from the transmission provider. Would this be an issue?

Answer: No. Per section 4.3 of the RFP, it is acceptable for interconnection or wheeling arrangements to be in study status. Generally, it would be unusual for a proposal to have secured all of the necessary transmission prior to submitting a bid, simply due to the amount of time it takes to finalize such arrangements.

Question: For this RFP, is there a preference to direct connect to the Seminole Electric transmission system or to interconnect into the FPL or DEF balancing areas?

Answer: In terms of our economic evaluation, projects interconnecting with a) Seminole's balancing area, b) Seminole's distribution members, c) DEF's balancing area (@ 69kV or above), or d) FPL's balancing area (@ 69kV or above) will all be treated equally.

Question: Is site control for the project required to participate in this RFP?

Answer: Yes. Please see sections 4.1 and 4.2 of RFP FC 2021.

Question: What is the definition of firm and non-firm used in this RFP?

Answer: Firm transmission will be requested by the bidder as 7-FN from the relevant transmission provider. Any transmission arrangements designated in classes NS-1 through NM-5 are considered to be non-firm.

RFP FC 2021- ISSUED MARCH 1, 2016

ADDENDUM NUMBER 3
ISSUED APRIL 19, 2016

Seminole Electric Cooperative, Inc. issues this Addendum 3 in response to general questions and inquiries applicable to all potential bidders. A number of bidders have asked for relief on the bid due date. In addition, Seminole has clarified its "Procedures for Application" in section 8.0. The clarifications to section 8.0 are largely in response to our finalization of an independent evaluation process for the RFP. Sedway Consulting, Inc. (with Alan Taylor as the principal contact) will be providing an independent evaluation of Seminole's RFP process and will need to be copied on all RFP FC 2021 proposals. Please see the revised section 8.0 below.

8.0 Procedures for Application

8.1 A copy of this RFP, together with supporting forms, is on the Seminole website, "**www.seminole-electric.com/index.php/S=0/site/suppliers**". The link to the RFP documents appears on the bottom half of the page.

8.2 Bidders must submit their bid proposals via e-mail to the e-mail addresses below. Please note that an e-mail submission cannot exceed 7 MB in size. ".ZIP" files are acceptable if larger documents need to be submitted. If a Bidder finds that its proposal materials may still exceed the 7 MB limit, the Bidder should split its submission materials into two or more emails. In addition to the e-mail submittal, **an original bid proposal, signed by an authorized officer, plus two (2) copies must be mailed by either courier or U.S. Postal Service**. A separate point of contact for questions related to this RFP is defined in Section 11.4 below.

By Courier:

Seminole Electric Cooperative, Inc.

Attention: Mr. Timothy Nasello, Director of Supply Management

16313 North Dale Mabry Highway

Tampa, FL 33618

By U.S. Postal Service:

Seminole Electric Cooperative, Inc.

Attention: Mr. Timothy Nasello, Director of Supply Management

P.O. Box 272000

Tampa, FL 33688-2000

By E-Mail:

SeminolePowerRFP@seminole-electric.com

With a carbon copy to:

Alan.Taylor@sedwayconsulting.com

8.3 All proposals must arrive via e-mail by 5:00 PM Eastern Prevailing Time (EPT), **May 9, 2016**. Paper copies must arrive at Seminole's Tampa offices by 5:00 PM EPT on the next date (i.e., **May 10, 2016**). Seminole is not obliged to contact bidders concerning missing or incomplete forms. Only versions of the forms attached to this RFP may be used to submit proposals.

8.4 All bid packages should include any additional information required to support evaluation of the proposal, including a completed BQQ. Documents requested in support of the BQQ, including the applicant's most recent financial statements, must accompany the mailed versions of the proposals.

8.5 Seminole will not be assessing bidders a fee for any proposals submitted as a response to this RFP.

RFP FC 2021- ISSUED MARCH 1, 2016

ADDENDUM NUMBER 4 - OPERATING PERFORMANCE
ISSUED JULY 13, 2016

Seminole Electric Cooperative, Inc. issues this Addendum 4 to expand upon the information previously requested by Seminole in Schedule D-3 to RFP FC 2021. Please review the questions below and respond by COB Tuesday, July 19, 2016 to all questions applicable to your proposal. If a question is not applicable to your proposal, please add a response of "Not Applicable" in the answer section. Seminole's RFP Provisions 3.2 and 3.3 from RFP FC 2021 are also included below for your ease of reference.

> 3.2 Proposals received from specific units should be dispatchable and provide Seminole with scheduling flexibility (including real time control capability such as automatic generation control ("AGC")) and availability guarantees equivalent to the technical specifications of the units. Respondents should also indicate their ability to coordinate scheduled maintenance with Seminole.
>
> 3.3 Proposals sourced from a Seller's system of resources should be dispatchable and must offer intraday scheduling rights. Preference will be given to any proposals that can also provide contingency reserves, fast starts, and/or offer intra hour scheduling flexibility.

Seminole's additional questions regarding operational performance follow below:

1. Question: Please describe the desired next day scheduling requirements for your proposal. Your response should include information on the timing of scheduling notification, flexibility in regards to energy requested, delivery/nomination of fuel (if applicable), scheduling increments and requested method of communication.

   Answer:

2. Question: Please describe the desired intraday scheduling requirements for your proposal. Your response should include information on the timing of scheduling notification, flexibility in regards to energy requested, delivery/nomination of fuel (if applicable), scheduling increments and requested method of communication. Please distinctly note any desired differences between the next day and intraday processes. Are there any limits on the amount of schedule changes permitted in a single day?

   Answer:

3. Question: Regarding intraday scheduling rights, what is the minimum notice period (in minutes) that Seminole can provide for schedule adjustments? Please note that Seminole's preference would be to have the ability to call on energy from the resource within thirty (30) minutes at any point during a clock hour.

   Answer:

4. Question: Regarding intraday scheduling rights, would Seminole have any additional flexibility (beyond the intraday scheduling rights described in item 3 above) available in the event of an emergency situation (such as an unplanned transmission or generation outage) on its system? Seminole's preference for the availability of energy is notes in item 3 above.

   Answer:

5. Question: If your proposal is from a specific unit(s), would Seminole have available the full technical capability of the unit(s) for scheduling purposes? If not, what restrictions exist?

   Answer:

6. Question: If your proposal involves Seminole tolling the natural gas fuel for the requested energy, please note if Seminole will be the pipeline delivery point operator for the facility. Are the proposed units offered to Seminole on their own gas meter?

   Answer:

7. Question: If fuel supply for Seminole's energy requirements is included in your proposal, would Seminole have any optionality to bring its own fuel for its energy needs?

   Answer:

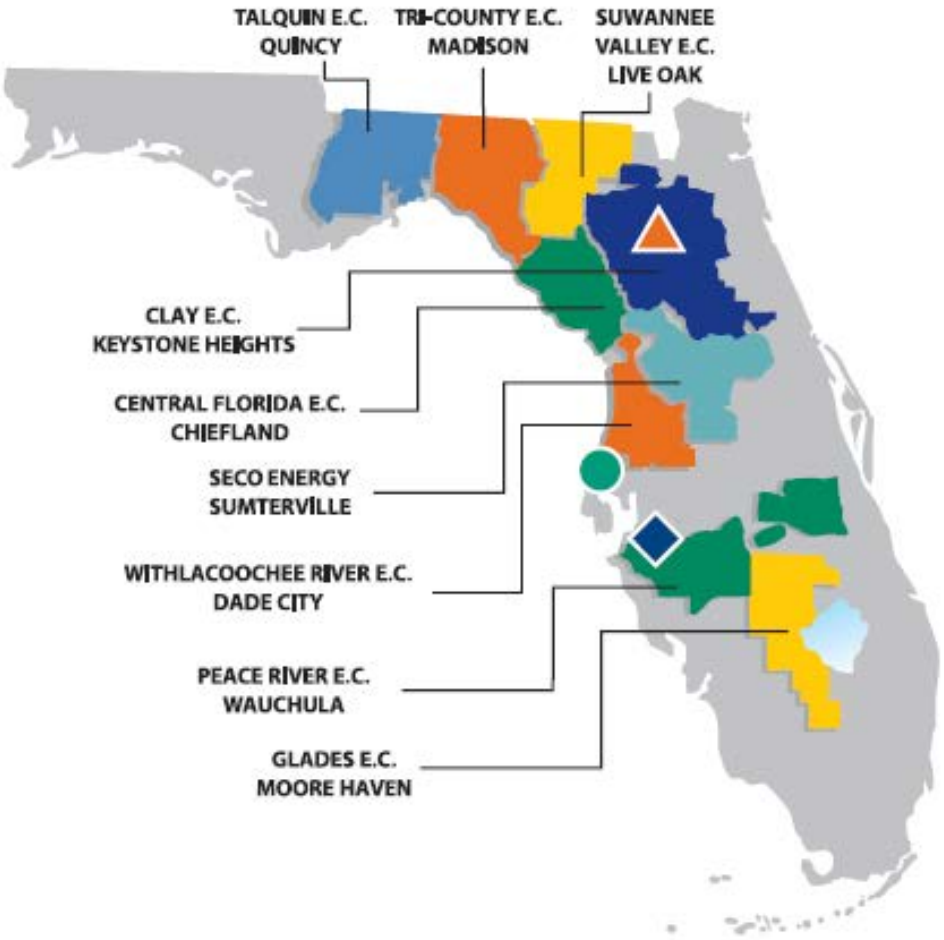
8. Question: Regarding the ramp in of energy schedules, please define a typical ramp in period for your proposal and any flexibility that may be available outside of ramping at the top and bottom of the hour. Seminole, as an FRCC entity, is accustomed to a 20-minute ramp schedule. Is dynamic scheduling available from your resource?

   Answer:

9. Question: Regarding availability, if your proposal is from a specific unit, please describe both the historical availability and capacity factor of the facility for each month during calendar years 2013-2015.

   Answer:

SEMINOLE'S MEMBER COOPERATIVES



SEMINOLE HEADQUARTERS
16313 North Dale Mabry Highway / P.O. Box 272000
Tampa, Florida 33688-2000 / (813) 963-0994

RICHARD J. MIDULLA GENERATING STATION
6697 North County Road 663 / Bowling Green, FL 33834

SEMINOLE GENERATING STATION
890 Highway 17 North / Palatka, FL 32177

Seminole's Purchase Power Contracts
(as of December 31, 2016)

SUPPLIER	FUEL	MW (WINTER RATINGS)	IN SERVICE DATE	END DATE
Hardee Power Partners	Gas/Oil	445	1/1/2013	12/31/2032
Oleander Power Project	Gas/Oil	546	1/1/2010	5/31/2021
FPL	System	200	6/1/2014	5/31/2021
DEF	System	<1	6/1/1987	-
DEF	System	600	1/1/2014	12/31/2020
DEF	System	150	1/1/2014	12/31/2020
DEF	System	50	6/1/2016	12/31/2018
DEF	System	200-500	6/1/2016	12/31/2024
DEF	System	50-600	1/1/2021	3/31/2027
Lee County Florida	Waste Landfill	55	1/1/2009	12/31/2016
Telogia Power	Biomass	13	7/1/2009	11/30/2023
Seminole Energy, LLC	Landfill Gas	6.2	10/1/2007	3/31/2018
Brevard Energy, LLC	Landfill Gas	9	4/1/2008	3/31/2018
Timberline Energy, LLC	Landfill Gas	1.6	2/1/2008	3/31/2020
Hillsborough County	Waste Landfill	38	3/1/2010	2/28/2025
City of Tampa	Waste Landfill	20	8/1/2011	7/31/2026

Note: Seminole Electric Cooperative may sell a portion of the renewable energy credits associated with its renewable generation to third parties. The third parties can use the credits to meet mandatory or voluntary renewable requirements.

Seminole's New Purchase Power Contracts

Supplier	Fuel	MW	In Service Date	End Date
Shady Hills Energy Center LLC	Gas	575*	12/1/2021	11/30/2051
Shady Hills Power Company LLC	Gas/Oil	364*	6/1/2024	5/31/2032
Oleander Power Project	Gas/OIl	546*	6/1/2021	12/31/2021
Southern Company Services	System	100-150*	6/1/2021	5/31/2026
DEF	System (IM)	50-400*	1/1/2021	12/31/2030
DEF	System (Peaking)	50-400*	1/1/2021	12/31/2035
Tillman Solar Center LLC	Solar/PV	40**	6/1/2021	5/31/2041

* Winter ratings
** Summer rating