Maria Jose Moncada
Assistant General Counsel
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408-0420
(561) 304-5795
(561) 691-7135 (Facsimile)
E-mail: maria.moncada@fpl.com

April 3, 2024

-VIA ELECTRONIC FILING-

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

Re: Docket No. 20240001-EI

Dear Mr. Teitzman:

Attach for electronic filing in the above referenced docket are (i) Florida Power & Light Company's ("FPL") Petition for Approval of Solar Base Rate Adjustment To Be Effective 2025; and (ii) the prepared testimony and exhibits of FPL witnesses Kelly Fagan and Andrew W. Whitley in support of the Solar Base Rate Adjustment.

Please feel free to contact me with any questions regarding this filing.

Sincerely,

s/ Maria Jose Moncada
Maria Jose Moncada

:22026587

Attachments

cc: Counsel for Parties of Record (w/ attachment)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Fuel and purchased power cost recovery clause with generating performance incentive factor	Docket No. 20240001-EI Date: April 3, 2024

FLORIDA POWER & LIGHT COMPANY'S PETITION FOR APPROVAL OF SOLAR BASE RATE ADJUSTMENT TO BE EFFECTIVE 2025

Florida Power & Light Company ("FPL" or the "Company"), pursuant to the rate settlement approved by this Commission in Order No. PSC-2021-0446-S-EI, as amended by Order No. PSC-2021-0446A-S-EI and supplemented in Order No. PSC-2024-0078-FOF-EI (the "2021 Rate Settlement" or "Settlement"),[1] files this Petition requesting that the Florida Public Service Commission ("Commission") find that the proposed new solar generation described herein satisfies the requirements for a solar base rate adjustment ("SoBRA"). Comprised of 12 solar energy centers scheduled to be placed in service by January 31, 2025 (the "2025 Project"), the proposed solar generation is designed to deliver high reliability and is projected to save customers $911 million.

FPL further requests that the Commission authorize FPL to implement a SoBRA upon the commercial operation date of the 2025 Project.

In support of the Petition, FPL states as follows:

1. The name and address of the Petitioner is:

Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408

[1] In response to the remand from the Florida Supreme Court, the Commission issued Order No. PSC-2024-0078-FOF-EI approving, with further explanation, the 2021 Rate Settlement.

Any pleading, motion, notice, order or other document required to be served upon the petitioner or filed by any party to this proceeding should be served upon the following individuals:

Maria Jose Moncada
Assistant General Counsel
maria.moncada@fpl.com
William P. Cox
Senior Counsel
will.p.cox@fpl.com
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408-0420
Phone: (561) 304-5795
Fax: (561) 691-7135

Kenneth A. Hoffman
Vice President, Regulatory Affairs
ken.hoffman@fpl.com
Florida Power & Light Company
134 West Jefferson Street
Tallahassee, Florida 32301
Phone: (850) 521-3919
Fax: (850) 521-3939

2. The Commission has jurisdiction pursuant to Sections 366.04, 366.05 and 366.06, Florida Statutes.

3. FPL is a corporation organized and existing under the laws of the State of Florida and is an electric utility as defined in Section 366.02(2), Florida Statutes.

4. This Petition is being filed consistent with Rule 28-106.201, Florida Administrative Code. The agency affected is the Florida Public Service Commission, located at 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399. This case does not involve reversal or modification of an agency decision or an agency's proposed action. Therefore, subparagraph (c) and portions of subparagraphs (b), (e), (f) and (g) of subsection (2) of that rule are not applicable to this Petition. In compliance with subparagraph (d), FPL states that it is not known which, if any, of the issues of material fact set forth in the body of this Petition may be disputed by any others who may plan to participate in this proceeding. The discussion below demonstrates how the petitioner's substantial interests will be affected by the agency determination.

Introduction

5. Pursuant to FPL's 2021 Rate Settlement, FPL may construct up to 894 megawatts[2] ("MW") of solar generation estimated to enter service in 2025. FPL is authorized to recover the costs of the solar generation through a SoBRA when the solar project is placed in service so long as FPL demonstrates that (i) FPL's SoBRA recovery does not exceed the applicable cost cap, (ii) the costs are reasonable and (iii) the solar project is cost-effective. As detailed below, the 2025 Project satisfies these three requirements.

6. As contemplated by the 2021 Rate Settlement, the Company is undertaking construction of 12 solar energy centers totaling 894 MW that will be placed into commercial operation in 2025, each one generating enough energy to serve the annual energy needs of about 13,660 homes. Accordingly, FPL files this Petition, along with the testimony and exhibits of witnesses Kelly Fagan and Andrew Whitley, to demonstrate that FPL's requested SoBRA recovery does not exceed the cost cap; that the costs of the 2025 Project are reasonable; and that adding this solar generation to FPL's system is cost-effective. FPL will include with its projection filing in this docket (scheduled to be filed September 5, 2024) testimony to support the revenue requirement calculation and the appropriate percentage increase in base rates associated with FPL's requested SoBRA recovery for the 2025 Project.

The 2025 Solar Energy Centers

Technology and Equipment

7. The 2025 Project is comprised of 12 solar energy centers cited in eleven different counties. The centers are estimated to enter commercial operation by January 31, 2025 and, collectively, will generate a total of 894 MW (nameplate capacity).

[2] All units of electric generation mentioned in this Petition refer to "alternating current."

8. The 2025 Project will utilize about 2.1 million photovoltaic ("PV") panels that convert sunlight to direct current ("DC") electricity at a highly efficient average conversion rate of about 21.5%. The panels for each center will be tied together electrically in groups and connected to an electronic device called a power conversion unit ("PCU"), which includes inverters that transform the DC electricity produced by the PV panels into alternating current ("AC") electricity. As described by FPL witness Fagan, the DC-to-AC ratio for the solar energy centers that comprise the 2025 Project will range from 1.20 to 1.59, depending on site and equipment characteristics unique to each center.

9. The 12 solar energy centers that comprise the 2025 Project are located sufficiently close to transmission corridors with available capacity to carry the energy generated by the centers. As a result, there are no network upgrade costs required on the transmission system for any of these solar centers.

10. FPL achieves customer benefits from each unique solar energy center by optimizing its selection of equipment and the layout available at each site. Eleven of the 12 energy centers comprising the 2025 Project will use single-axis tracking systems, which means the structures that support the solar panels will "track" the sun's path as it moves throughout day. Recent design and manufacturing improvements in single-axis tracking technology supports higher wind loading, thus allowing FPL to expand use of this technology beyond what was anticipated at the time it entered the 2021 Rate Settlement. All other factors being equal, use of the single-axis tracking system offers higher generation output, thus driving greater economic benefits by displacing more fuel and reducing more emissions. Furthermore, as FPL is able to generate more output from the solar energy centers, it results in incremental production tax credits afforded under the Inflation Reduction Act, which in turn reduces the overall CPVRR of the 2025 SoBRA Plan and leads to greater customer savings.

11. Once placed into service, the 2025 Project will benefit from FPL's proprietary monitoring and performance analysis tools that optimize plant operations and drive process efficiencies. The 12 solar energy centers will be monitored and operated at FPL's Renewable Operations Control Center ("ROCC"), which identifies potential problems earlier than traditional detection methods and manages daily work activities remotely and efficiently. The ROCC allows FPL to deploy best practices effectively and perform preventative maintenance in the most efficient way possible with the goal of continuously reducing lost energy and production costs. Finally, the 12 solar energy centers will be supported by regional operations centers that are able to position staffing resources in locations that ensure a timely response to problems as they arise.

2025 Project Costs

12. Paragraphs 12(a) and 12(j) of FPL's 2021 Rate Settlement establish a ceiling on FPL's SoBRA recovery. The "Cost Cap" for SoBRA recovery is $1,250 per kW. The Settlement further provides that the Cost Cap must be reduced by the land cost associated with any solar energy center sited on land that already is included in rate base as Plant Held for Future Use ("PHFU") as shown on the exhibit labeled MV-5 in Docket 20210015-EI. This reduced Cost Cap is referred to as the "Adjusted Cap."

13. FPL satisfies the Settlement by calculating the Cost Cap or Adjusted Cap for each of the 12 solar energy centers that comprise the 2025 Project and limiting the amount to be recovered through the SoBRA accordingly.

a. The land costs associated with six of the 12 solar energy centers were identified as PHFU on Exhibit MV-5.

b. In addition, FPL's 2021 Rate Case included a rate base forecast for Test Year 2022 and Subsequent Year 2023 that reflect PHFU and easement costs not identified on Exhibit MV-5. FPL has assumed for SoBRA calculation

purposes that land costs for the six remaining sites, as well as easements costs associated with any site requiring such land rights, also are included in its rate base.

Accordingly, FPL's Adjusted Cap calculation reflects the subtraction of all land costs for the 2025 Project. The testimony of FPL witness Fagan sets forth the Adjusted Cap calculation per center, as well as the Project's overall average Adjusted Cap. The average Adjusted Cap for the 2025 Project – and the limit on FPL's SoBRA recovery – is $1,159 per kW. Therefore, FPL satisfies the Cost Cap set forth in the Settlement.

14. The estimated cost to construct each solar energy center, adjusted for PHFU, ranges from $1,378 per kW to $1,720 per kW. On an overall basis, the 2025 Project's average adjusted estimated cost is $1,509 per kW. Consistent with the Settlement, FPL is not requesting SoBRA recovery of the $350 per kW difference between the adjusted estimated cost and the Adjusted Cap.

SoBRA Recovery Calculation (per Paragraphs 12(a), 12(j) of Settlement)				**FPL's Construction Costs**	
	Settlement Cost Cap	**PHFU value**	**Adjusted Cap/ SoBRA Recovery Amount**	**Estimated Cost**	**Estimated Cost Less PHFU value ($91)**
2025 Project Average per kW	$1,250	$91	**$1,159**	$1,600	$1,509

15. The costs of the 2025 Project are reasonable given economic and market conditions. As explained in the testimony of FPL witness Fagan, a number of factors drove increased costs compared to what FPL had projected when the $1,250 per kW Cost Cap was established. The solar construction sector was not insulated from general inflationary pressures that have been experienced by the rest of the economy. Since 2021, inflation and higher demand for solar generation have caused sharp increases in the cost of materials and labor. In addition, three other

factors specific to the solar sector drove cost increases during the period FPL was procuring materials and performing design and engineering work for the 2025 Project:

- Solar panel prices increased due to the solar market's reaction to a U.S. Department of Commerce inquiry into whether importers of panels from certain Southeast Asian countries were attempting to circumvent anti-dumping duty and countervailing duty orders on solar cells and panels manufactured in China ("Circumvention Inquiry"), which orders impose tariffs of up to 254%;
- The cost of polysilicon, the basic component in solar panel manufacturing, substantially increased in the period after FPL entered the 2021 Settlement. This increase was due to supply constraints, as well as a June 2022 importation restriction related to all goods from the Xinjiang region of China, with a heavy enforcement emphasis on imported polysilicon; and
- Advancements in single-axis tracker technology facilitated FPL's ability to use these systems at 11 of the 12 sites. This technology has a higher capital cost compared to fixed-tilt systems but yields incremental production tax credits thereby providing significant customer benefits that exceed the capital costs.

16. The largest portion of the increase in construction cost is due to the rise in solar panel costs resulting from the Circumvention Inquiry, the increase in the price of polysilicon, and inflationary pressures, which combined to contribute $181 per kW of incremental project costs. The change to use single-axis trackers at 11 of 12 sites added an additional $66 per kW. The remainder of the pricing increase is due to general inflationary pressures and higher demand for solar, which impacted the cost of construction labor and materials for the balance of the plant.

17. As it has done for all solar projects built to date, FPL employed a comprehensive procurement process to ensure the reasonableness of its construction costs, notwithstanding the

increases caused largely by factors outside of FPL's control. All of the costs for surveying, engineering, equipment, materials and construction services were established through competitive bidding processes. For the 2025 Project, FPL requested and received more detailed information from bidders in order to evaluate the potential impacts of pending trade actions described above. FPL solicited proposals for solar panels from 19 industry-leading suppliers from a diverse cross-section of locations that FPL had not previously participated in FPL's solicitation process, and selected two suppliers that offered the lowest prices and demonstrated the ability to navigate the trade environment. Through its robust competitive bidding process, FPL also secured the lowest-cost qualified bidders for PCUs and power step-up transformers, as well as the engineering, procurement and construction for the solar facilities, substations and interconnection facilities.

The 2025 Project is Cost-Effective

18. The 2021 Rate Settlement provides that SoBRA-eligible projects must be cost-effective, and it defines cost-effective as having a lower projected system cumulative present value revenue requirement ("CPVRR") with the project compared to the system CPVRR without it. As explained more fully by FPL witness Whitley, adding the 2025 Project's 894 MW of solar generation to FPL's fleet is projected to save customers $911 million and is therefore cost-effective.

19. To evaluate cost-effectiveness, FPL compared a resource plan that excludes the 2025 Project to a plan that includes it: the "No 2025 SoBRA Plan" and the "2025 SoBRA Plan," respectively. Both plans use the same major system assumptions, including the Company's load, fuel price and carbon dioxide ("CO_2") price forecasts, the same forecasts used in FPL's 2024 Ten -Year Site Plan. The No 2025 SoBRA Plan does not include any new solar facilities beyond those already in-service as of the end of 2025 and assumes that future resource needs are met by combined cycle units and battery storage. The 2025 SoBRA Plan includes the 12 solar energy

centers and reflects the $1,600 per kW estimated cost of construction (not the Adjusted Cap). The net capacity factor for the 2025 Project is 27.3%. And, because the 2025 Project is assumed to provide 39% firm nameplate capacity (summer) to satisfy reliability obligations, the 2025 SoBRA Plan reduces the size of battery storage necessary in 2029 and 2033 by 300 MW in each of those years.

20. FPL used the capacity expansion and hourly production cost functions of the Aurora model to forecast the system economics and develop resource plans that include or exclude the 2025 Project. The Aurora modeling runs determine the optimal resource plan and associated generation system costs, consisting of capital costs, fixed operations and maintenance ("O&M") costs, capital replacement costs, fuel costs, variable O&M costs and emissions costs. This is used to determine the CPVRR for each resource plan. To determine the CPVRR impact of the proposed 2025 Project, FPL subtracted the CPVRR of the No 2025 SoBRA Plan from the CPVRR of the 2025 SoBRA Plan.

21. Based on the economic analysis, the 2025 Project is projected to be cost-effective. FPL customers are projected to save $911 million CPVRR by adding the 12 solar energy centers to its fleet in 2025.

Additional Benefits of the 2025 Project

22. The addition of the 2025 Project also provides non-economic advantages in the form of system, environmental and community benefits.

23. *System and environmental benefits*. The solar energy from the 2025 Project is expected to reduce FPL's annual average use of natural gas by 13,982 million cubic feet. Therefore, the Project reduces FPL's reliance on natural gas and reduces customers' exposure to volatility in the natural gas market. In addition, the reduced use of fossil fuel will, in turn, decrease

CO_2 emissions by an average of about 833,427 tons annually. Nitrogen oxide ("NO_x") emissions also are projected to decline by an annual average of 71 tons.

24. *Community benefits*. The 2025 Project will create about 2,500 jobs at the height of construction, providing an economic boost to local businesses. This construction in Florida will increase annual tax revenue for each of the counties where the sites are situated, thus contributing to the funding of public services that benefit those communities both during construction and after the centers enter service.

Conclusion

25. As set forth in this Petition and the accompanying testimony, the 2025 Project satisfies the requirements established in the Settlement. Adding the 2025 Project to FPL's system is estimated to save customers approximately $911 million CPVRR. Consistent with the Settlement, FPL requests SoBRA recovery only up to the prescribed Adjusted Cap, which, for the 2025 Project is $1,159 per kW. The total cost of construction of $1,600 per kW ($1,509 per kW adjusted) is reasonable, although higher than anticipated at the time FPL entered the 2021 Rate Settlement. FPL has undertaken a robust competitive bidding process for the major equipment components, as well as engineering and construction, to ensure the reasonableness of these costs. The 2025 Project will improve FPL's fuel diversity and reduce customer exposure to fuel price volatility. Finally, it also will reduce CO_2 and NO_x emissions, providing cleaner air for all Florida residents to enjoy for years to come.

26. Accordingly, the Commission should enter a final order determining that FPL's 2025 Project satisfies the requirements for SoBRA approval set forth in the 2021 Rate Settlement and authorizing FPL to recover the associated revenue requirements when the 2025 Project enters commercial operation. Calculation of the revenue requirements and the appropriate percentage

increase in base rates associated with FPL's requested SoBRA recovery will be presented at the time of FPL's projection filing in this docket.

WHEREFORE, for the foregoing reasons and as more fully set forth in the supporting testimony and exhibits filed with and incorporated in this Petition, Florida Power & Light Company requests that the Commission authorize FPL to implement a solar base rate adjustment when the 2025 Project enters commercial service.

Respectfully submitted,

Maria Jose Moncada
Assistant General Counsel
William P. Cox
Senior Counsel
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, FL 33408
Telephone: (561) 304-5795
Facsimile: (561) 691-7135
Email: maria.moncada@fpl.com

By: *s/ Maria Jose Moncada*
Maria Jose Moncada
Florida Bar No. 0773301

CERTIFICATE OF SERVICE
Docket No. 20240001-EI

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic service on this 3rd day of April 2024 to the following:

Suzanne Brownless
Ryan Sandy
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850
sbrownle@psc.state.fl.us
rsandy@psc.state.fl.us

J. Jeffry Wahlen
Malcolm N. Means
Virginia Ponder
Ausley McMullen
Post Office Box 391
Tallahassee, Florida 32302
jwahlen@ausley.com
mmeans@ausley.com
vponder@ausley.com
Attorneys for Tampa Electric Company

Paula K. Brown
Manager, Regulatory Coordination
Tampa Electric Company
Post Office Box 111
Tampa, Florida 33601-0111
regdept@tecoenergy.com

Mike Cassel
Vice President/Governmental
and Regulatory Affairs
Florida Public Utilities Company
208 Wildlight Avenue
Yulee, Florida 32097
mcassel@fpuc.com

Michelle D. Napier
Director, Regulatory Affairs
Florida Public Utilities Company
1635 Meathe Drive
West Palm Beach, Florida 33411
mnapier@fpuc.com

Walt Trierweiler
Charles J. Rehwinkel
Mary A. Wessling
Patricia A. Christensen
Octavio Ponce
Austin Watrous
Office of Public Counsel
The Florida Legislature
111 W. Madison Street, Room 812
Tallahassee, Florida 32399
trierweiler.walt@leg.state.fl.us
rehwinkel.charles@leg.state.fl.us
wessling.mary@leg.state.fl.us
christensen.patty@leg.state.fl.us
ponce.octavio@leg.state.fl.us
watrous.austin@leg.state.fl.us
Attorneys for the Citizens of the State of Florida

Matthew R. Bernier
Robert L. Pickels
Stephanie A. Cuello
106 East College Avenue, Suite 800
Tallahassee, Florida 32301
matt.bernier@duke-energy.com
robert.pickels@duke-energy.com
stephanie.cuello@duke-energy.com
FLRegulatoryLegal@duke-energy.com
Attorneys for Duke Energy Florida

Dianne M. Triplett
299 First Avenue North
St. Petersburg, Florida 33701
dianne.triplett@duke-energy.com
Duke Energy Florida, LLC

Beth Keating
Gunster, Yoakley & Stewart, P.A.
215 South Monroe Street, Suite 601
Tallahassee, Florida 32301-1804
bkeating@gunster.com
Attorneys for Florida Public Utilities Company

Robert Scheffel Wright
John Thomas LaVia, III
Gardner, Bist, Bowden, Dee, LaVia, Wright, Perry & Harper, P.A.
1300 Thomaswood Drive
Tallahassee, Florida 32308
schef@gbwlegal.com
jlavia@gbwlegal.com
Attorneys for the Florida Retail Federation

Jon C. Moyle, Jr.
Moyle Law Firm, P.A.
118 North Gadsden Street
Tallahassee, Florida 32301
jmoyle@moylelaw.com
mqualls@moylelaw.com
Attorneys for Florida Industrial Power Users Group

James W. Brew
Laura Wynn Baker
Sarah B. Newman
Stone Mattheis Xenopoulos & Brew, P.C.
1025 Thomas Jefferson Street, NW
Eighth Floor, West Tower
Washington, DC 20007
jbrew@smxblaw.com
lwb@smxblaw.com
sbn@smxblaw.com
Attorneys for White Springs Agricultural Chemicals, Inc. d/b/a PCS Phosphate -White Springs

Peter J. Mattheis
Michael K. Lavanga
Joseph R. Briscar
Stone Mattheis Xenopoulos & Brew, PC
1025 Thomas Jefferson Street, NW
Eighth Floor, West Tower
Washington, DC 20007
pjm@smxblaw.com
mkl@smxblaw.com
jrb@smxblaw.com
Attorneys for Nucor Steel Florida, Inc.

By: *s/ Maria Jose Moncada*
Maria Jose Moncada

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

TESTIMONY OF KELLY FAGAN

DOCKET NO. 20240001-EI

APRIL 3, 2024

Q. Please state your name and business address.

A. My name is Kelly Fagan, and my business address is 700 Universe Boulevard, Juno Beach, Florida, 33408.

Q. By whom are you employed and what is your position?

A. I am employed by NextEra Energy Resources, LLC as Senior Project Director in the Engineering & Construction division.

Q. Please summarize your educational background and professional experience.

A. In 1994, after serving in the United States Marine Corps, I transitioned into the civilian work force as an electrical apprentice, completing all four years of my apprenticeship while working in the field as construction lead and eventually an Assistant Project Manager. As a journeyman electrician I became a full Electrical Project Manager for large commercial and industrial projects across Northern Florida. In 2000 I also earned my Bachelor of Science Degree in Electrical and Computer engineering from the University of Florida. After obtaining my degree, I worked as a Lead Manufacturing Engineer for Motorola, Inc. and later served in a similar role for Sunbeam Corporation. In 2005, I

obtained my electrical contractor's license and started an electrical contracting firm that focused on commercial and industrial projects in South Florida.

I joined Florida Power & Light Company ("FPL") in 2009 as the General Manager of Production Assurance and later held various roles with responsibility for fleet reliability across Florida. In 2014, I joined the Engineering and Construction Department as a Senior Project Manager. In that role, I managed the early-stage engineering and construction of multiple solar sites across Florida. I was responsible for the preliminary design, permitting, approvals, procurement, and contracting of Florida solar sites. This included all aspects of the project from initial due diligence for land acquisition to final permitting for the solar arrays, as well as any associated battery storage, transmission, and substations.

In 2019, I was promoted to Senior Manager responsible for the early-stage objectives for all of FPL's solar and battery storage projects. In this role, I coordinated the work of the early-stage solar project team and site developers to optimize the performance and costs of FPL's solar portfolio. I assumed my current role in late 2021.

Q. What is the purpose of your testimony?

A. First, I describe the 12 universal photovoltaic ("PV") solar energy centers expected to begin commercial operation by January 31, 2025 ("2025 Project") for which FPL seeks recovery pursuant to the Solar Base Rate Adjustment

("SoBRA") provision of its 2021 Rate Settlement Agreement approved by Order Nos. PSC-2021-0446-S-EI, PSC-2021-0446A-S-EI and 2024-0078-FOF-EI ("2021 Rate Settlement" or "Settlement"). I provide a description of the solar energy centers, including the technology, engineering design parameters, and overall construction schedules. Second, I demonstrate that FPL satisfies the cost requirements included in the 2021 Rate Settlement that the 2025 Project's costs not exceed the prescribed cost cap and that the estimated cost of the components, engineering, and construction for the 2025 Project is reasonable.

Q. Please summarize your testimony.

A. My testimony demonstrates that FPL has selected components and technology for the 2025 Project that will deliver high levels of efficiency and reliability to serve FPL customers. In addition, FPL has undertaken a competitive procurement process to ensure its costs are reasonable. FPL satisfies the prescribed cost caps by limiting its SoBRA recovery to the amounts authorized by the Settlement, even though, as I will explain, the cost to construct solar remains higher than originally anticipated at the time FPL entered the Settlement.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- Exhibit KF-1 – List of FPL Solar Energy Centers in Service
- Exhibit KF-2 – FPL 2025 Solar Energy Center Maps
- Exhibit KF-3 – Typical Solar Energy Center Block Diagram

- Exhibit KF-4 – Specifications for 2025 Solar Energy Centers
- Exhibit KF-5 – Construction Schedules for the 2025 Solar Energy Centers
- Exhibit KF-6 – Capital Cost Table
- Exhibit KF-7 – Cost Increase Waterfall

I. 2025 Project Description

Q. Please describe FPL's experience in designing and building solar energy facilities.

A. FPL is leading one of the nation's largest solar programs and is currently Florida's largest generator of solar power. Since 2009 and as of the date of this filing, FPL has completed 88 solar energy centers totaling 6,442 MW_{AC}. The existing FPL solar energy centers range in size from 10 MW_{AC} to 74.5 MW_{AC}. Exhibit KF-1 provides a list of the FPL universal PV solar energy centers currently in service. For all centers installed through 2022 – the centers for which FPL has final costs – FPL successfully completed construction an average of 12 days early and at a total cost that fell approximately 2% or nearly $132.5 million below the cumulative budget. The 38 centers FPL placed in service from 2023 through March of 2024 likewise started commercial operation accordingly to plan, and costs are on track to meet or fall below budget.

Q. Please identify the solar energy centers that comprise the 2025 Project.

A. FPL is constructing 12 additional solar energy centers estimated to be in service by January 31, 2025. These are (i) Holopaw Solar Energy Center in Palm Beach

County, (ii) Speckled Perch Solar Energy Center in Okeechobee County, (iii) Big Water Solar Energy Center in Okeechobee County, (iv) Fawn Solar Energy Center in Martin County, (v) Hog Bay Solar Energy Center in DeSoto County, (vi) Green Pasture Solar Energy Center in Charlotte County, (vii) Thomas Creek Solar Energy Center in Nassau County, (viii) Fox Trail Solar Energy Center in Brevard County, (ix) Long Creek Solar Energy Center in Manatee County, (x) Swallowtail Solar Energy Center in Walton County, (xi) Tenmile Creek Solar Energy Center in Calhoun County, and (xii) Redlands Solar Energy Center in Miami-Dade County. Each center will have a nameplate capacity of 74.5 MW_{AC}. Exhibit KF-2 more fully describes and depicts the solar energy centers.

Q. Has FPL finalized the site layouts and designs for the solar energy centers?

A. Not at this time. Construction drawings are not finalized. Both my testimony and the analysis presented in FPL witness Whitley's testimony are predicated on the base-line designs. FPL does not foresee material changes to the designs and layouts for these sites.

Q. Please describe the solar technology that FPL plans to use for the 2025 Project and the resulting conversion efficiencies.

A. The 2025 Project will utilize approximately 2.1 million crystalline silicon panels that convert sunlight to direct current ("DC") electricity. These panels will have an average conversion efficiency of approximately 21.5%. This simply means that 21.5% of the solar energy reaching the surface of the panels is converted into DC electrical energy. This level of conversion efficiency is

an improvement over recent years and reflects the continued advancement of solar generation technology.

In addition, 11 of the 12 solar energy centers will use single-axis tracking configurations deployed according to prudent engineering practices. Recent design and manufacturing improvements in single-axis tracking technology support higher wind loading, thus allowing for further expansion of their use. Single-axis tracking systems allow for the solar panels to follow the movement of the sun from east to west throughout the day, maximizing the amount of energy that can be produced by each panel. All other factors being equal, the use of tracking technology offers higher generation output as well as a higher firm capacity value, which contributes to the economic benefits described in the testimony of FPL witness Whitley. The sole exception is the Redlands Solar Energy Center, which will use a fixed racking configuration due to even higher wind loading design variables in Miami-Dade County relative to other counties in Florida.

The solar panels will be linked together in groups, with each group connected to an inverter, which transforms the DC electricity produced by the PV panels into alternating current ("AC") electricity. The voltage of AC electricity coming out of each inverter is increased by a series of transformers to match the interconnection voltage for each solar energy center. The inverters are paired with a single medium voltage transformer on a common equipment skid

to form a power conversion unit ("PCU"). Nineteen PCUs will be installed at each solar energy center to produce 74.5 MW_{AC} of capacity. Exhibit KF-3 provides a typical block diagram depicting the basic layout of the major equipment components, and Exhibit KF-4 provides the specifications for the 12 solar energy centers.

Q. Describe the DC/AC ratio for the 2025 Project.

A. The DC/AC ratio is the ratio of the total installed DC capacity of PV panels to the AC capacity of each solar energy center. The DC/AC ratios for the solar energy centers depend on site conditions and environmental features unique to each location. For the 12 centers that comprise the 2025 Project, the DC/AC ratios will range from 1.20 to 1.59.

Q. Why are the DC/AC ratios not the same for all the solar energy centers?

A. Site and equipment characteristics unique to each of the solar energy centers drive variability in the DC/AC ratios. FPL seeks to achieve the highest level of output, reliability, and customer benefit from each unique solar energy center given the selection of major components and the design optimization possibilities that are available at each location at the time of design.

Q. Please describe whether upgrades to the existing FPL bulk transmission system are required to accommodate these 12 proposed solar energy centers.

A. Whether upgrades to FPL's bulk transmission system are required depends on the available transmission capacity in the area. The 12 solar energy centers that comprise the 2025 Project are sufficiently close to transmission corridors with

available capacity to carry the energy generated by the centers. As a result, no network upgrade costs are required on the bulk transmission system for the 2025 Project.

Q. What are the proposed construction schedules and in-service dates for the 2025 Project?

A. FPL expects that the Project will be placed into service by January 31, 2025. The construction schedule includes the time necessary to obtain the required permits, procure materials and contract labor, clear and grade each of the sites, construct access pathways and drainage systems, install the solar generating equipment, erect fencing, build and energize the interconnection facilities, and test and startup each solar facility. The current construction schedules as shown in Exhibit KF-5 support the proposed commercial in-service date of January 31, 2025.

Q. As of April 3, 2024, what is the status of the certifications and permits required to begin construction for the solar energy centers?

A. All 12 sites that are part of the 2025 Project, have received federal, state, and local permits required to begin construction. The Florida Department of Environmental Protection ("FDEP") has issued an Environmental Resource Permit ("ERP") for all 12 solar energy centers. Six of the 12 sites also required Section 404 Authorization from the FDEP for impacts to state assumed waters, and all of these permits have been received. Finally, all centers have received the required county site plan approvals.

Q. Please describe how FPL will manage the centers' operations and monitor their performance once each center enters commercial service.

A. The 2025 Project will benefit from monitoring and performance analysis tools that FPL developed and has continuously improved since it began operating universal solar in 2009. These proprietary tools optimize plant operations and drive process efficiencies. For example, the 12 solar energy centers will be operated and monitored from FPL's Renewable Operations Control Center ("ROCC"), the remote centralized location that interacts with all FPL universal solar and energy storage facilities. The ROCC uses advanced technology to identify potential problems earlier than traditional detection methods, creates automatic directives to investigate and resolve solar field energy losses, and allows the operating teams the opportunity to prevent or mitigate the effects of failures. FPL compares the performance of like components on similar generating units and determines how to make improvements, which often prevents problems before they would otherwise occur. The anomaly detection and artificial intelligence used in the ROCC technology tools improve service reliability for FPL customers.

The ROCC also provides a mechanism to reset inverters automatically and allows for remote technical troubleshooting to restore inverter operation. If remote restoration is not possible, the ROCC will have diagnosed the equipment to identify the key component requiring repair or replacement and will write a corrective order for the site to execute.

In addition, the ROCC interacts with FPL's Center of Work Excellence to create daily work schedules that most efficiently restore equipment, execute work orders, and perform preventative maintenance, with the goal of continuously reducing lost energy and production costs.

Finally, the 12 solar energy centers will be supported by regional operations teams that FPL has staffed across its territory in DeSoto, Clay, and St. Lucie Counties. These regional operations centers support the solar fleet's ongoing maintenance requirements and position resources in locations that ensure a timely response to any loss of production that arises.

II. 2025 Project Costs

Q. Please describe the cost-related requirements in the SoBRA provision that you will address.

A. FPL's 2021 Rate Settlement contains two cost-related requirements associated with solar projects for which FPL seeks recovery pursuant to the SoBRA provision. First, FPL's SoBRA recovery is capped at an average of $1,250 per kW_{AC} for the cost of the 2025 Project's components, engineering, and construction (the "Cost Cap"). In the event that the land component allocated to a solar site is already included as Plant Held for Future Use ("PHFU"), the cost of that land is subtracted from the Cost Cap, resulting in an "Adjusted Cap." Second, the Settlement requires that the cost of the 2025 Project's components, engineering, and construction be reasonable.

Q. Does the 2025 Project meet these two cost requirements?

A. Yes. FPL seeks SoBRA recovery only up to the Cost Cap and the Adjusted Cap, as applicable, for each solar site. In addition, the costs for the 2025 Project are reasonable, even though, as described below, costs have materially increased. The calculation of the associated revenue requirement and SoBRA Factor will be covered by other witnesses at the time of FPL's projection filing in this docket.

Q. Please describe the applicable Cost Cap and Adjusted Cap.

A. The Rate Settlement includes a Cost Cap of $1,250 per kW_{AC}, which is then subject to a reduction in the event the solar energy centers use land that is already included as PHFU as identified in FPL's Rate Case in the Exhibit labeled MV-5. Of the 12 solar energy centers that are part of the 2025 Project, six utilize property identified on FPL's Rate Case Exhibit MV-5. The costs for the remaining six sites and the required easements were included in rate base forecasts for Test Year 2022 and Subsequent Year 2023. Therefore, for purposes of the 2025 Project, FPL has assumed that the land and associated easement costs for all 12 sites are included in its rate base.

To calculate the average Adjusted Cap, FPL subtracted 100% of the land costs for the 2025 Project. The resulting average Adjusted Cap for the 2025 Project – and the amount FPL seeks to recover through the SoBRA – is $1,159 per kW_{AC}, which is $350 per kW_{AC} less than the average total adjusted estimated cost of $1,509 per kW_{AC}. Table 1 below shows the Adjusted Cap associated

with each of the 12 applicable sites, the average Adjusted Cap for the 2025 Project, as well as the total and adjusted estimated costs per site and the average adjusted cost for the 2025 Project.

TABLE 1:
COSTS PER SITE AND TOTAL AVERAGE COSTS

	Settlement Cost Cap ($/kW$_{AC}$)	Less PHFU value ($/kW$_{AC}$)	Adjusted Cap (SoBRA recovery amount $/kW$_{AC}$)	Estimated Cost ($/kW$_{AC}$)	Estimated Cost Less PHFU value ($/kW$_{AC}$)
Big Water	$1,250	$78	$1,172	$1,580	$1,502
Hog Bay	$1,250	$60	$1,190	$1,576	$1,516
Holopaw	$1,250	$189	$1,061	$1,908	$1,720
Green Pasture	$1,250	$60	$1,190	$1,553	$1,493
Thomas Creek	$1,250	$99	$1,151	$1,477	$1,378
Swallowtail	$1,250	$83	$1,167	$1,579	$1,496
Fawn	$1,250	$115	$1,135	$1,606	$1,491
Long Creek	$1,250	$74	$1,176	$1,595	$1,521
Speckled Perch	$1,250	$85	$1,165	$1,560	$1,475
Fox Trail	$1,250	$59	$1,191	$1,542	$1,482
Tenmile Creek	$1,250	$56	$1,194	$1,583	$1,527
Redlands	$1,250	$131	$1,119	$1,639	$1,508
Average Total	$1,250	$91	**$1,159**	$1,600	$1,509

Q. Does FPL's cost estimate include the costs associated with transmission interconnection?

A. Yes. The estimated capital costs include the projected cost for the construction of each solar energy center's unique transmission interconnection configuration.

Q. What was the basis for the $1,250 per kW$_{AC}$ Cost Cap included in the Settlement?

A. The $1,250 per kW$_{AC}$ Cost Cap included in the Settlement was based on an evaluation of the actual costs incurred for FPL's solar energy centers that were placed in service during late 2020 and early 2021, contracted costs for centers expected to be placed in service in 2022, and estimated costs for centers expected to be placed in service in 2023. FPL also evaluated the forward cost estimates, available market and commodity projections, and major equipment cost curves available at that time. FPL forecasted that major solar equipment cost curves would continue to decrease consistent with industry trends as supply chains continued maturing. FPL anticipated that this equipment cost decrease would offset the expected escalation in labor and minor material costs. Based on this analysis, FPL determined that the $1,250 per kW$_{AC}$ Cost Cap was an appropriate and achievable target for solar construction that would occur 24 to 36 months in the future.

Q. Please identify the factors that impacted the cost to build solar since the time FPL projected it could build these solar energy centers at or below $1,250 per kW$_{AC}$.

A. The primary factors that drove the increases in solar construction costs after FPL entered the Settlement are (i) increased solar panel prices due to (a) a U.S. Department of Commerce ("DOC") inquiry with respect to circumvention of anti-dumping and countervailing duties on solar cells and panels manufactured in China ("Circumvention Inquiry"), and (b) increases in the cost of polysilicon,

the basic component in solar panel manufacturing; (ii) increased use of single-axis tracker technology in the 2025 Project; and (iii) general cost increases due to inflation, higher interest rates and increased demand for solar.

Q. Please describe the Circumvention Inquiry.

A. To provide background, United States trade law currently imposes duties and trade measures on goods imported from China into the United States. These trade measures include the anti-dumping duty and countervailing duty on PV solar cells and panels that are imported from China into the United States ("China AD/CV Duties"), which range from 0% to 254% depending on the exporter of the solar panel. In response to the China AD/CV Duties, most of the PV solar manufacturing operations that support the United States market have moved out of China.

On February 8, 2022, Auxin Solar requested that the DOC initiate an investigation into whether solar cell and panel imports from Malaysia, Vietnam, Thailand, and Cambodia were circumventing the China AD/CV Duties by undertaking only minor processing outside of China while using primarily Chinese components. The DOC initiated an investigation on April 1, 2022. A Presidential Proclamation instituting a two-year moratorium on China AD/CV Duties stemming from the Circumvention Inquiry was issued June 6, 2022, but final resolution of this matter remains outstanding. A DOC determination that the China AD/CV Duties were circumvented will result in the application of duties of up to 254% on offending panels. The impact of such a determination

would be widespread, as the countries associated with DOC's Circumvention Inquiry would have accounted for approximately 80% of panel imports into the United States.

The DOC reached a preliminary determination in the Circumvention Inquiry on December 8, 2022 and a final determination on August 23, 2023 announcing new rules regarding tariff application to solar cells and modules from the four Southeast Asian countries involved in the Inquiry. Litigation regarding the Circumvention Inquiry remains ongoing.

Q. How has the Circumvention Inquiry impacted the cost of panels used in the 2025 Project?

A. The initiation of the DOC's investigation and the associated tariff risk caused an immediate shutdown of the solar panel supply chain, including panel production and shipments. This shutdown lasted approximately five months. The production and delivery of panel imports from Malaysia, Vietnam, Thailand, and Cambodia has now resumed. However, solar panel pricing increased dramatically to account for the perceived risk of tariffs and other U.S. government actions on solar panel imports. While panel pricing is beginning to improve following the Circumvention Inquiry, pricing for panels that will be used for the 2025 Project were impacted by the higher costs and are approximately 40% higher than the pricing that FPL anticipated when it entered the 2021 Rate Settlement.

Q. Please identify the main drivers behind the increased price of polysilicon.

A. The cost of polysilicon has increased due to two main reasons: supply constraints and trade restrictions.

Q. Please describe what you mean by "supply constraints" and explain how these constraints impacted the cost of polysilicon.

A. Since the time FPL entered the 2021 Rate Settlement, the global demand for solar panels has been increasing and, with the passage of the Inflation Reduction Act in August 2022, that demand continued to accelerate through the period in which FPL was procuring panels for the 2025 Project. The polysilicon market was unable to expand fast enough to meet growing demand for raw materials from panel suppliers. For example, from January 2021 through January 2023, the global polysilicon pricing index increased approximately 216%, from $12.41 to $39.19 per kilogram.

Q. Please describe the import restriction associated with polysilicon and how it has led to increased costs.

A. Beginning on June 21, 2022, the United States established a presumption that all goods from the Xinjiang region of China are prohibited from entering the United States. Among sectors designated as high priority for enforcement is polysilicon, the basic component in solar panel manufacturing. As a result, United States Customs and Border Protection ("CBP") began detaining panels at ports of entry to the United States in August 2022. FPL has worked closely with suppliers and CBP to clarify what documentation is required by CBP to

trace solar panel raw materials back to the point of origin in order to definitively demonstrate that no materials originated in Xinjiang.

This import restriction caused solar panel suppliers to incur high storage and detainment costs, as well as additional costs for traceability programs and documentation. As a result, panel suppliers that utilize non-Xinjiang polysilicon seized upon this market environment as an opportunity to demand a premium price, since their proof of compliance allows for easier traceability to satisfy CBP documentation requirements and limits the risk of detention at a port.

Q. Please explain how the increased use of single-axis trackers contributed to an increase in the cost of the 2025 Project.

A. The mechanical system for single-axis trackers has higher material and installation costs than a fixed-tilt system. However, the benefits of a single-axis tracking system typically outweigh the costs, because a tracking design yields a higher net capacity factor, and more importantly, a higher firm capacity value than a fixed-tilt design. FPL determined that it was feasible to deploy trackers at 11 of 12 of the 2025 Project locations and elected to make this design change. The sole exception is the Redlands Solar Energy Center in Miami-Dade County which will use a fixed racking configuration due to higher wind loading design variables relative to other counties in Florida. The use of single-axis trackers at 11 of 12 sites for the 2025 Project increased overall Project costs by $66 per kW_{AC}, while raising the net capacity factor of the 2025 Project to

27.3%. As noted by witness Whitley, the higher project costs are offset by significant fuel and emission savings resulting in greater economic benefits for customers.

Q. Please explain how general inflationary pressure, higher interest rates, higher commodity prices and increased demand contributed to an increase in the cost of the 2025 Project.

A. General inflationary pressure impacted the costs for all solar construction which includes solar panels, steel, aluminum, single-axis tracking components, copper, land, and labor. In addition, the tightening of the U.S. job market following the second half of 2020 and the increase in demand for solar generation increased engineering, procurement, and construction ("EPC") contractor costs.

Construction costs also were impacted by higher interest rates. The 30-year United States Treasury Bond yield rate as of August 10, 2021, the date of the Rate Settlement Agreement, was 1.99%. The average rate for the period August 2021 through February 2024 was 3.38%, an increase of nearly 140 basis points. The significant rise in interest rates that followed after FPL entered the 2021 Rate Settlement resulted in higher costs to construct and finance capital projects, including the 2025 Project.

Q. Please summarize how the market factors you have described impacted the overall cost of the 2025 Project.

A. The largest portion of the increase is due to the rise in solar panel costs due to the Circumvention Inquiry, increases in the price of polysilicon, and inflationary pressure on the solar panels. In total, this contributed $181 per kW_{AC} of incremental project costs. The change to mostly single-axis trackers added an additional $66 per kW_{AC}. The balance of the increase in pricing, about $103 per kW_{AC}, is due to the general inflationary pressures, commodity pricing, and higher interest rates I described. This cost increase summary is depicted visually in Exhibit KF-7.

Q. With these factors causing price increases during this period, were the costs FPL ultimately secured for construction of the 2025 Project reasonable?

A. Yes.

Q. What is the basis for your conclusion?

A. FPL utilized a robust procurement process designed to obtain the best available pricing. The costs for surveying, engineering, equipment, materials, and construction services necessary to complete the solar energy centers were established through competitive bidding processes. The balance of the costs was the result of leveraging existing agreements for engineering services, which themselves were the result of a separate competitive bidding process. Therefore, the vast majority of the 2025 Project's equipment, engineering, and construction costs were subject to competitive solicitations.

FPL followed a procurement process similar to what it employed for prior SoBRA projects approved by the Commission, this time accounting for the solar market-specific impacts from the Circumvention Inquiry as well as the polysilicon importation restrictions. FPL solicited proposals for the supply of the PV panels, PCUs, and step-up power transformers, as well as the EPC services required to complete the proposed solar energy centers for the 2025 Project.

Q. Please describe the competitive solicitations for 2025 Project's solar panels.

A. FPL's solicitation for solar panels for the 2025 Project was expanded as compared to prior RFPs to include additional suppliers. FPL also requested and received more detailed information from bidders which helped to evaluate the potential impacts of the pending trade actions described above. In total, FPL requested proposals for PV panels from 19 large, industry-leading suppliers, including suppliers from more diverse locations which had not previously participated in FPL's solicitation process. Thirteen suppliers submitted bids that satisfied the requirements of the RFP, FPL evaluated each of these conforming bids, and ultimately contracted with two suppliers.

The two selected panel suppliers for the 2025 Project offered the lowest cost and highest efficiency products, offered some of the highest product quality programs in the industry, and were able to provide strong financial performance security. In addition, the suppliers selected for the 2025 Project, given the location of their manufacturing facilities, each demonstrated their ability to

navigate the current regulatory environment with minimal impacts to both cost and schedule. Finally, by timing the execution of solar panel purchase contracts for the third quarter of 2023, FPL was able to avoid the height of market disruptions from the Circumvention Inquiry.

Q. Please describe the competitive solicitations for 2025 Project's PCU and Step-Up Power Transformers.

A. FPL solicited proposals from six PCU suppliers. Five of the six suppliers submitted proposals that met the requirements of the RFP and were evaluated. FPL selected the lowest cost bidder to supply the PCUs for the 2025 Project.

FPL solicited proposals from six industry-leading manufacturers of step-up power transformers. FPL evaluated three qualifying proposals and selected the lowest cost bidder to supply the transformers.

Q. Please describe the competitive solicitations for the 2025 Project's construction contractors.

A. FPL solicited EPC service proposals for the construction of the solar energy centers from 15 industry-recognized contractors. Eight of the 15 contractors submitted bids, and FPL evaluated these proposals for completeness. Using this method of evaluation, FPL then identified and selected the lowest cost bidder for each site to build the 2025 Project. One contract has been finalized with the selected EPC contractor. The scope of services for the EPC solicitations included the supply of the balance of equipment and other materials.

FPL solicited proposals for construction of substation and interconnection facilities from 20 industry-recognized contractors. Eighteen of the 20 contractors submitted bids and the proposals were evaluated. Similarly, FPL then identified the lowest cost bidder for each site within the 2025 Project and then selected five lowest cost bidders to construct substation and interconnection facilities at the sites.

Q. Are there other benefits associated with the 2025 Project?

A. Yes, there are several other benefits associated with the 2025 Project. For example, approximately 200 individuals will be employed at each of the solar energy centers at the height of construction, creating about 2,400 jobs in total for the 2025 Project. The contractors building the solar energy centers are required to exercise reasonable efforts to use local labor and resources. The jobs associated with the construction of the solar energy centers will therefore provide a secondary benefit by boosting the economy of local businesses in Florida. Additionally, the local communities will benefit from increased property tax revenues following the completion of the solar energy centers. In 2023, FPL paid approximately $24.1 million in property taxes to 24 counties across Florida for the PV solar energy centers that were operational in the 2023 tax year.

Q. Does this conclude your testimony?

A. Yes.

Site Name	County	Solar Program	Year In-Service	Size
Desoto	Desoto	ECRC	10/27/2009	25
Space Coast	Brevard	ECRC	4/16/2010	10
Manatee	Manatee	FPL Rate Base Solar	12/31/2016	74.5
Citrus	DeSoto	FPL Rate Base Solar	12/31/2016	74.5
Babcock	Charlotte	FPL Rate Base Solar	12/31/2016	74.5
Horizon	Alachua / Putnam	SoBRA	1/1/2018	74.5
Coral Farms	Putnam	SoBRA	1/1/2018	74.5
Wildflower	DeSoto	SoBRA	1/1/2018	74.5
Indian River	Indian River	SoBRA	1/1/2018	74.5
Blue Cypress	Indian River	SoBRA	3/1/2018	74.5
Barefoot Bay	Brevard	SoBRA	3/1/2018	74.5
Hammock	Hendry	SoBRA	3/1/2018	74.5
Loggerhead	St. Lucie	SoBRA	3/1/2018	74.5
Miami-Dade	Miami-Dade	SoBRA	1/31/2019	74.5
Interstate	St. Lucie	SoBRA	1/31/2019	74.5
Sunshine Gateway	Columbia	SoBRA	1/31/2019	74.5
Pioneer Trail	Volusia	SoBRA	1/31/2019	74.5
Sweetbay	Martin	SolarTogether	1/31/2020	74.5
Northern Preserve	Baker	SolarTogether	1/31/2020	74.5
Cattle Ranch	Desoto	SolarTogether	1/31/2020	74.5
Twin Lakes	Putnam	SolarTogether	1/31/2020	74.5
Blue Heron	Hendry	SolarTogether	1/31/2020	74.5
Babcock Preserve	Charlotte	SolarTogether	1/31/2020	74.5
Hibiscus	Palm Beach	SoBRA	4/30/2020	74.5
Okeechobee	Okeechobee	SoBRA	4/30/2020	74.5
Southfork	Manatee	SoBRA	4/30/2020	74.5
Echo River	Suwannee	SoBRA	4/30/2020	74.5
Blue Indigo	Jackson	Gulf Rate Base Solar	4/1/2020	74.5
Lakeside	Okeechobee	SolarTogether	12/18/2020	74.5
Trailside	St. Johns	SolarTogether	12/21/2020	74.5
Union Springs	Union	SolarTogether	12/31/2020	74.5
Egret	Baker	SolarTogether	12/20/2020	74.5
Nassau	Nassau	SolarTogether	12/24/2020	74.5
Magnolia Springs	Clay	SolarTogether	3/29/2021	74.5
Pelican	St. Lucie	SolarTogether	2/28/2021	74.5
Palm Bay	Brevard	SolarTogether	3/31/2021	74.5
Rodeo	DeSoto	SolarTogether	3/30/2021	74.5
Sabal Palm	Palm Beach	SolarTogether	4/30/2021	74.5
Willow	Manatee	SolarTogether	5/28/2021	74.5
Discovery	Brevard	SolarTogether	5/30/2021	74.5
Orange Blossom	Indian River	SolarTogether	5/30/2021	74.5
Fort Drum	Okeechobee	SolarTogether	6/30/2021	74.5
Blue Springs	Jackson	Gulf Rate Base Solar	12/31/2021	74.5
Cotton Creek	Escambia	Gulf Rate Base Solar	12/31/2021	74.5
Ghost Orchid	Hendry	FPL Rate Base Solar	1/31/2022	74.5
Sawgrass	Hendry	FPL Rate Base Solar	1/31/2022	74.5

Site Name	County	Solar Program	Year In-Service	Size
Sundew	St Lucie	FPL Rate Base Solar	1/31/2022	74.5
Elder Branch	Manatee	FPL Rate Base Solar	1/31/2022	74.5
Grove	Indian River	FPL Rate Base Solar	1/31/2022	74.5
Immokalee	Collier	FPL Rate Base Solar	1/31/2022	74.5
Everglades	Miami-Dade	FPL Rate Base Solar	1/31/2023	74.5
Pink Trail	St Lucie	FPL Rate Base Solar	1/31/2023	74.5
Bluefield Preserve	St. Lucie	FPL Rate Base Solar	1/31/2023	74.5
Cavendish	Okeechobee	FPL Rate Base Solar	1/31/2023	74.5
Anhinga	Clay	FPL Rate Base Solar	1/31/2023	74.5
Blackwater River	Santa Rosa	FPL Rate Base Solar	1/31/2023	74.5
Chipola River	Calhoun	FPL Rate Base Solar	1/31/2023	74.5
Flowers Creek	Calhoun	FPL Rate Base Solar	1/31/2023	74.5
First City	Escambia	FPL Rate Base Solar	1/31/2023	74.5
Apalachee	Jackson	FPL Rate Base Solar	1/31/2023	74.5
Wild Azalea	Gadsden	SolarTogether	2/28/2023	74.5
Chautauqua	Walton	SolarTogether	2/28/2023	74.5
Shirer Branch	Calhoun	SolarTogether	2/28/2023	74.5
Saw Palmetto	Bay	SolarTogether	4/30/2023	74.5
Cypress Pond	Washington	SolarTogether	4/30/2023	74.5
Etonia Creek	Putnam	SolarTogether	6/30/2023	74.5
Terrill Creek	Clay	SoBRA	1/31/2024	74.5
Silver Palm	Palm Beach	SoBRA	1/31/2024	74.5
Ibis	Brevard	SoBRA	1/31/2024	74.5
Orchard	St Lucie / Indian River	SoBRA	1/31/2024	74.5
Beautyberry	Hendry	SoBRA	1/31/2024	74.5
Turnpike	Indian River	SoBRA	1/31/2024	74.5
Monarch	Martin	SoBRA	1/31/2024	74.5
Caloosahatchee	Hendry	SoBRA	1/31/2024	74.5
White Tail	Martin	SoBRA	1/31/2024	74.5
Prairie Creek	DeSoto	SoBRA	1/31/2024	74.5
Pineapple	St Lucie	SoBRA	1/31/2024	74.5
Canoe	Okaloosa	SoBRA	1/31/2024	74.5
Sparkleberry	Escambia	SolarTogether	3/31/2024	74.5
Sambucus	Manatee	SolarTogether	3/31/2024	74.5
Three Creeks	Manatee	SolarTogether	3/31/2024	74.5
Fourmile Creek	Calhoun	SolarTogether	3/31/2024	74.5
Big Juniper Creek	Santa Rosa	SolarTogether	3/31/2024	74.5
Pecan Tree	Walton	SolarTogether	3/31/2024	74.5
Wild Quail	Walton	SolarTogether	3/31/2024	74.5
Hawthorne Creek	DeSoto	SolarTogether	3/31/2024	74.5
Nature Trail	Baker	SolarTogether	3/31/2024	74.5
Woodyard	Hendry	SolarTogether	3/31/2024	74.5
			Total Sites	88
			Total MW	6,442.0


Project Boundary
Solar Infrastructure
Suitable for Future Utility
Unsuitable for Future Utility
Big Water Solar Energy Center
FPL
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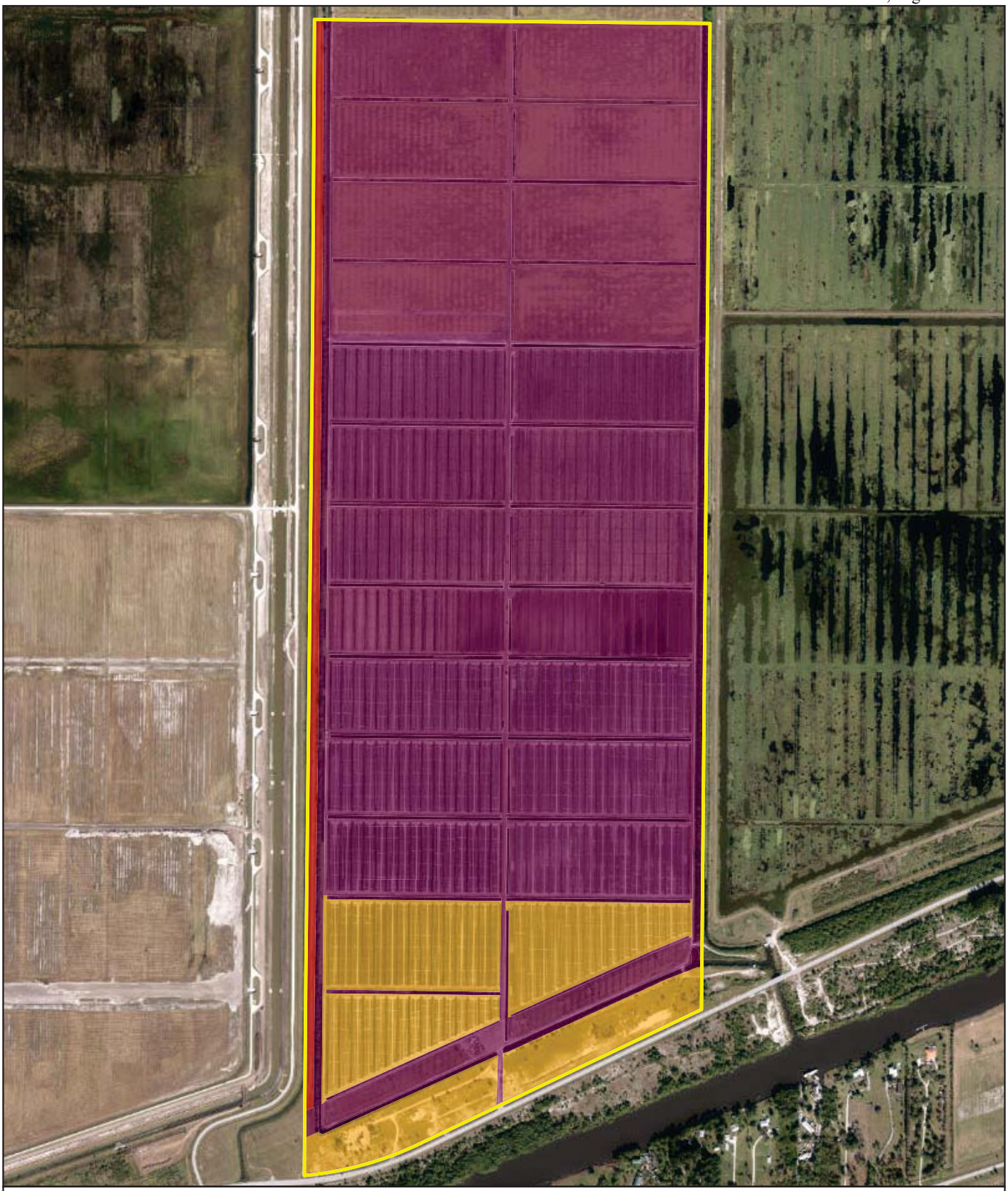
700
Feet
N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Project Boundary
Solar Infrastructure
Suitable for Future Utility
Unsuitable for Future Utility
Fox Trail Solar Energy Center
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Feet
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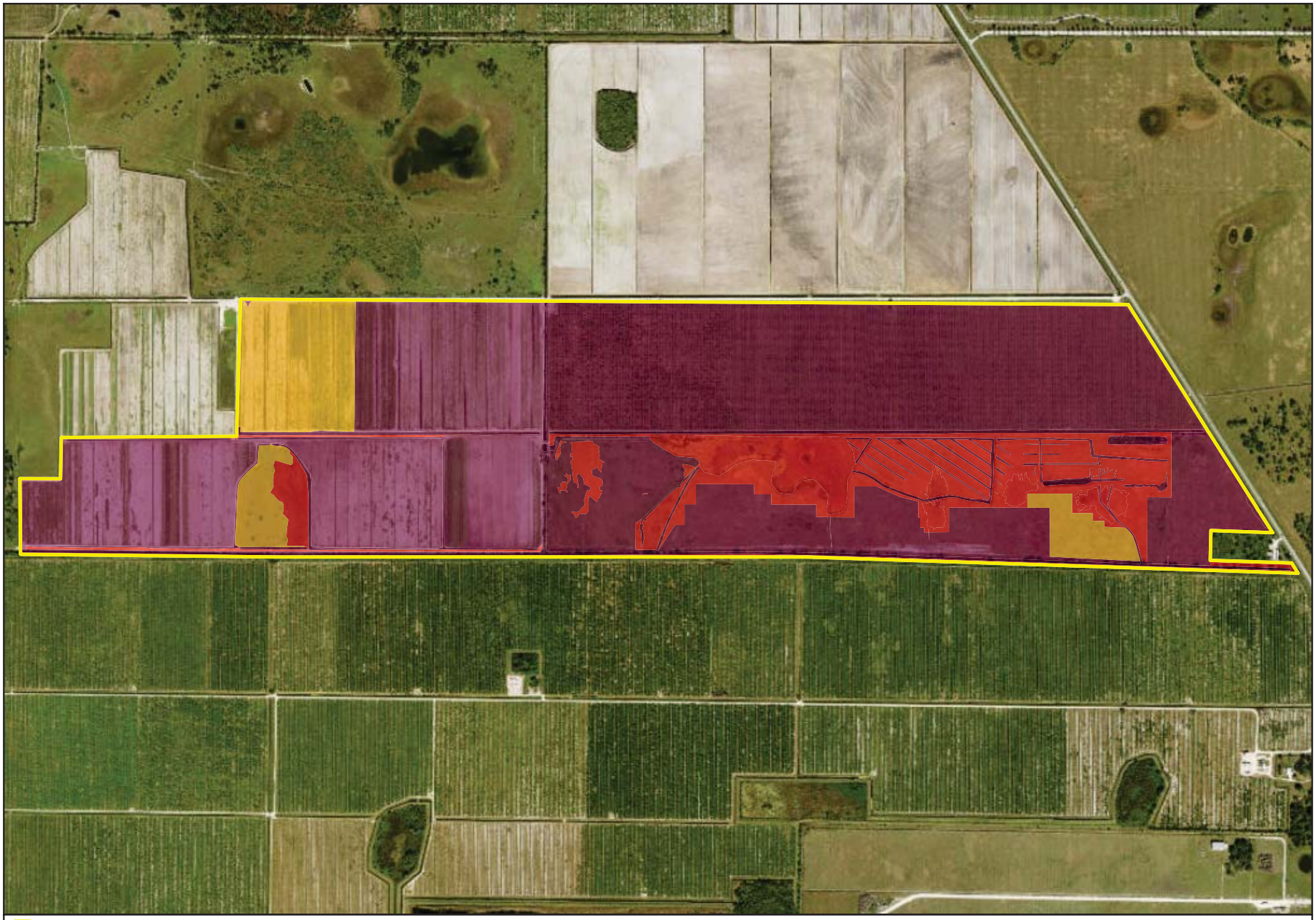
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Unsuitable for Future Utility
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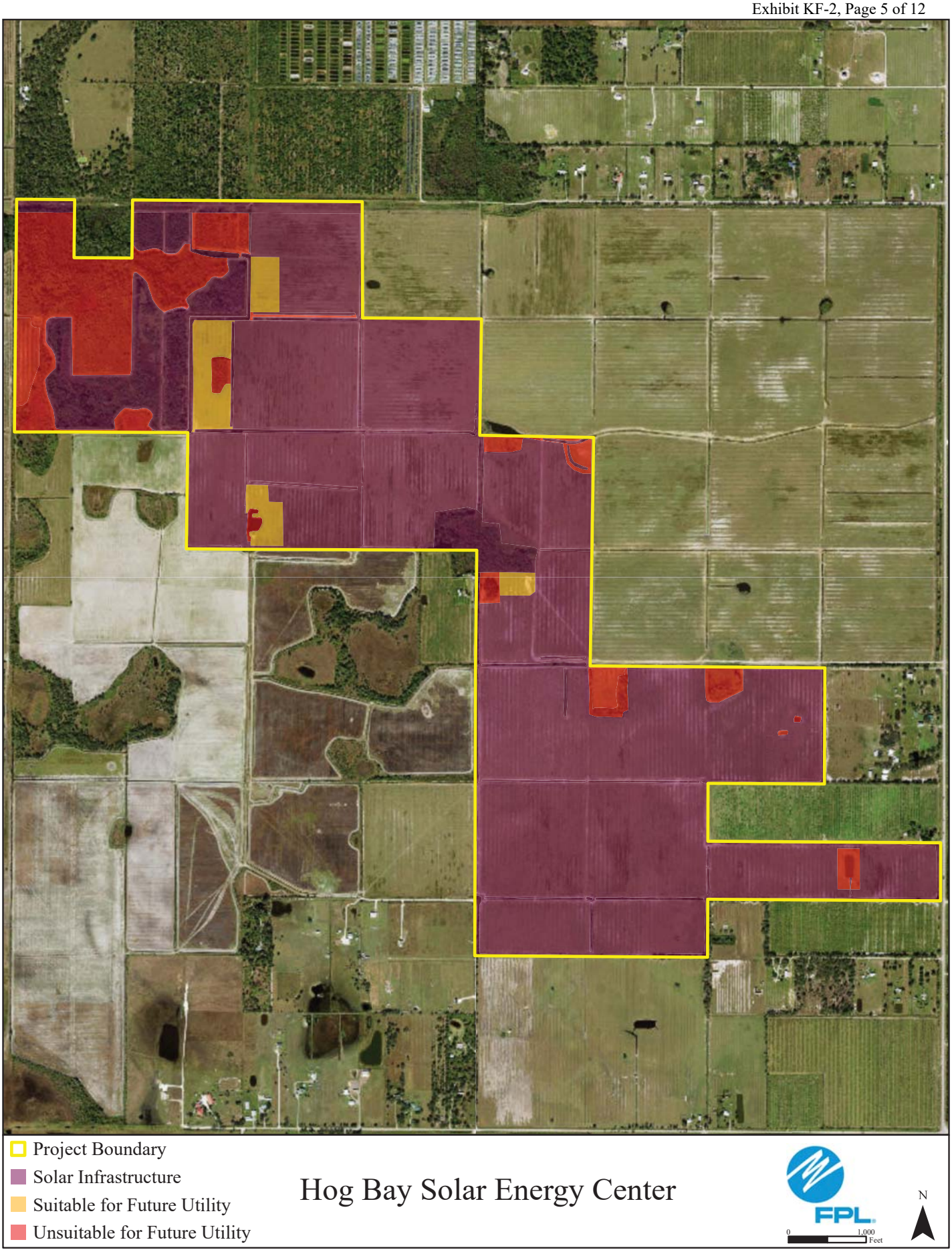
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Project Boundary
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Unsuitable for Future Utility
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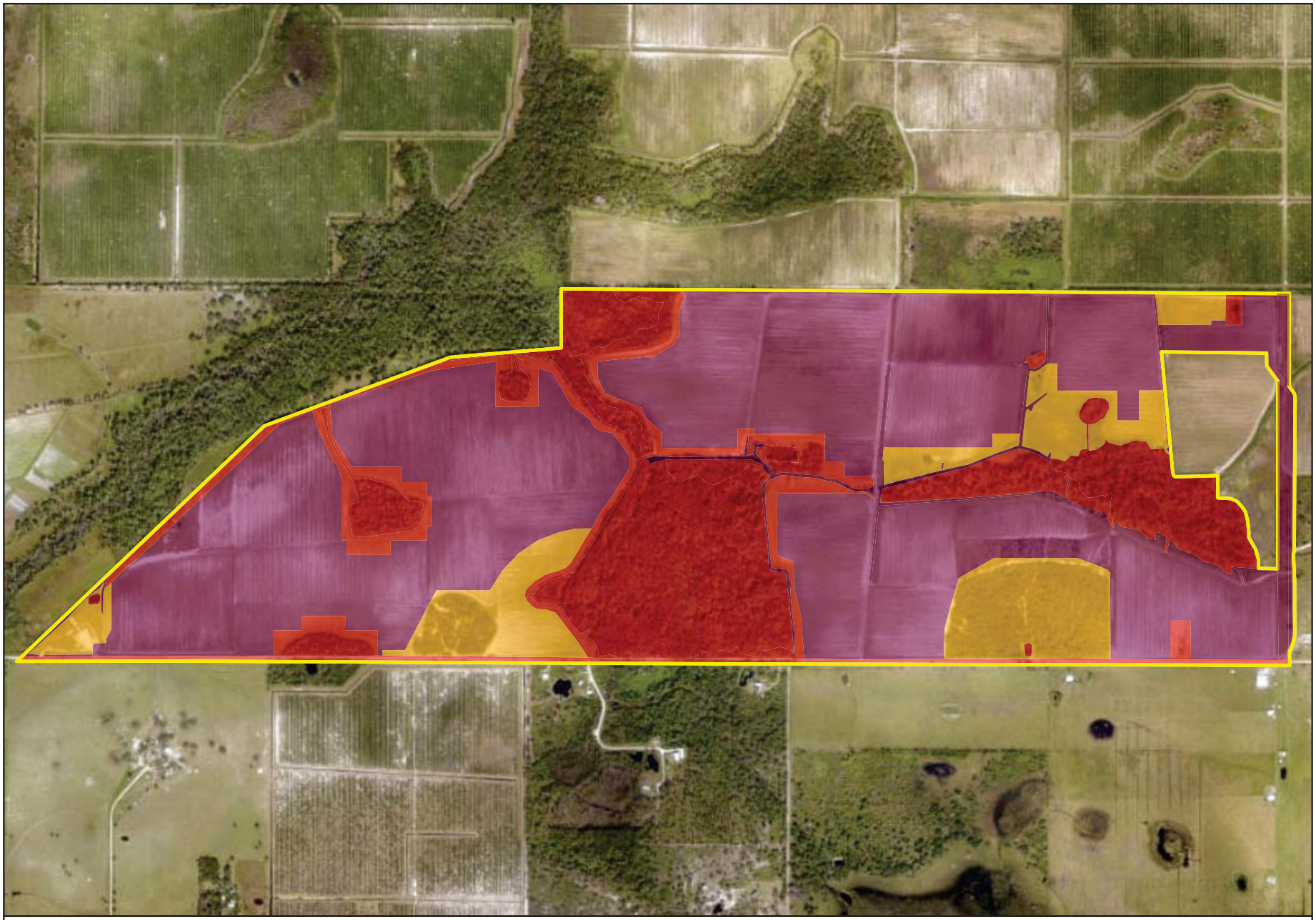
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Unsuitable for Future Utility
Long Creek Solar Energy Center
FPL
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Project Boundary
Solar Infrastructure
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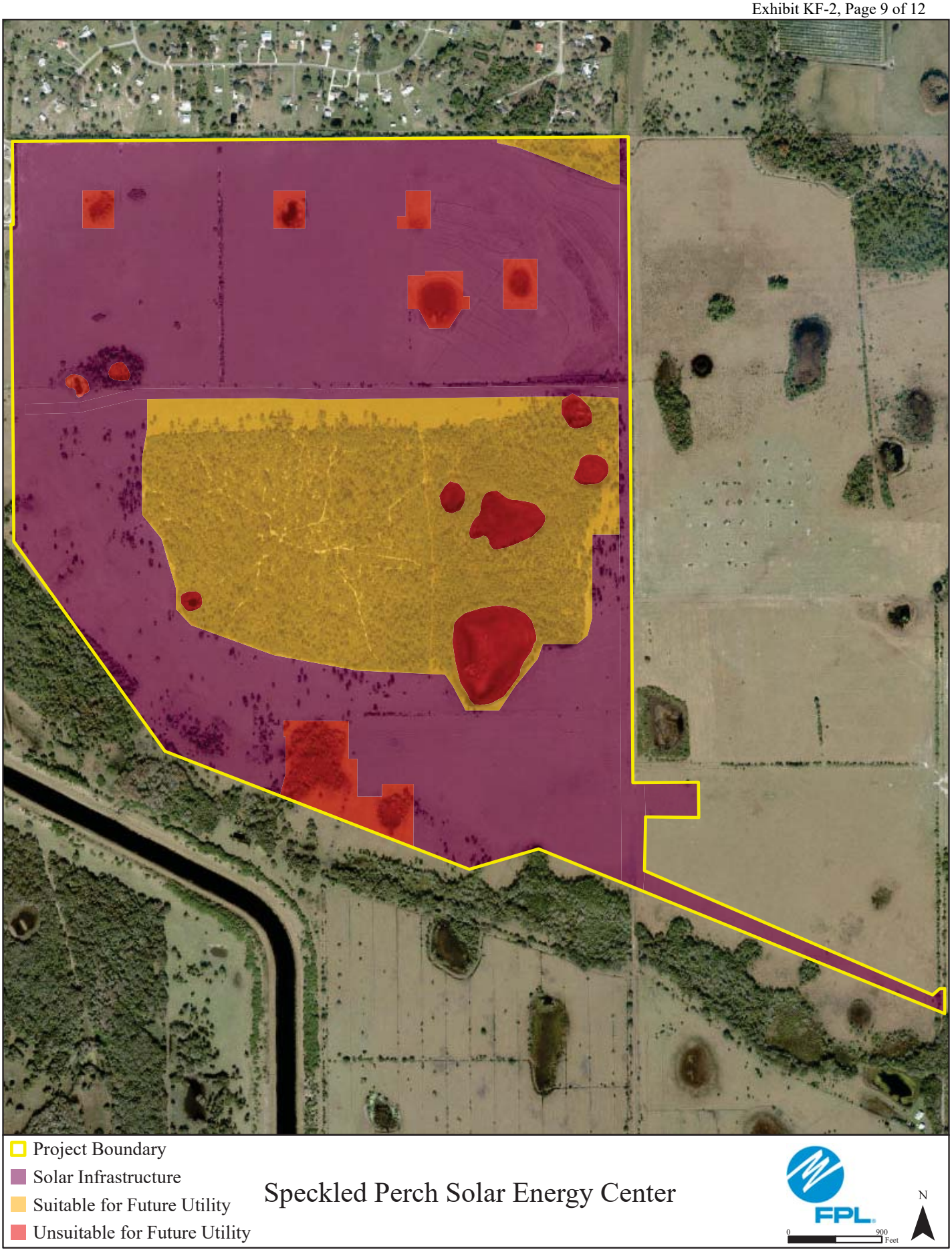
Project Boundary
Solar Infrastructure
Suitable for Future Utility
Unsuitable for Future Utility
Speckled Perch Solar Energy Center
FPL
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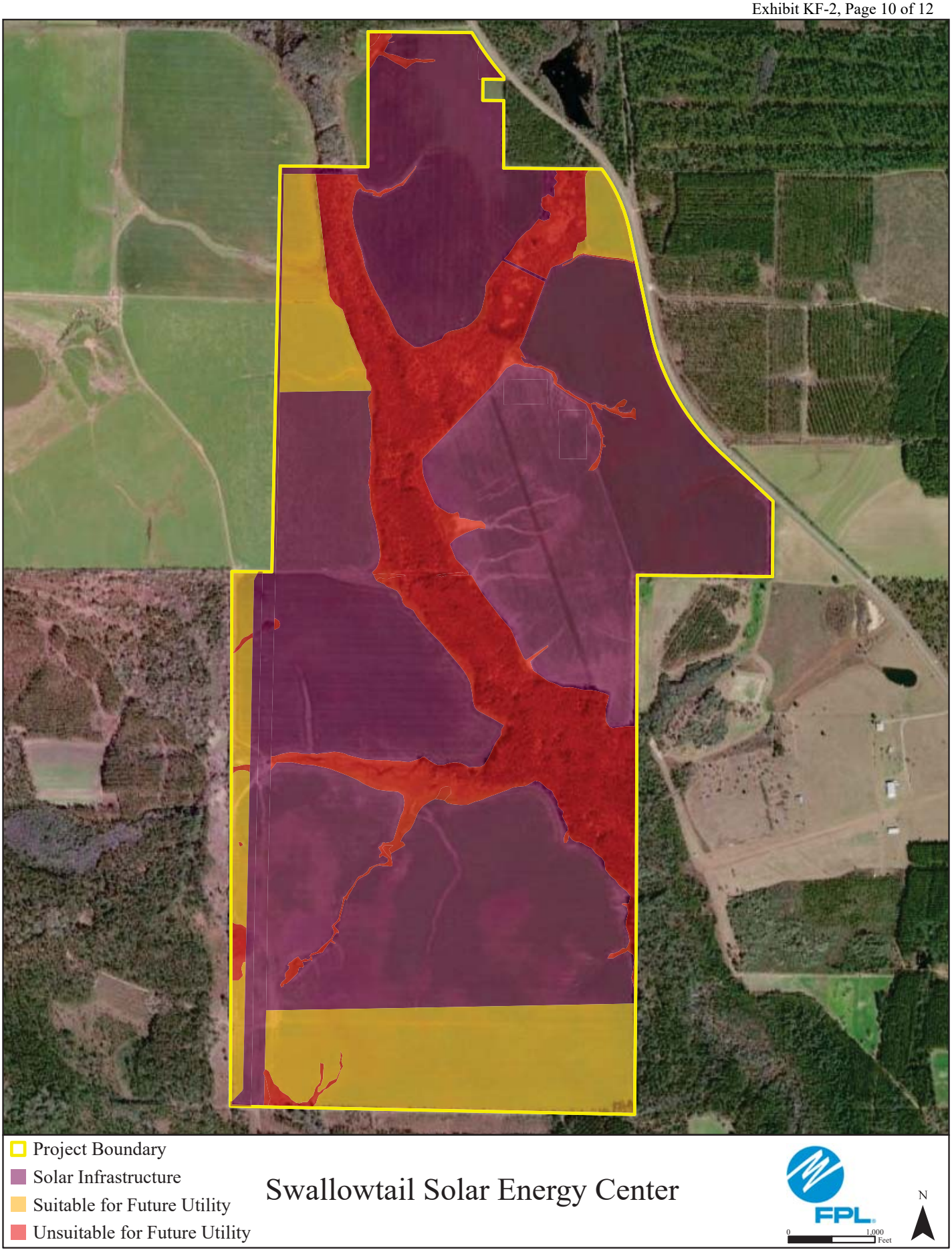
900
Feet
N


Project Boundary
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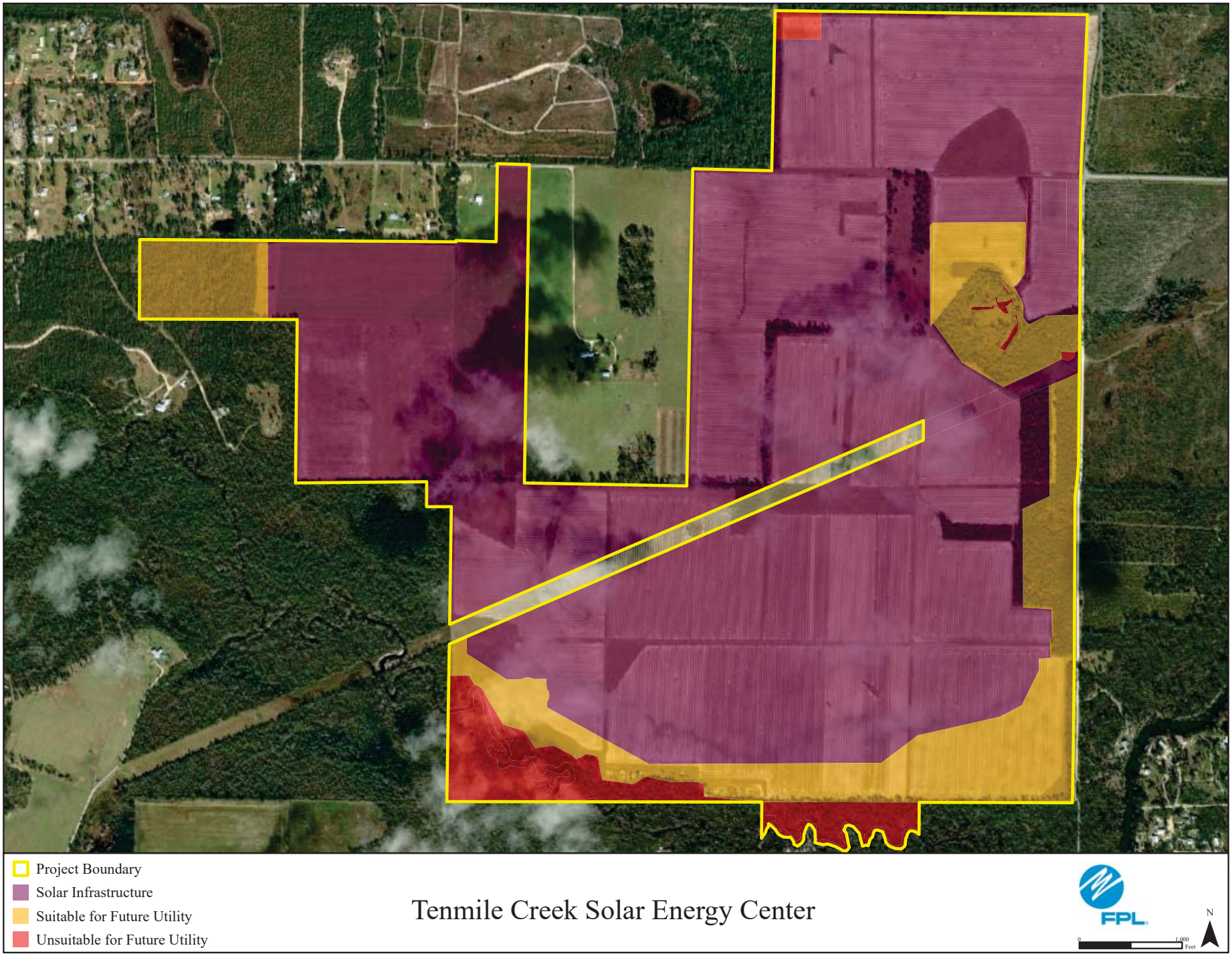
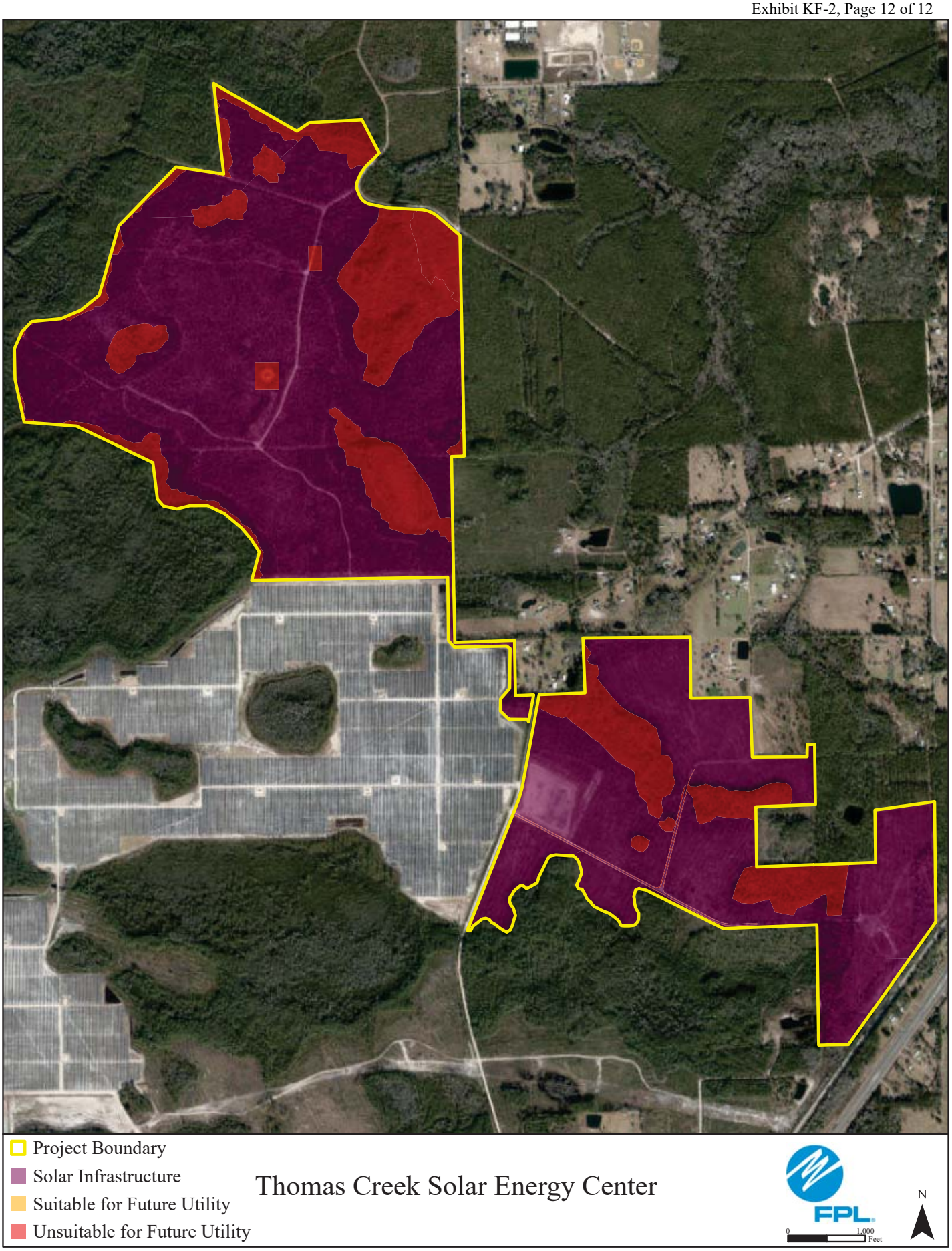
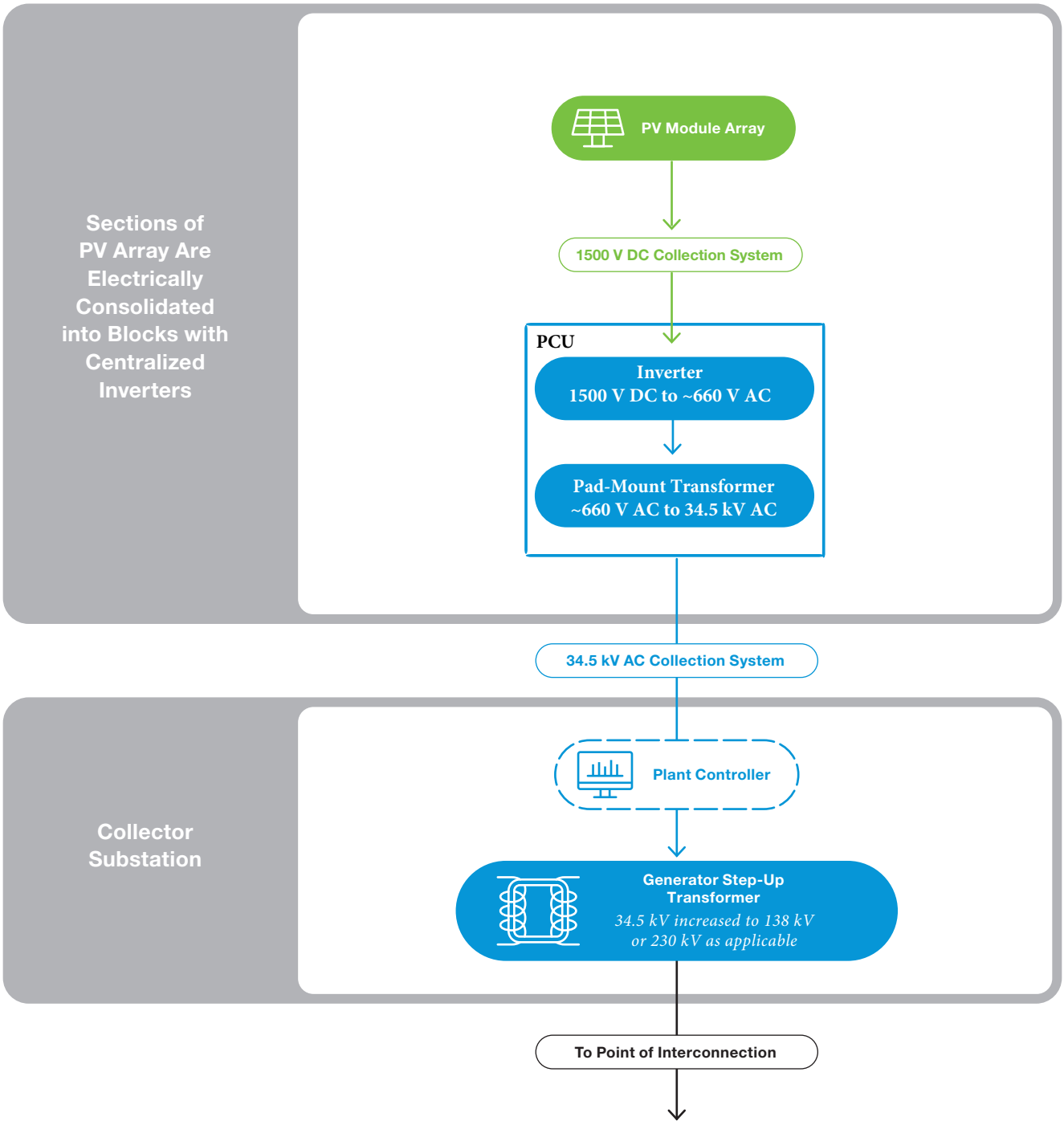
Suitable for Future Utility
Unsuitable for Future Utility
Swallowtail Solar Energy Center
FPL
0
1,000
Feet
N


Project Boundary
Solar Infrastructure
Suitable for Future Utility
Unsuitable for Future Utility
Tenmile Creek Solar Energy Center
FPL
N
0
1,000
Feet


Project Boundary
Solar Infrastructure
Suitable for Future Utility
Unsuitable for Future Utility
Thomas Creek Solar Energy Center
FPL
0
1,000
Feet
N

Typical Solar Energy Center Block Diagram



Specifications	Holopaw	Speckled Perch	Big Water	Fawn	Hog Bay	Green Pasture
Peak Alternating Current Output (MWac)	74.5	74.5	74.5	74.5	74.5	74.5
Total Installed Direct Current Capacity (MWdc)	104.30	104.30	104.30	104.30	104.31	100.58
PV Panel Suppliers	Adani	Adani	Adani	Adani	Adani	Adani
PV Panel Technologies	144-half-cell mono-crystalline silicon, bifacial	144-half-cell mono-crystalline silicon, bifacial	144-half-cell mono-crystalline silicon, bifacial	144-half-cell mono-crystalline silicon, bifacial	144-half-cell mono-crystalline silicon, bifacial	144-half-cell mono-crystalline silicon, bifacial
PV Panel Voltage (V)	1,500	1,500	1,500	1,500	1,500	1,500
Average PV Panel Power Ratings (WDC)	563	536	543	565	536	565
Number of Panels	185,258	194,465	192,194	184,604	194,488	178,011
Inverter DC Input (MWDC)	104.30	104.30	104.30	104.30	104.31	100.58
DC/AC Ratio	1.40	1.40	1.40	1.40	1.40	1.35
Number of Power Conversion Units (PCU)	19	19	19	19	19	19
PCU Supplier	General Electric	General Electric	General Electric	General Electric	General Electric	General Electric
Inverter Type	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566
Inverter Rating (MVA/V)	4.52/660	4.52/660	4.52/660	4.52/660	4.52/660	4.52/660
Medium Voltage Transformers Per PCU	1	1	1	1	1	1
Medium Voltage Transformer Supplier	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil
Medium Voltage Transformer Type	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings
Medium Voltage Transformer Rating (MVA)	4.58	4.58	4.58	4.58	4.58	4.58
Number of Inverters	19	19	19	19	19	19
Inverter Capacity Installed (MVA)	85.88	85.88	85.88	85.88	85.88	85.88
Number of Medium Voltage Transformers	19	19	19	19	19	19
Medium Voltage Transformer Capacity Installed (MVA)	87.02	87.02	87.02	87.02	87.02	87.02
Number of Panel Per PCU Block (Average)	9,750	10,235	10,115	9,716	10,236	9,369
DC Input Per PCU Block (MWDC)	5.49	5.49	5.49	5.49	5.49	5.29
PV Panel Support Mechanism	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system
PV Panel Support Mechanism Material	Structural steel shapes	Structural steel shapes	Structural steel shapes	Structural steel shapes	Structural steel shapes	Structural steel shapes
Step-up Power Transformer Supplier	Starkstrom-Geratebau GMBH	Hyundai Power Transformers USA, Inc.	Starkstrom-Geratebau GMBH	Starkstrom-Geratebau GMBH	Starkstrom-Geratebau GMBH	Hyundai Power Transformers USA, Inc.
Step-up Power Transformer Type	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz
Step-up Power Transformer Ratings	241.5 kV, 85 MVA	241.5 kV, 85 MVA	241.5 kV, 85 MVA	241.5 kV, 85 MVA	241.5 kV, 85 MVA	241.5 kV, 85 MVA+C23:H31

Specifications	Thomas Creek	Fox Trail	Long Creek	Swallowtail	Tenmile Creek	Redlands
Peak Alternating Current Output (MWac)	74.5	74.5	74.5	74.5	74.5	74.5
Total Installed Direct Current Capacity (MWdc)	89.41	104.30	104.31	104.30	104.31	118.47
PV Panel Suppliers	Trina	Adani	Trina	Trina	Trina	Trina
PV Panel Technologies	132-half-cell mono-crystalline silicon, bifacial	144-half-cell mono-crystalline silicon, bifacial	132-half-cell mono-crystalline silicon, bifacial	132-half-cell mono-crystalline silicon, bifacial	132-half-cell mono-crystalline silicon, bifacial	132-half-cell mono-crystalline silicon, bifacial
PV Panel Voltage (V)	1,500	1,500	1,500	1,500	1,500	1,500
Average PV Panel Power Ratings (WDC)	660	570	655	654	600	593
Number of Panels	135,470	182,979	159,247	159,495	173,850	199,944
Inverter DC Input (MWDC)	89.41	104.30	104.31	104.30	104.31	118.47
DC/AC Ratio	1.20	1.40	1.40	1.40	1.40	1.59
Number of Power Conversion Units (PCU)	19	19	19	19	19	19
PCU Supplier	General Electric	General Electric	General Electric	General Electric	General Electric	General Electric
Inverter Type	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566	FLEXINVERTER 1566
Inverter Rating (MVA/V)	4.52/660	4.52/660	4.52/660	4.52/660	4.52/660	4.52/660
Medium Voltage Transformers Per PCU	1	1	1	1	1	1
Medium Voltage Transformer Supplier	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil	Toshiba or Sanil
Medium Voltage Transformer Type	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings	3-Phase, 60 Hz, 2-Windings
Medium Voltage Transformer Rating (MVA)	4.58	4.58	4.58	4.58	4.58	4.58
Number of Inverters	19	19	19	19	19	19
Inverter Capacity Installed (MVA)	85.88	85.88	85.88	85.88	85.88	85.88
Number of Medium Voltage Transformers	19	19	19	19	19	19
Medium Voltage Transformer Capacity Installed (MVA)	87.02	87.02	87.02	87.02	87.02	87.02
Number of Panel Per PCU Block (Average)	7,130	9,630	8,381	8,394	9,150	10,523
DC Input Per PCU Block (MWDC)	4.71	5.49	5.49	5.49	5.49	6.24
PV Panel Support Mechanism	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system	Single-axis tracker system	Fixed racking system
PV Panel Support Mechanism Material	Structural steel shapes	Structural steel shapes	Structural steel shapes	Structural steel shapes	Structural steel shapes	Structural steel shapes
Step-up Power Transformer Supplier	Starkstrom-Geratebau GMBH	Hyundai Power Transformers USA, Inc.	Starkstrom-Geratebau GMBH	Starkstrom-Geratebau GMBH	Starkstrom-Geratebau GMBH	Hyundai Power Transformers USA, Inc.
Step-up Power Transformer Type	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz	3-Phase, 60 Hz
Step-up Power Transformer Ratings	241.5 kV, 85 MVA	241.5 kV, 85 MVA	241.5 kV, 85 MVA	241.5kv, 85MVA	241.5kv, 85MVA	138 kV, 85 MVA

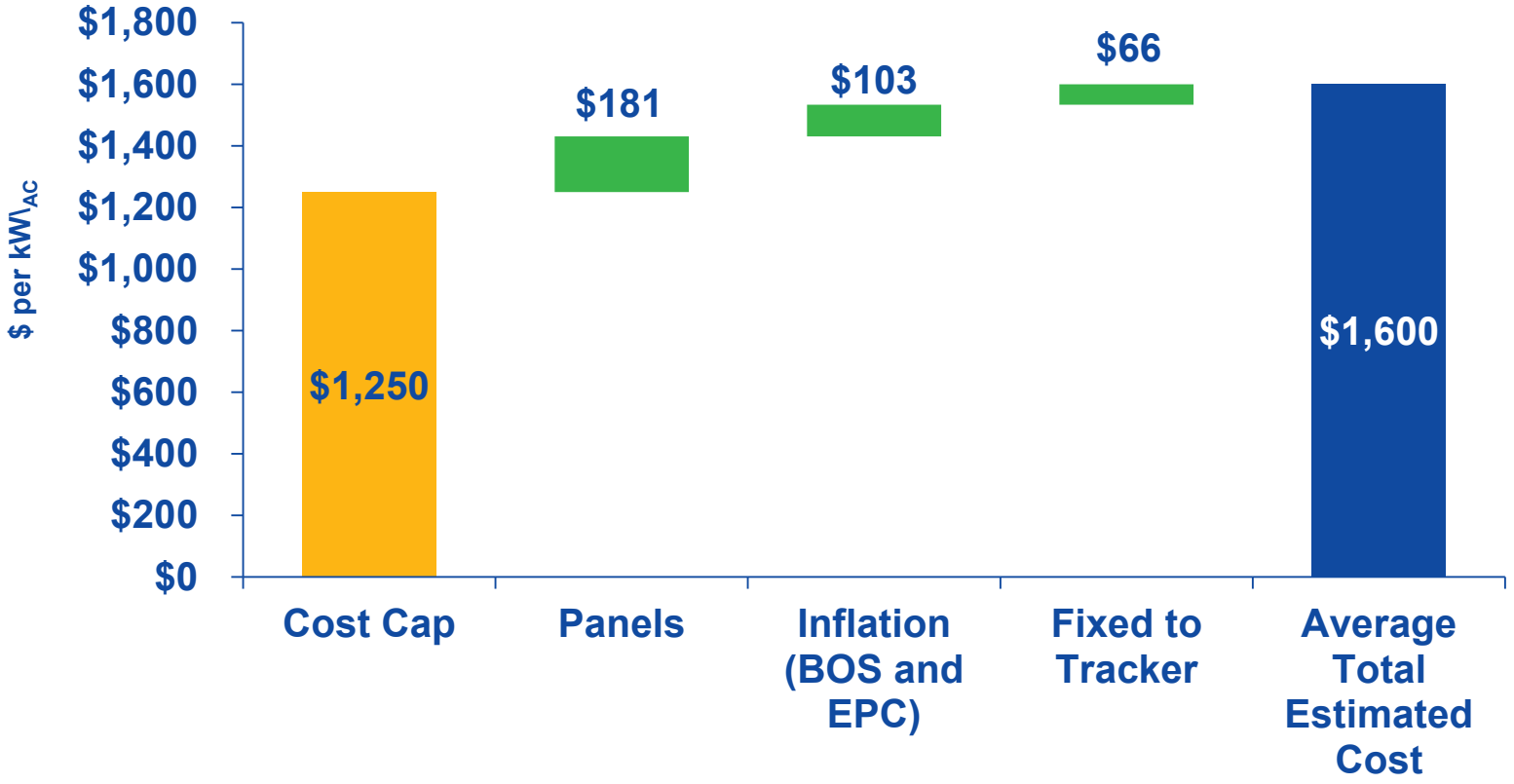
		2025 Project							
		Big Water		Fawn		Fox Trail		Green Pasture	
Item	Major Activities	Start	Finish	Start	Finish	Start	Finish	Start	Finish
1	PV Panel Contract	12/19/2022	5/3/2023	12/19/2022	5/3/2023	12/19/2022	5/3/2023	12/19/2022	5/3/2023
2	Power Conversion Unit Contract	3/29/2023	6/22/2023	3/29/2023	6/22/2023	3/29/2023	6/22/2023	3/29/2023	6/22/2023
3	EPC contract	3/31/2023	6/22/2023	3/31/2023	6/22/2023	3/31/2023	6/22/2023	3/31/2023	6/22/2023
4	LNTP for EPC Contracts	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023
5	Contractor mobilization	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024
6	Panel deliveries	4/17/2024	10/9/2024	6/26/2024	9/25/2024	6/12/2024	10/23/2024	8/14/2024	11/6/2024
7	Power Conversion Unit deliveries	7/1/2024	7/5/2024	6/3/2024	6/7/2024	6/3/2024	6/7/2024	6/10/2024	6/14/2024
8	Energization, Testing & Startup	12/12/2024	1/31/2025	10/22/2024	1/31/2025	10/31/2024	1/31/2025	11/12/2024	1/31/2025
9	Commence Commercial Operations	**1/31/2025**							

		2025 Project							
		Hog Bay		Holopaw		Long Creek		Redlands	
Item	Major Activities	Start	Finish	Start	Finish	Start	Finish	Start	Finish
1	PV Panel Contract	12/19/2022	5/3/2023	12/19/2022	5/3/2023	12/19/2022	7/3/2023	12/19/2022	7/3/2023
2	Power Conversion Unit Contract	3/29/2023	6/22/2023	3/29/2023	6/22/2023	3/29/2023	6/22/2023	3/29/2023	6/22/2023
3	EPC contract	3/31/2023	6/22/2023	3/31/2023	6/22/2023	3/31/2023	6/22/2023	3/31/2023	6/22/2023
4	LNTP for EPC Contracts	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023
5	Contractor mobilization	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024
6	Panel deliveries	5/1/2024	7/24/2024	8/14/2024	11/20/2024	7/5/2024	8/30/2024	5/10/2024	9/27/2024
7	Power Conversion Unit deliveries	6/17/2024	6/21/2024	7/15/2024	7/19/2024	7/8/2024	7/12/2024	5/27/2024	5/31/2024
8	Energization, Testing & Startup	11/19/2024	1/31/2025	11/14/2024	1/31/2025	11/28/2024	1/31/2025	12/1/2024	1/31/2025
9	Commence Commercial Operations	**1/31/2025**							

		2025 Project							
		Speckled Perch		Swallowtail		Tenmile Creek		Thomas Creek	
Item	Major Activities	Start	Finish	Start	Finish	Start	Finish	Start	Finish
1	PV Panel Contract	12/19/2022	5/3/2023	12/19/2022	7/3/2023	12/19/2022	7/3/2023	12/19/2022	7/3/2023
2	Power Conversion Unit Contract	3/29/2023	6/22/2023	3/29/2023	6/22/2023	3/29/2023	6/22/2023	3/29/2023	6/22/2023
3	EPC contract	3/31/2023	6/22/2023	3/31/2023	6/22/2023	3/31/2023	6/22/2023	3/31/2023	6/22/2023
4	LNTP for EPC Contracts	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023	7/3/2023
5	Contractor mobilization	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024	4/1/2024
6	Panel deliveries	2/21/2024	5/15/2024	7/5/2024	9/27/2024	5/10/2024	8/30/2024	5/10/2024	7/12/2024
7	Power Conversion Unit deliveries	7/8/2024	7/12/2024	7/15/2024	7/19/2024	7/22/2024	7/26/2024	7/15/2024	7/19/2024
8	Energization, Testing & Startup	12/19/2024	1/31/2025	10/29/2024	1/31/2025	11/7/2024	1/31/2025	10/24/2024	1/31/2025
9	Commence Commercial Operations	**1/31/2025**							

	Commercial Operation Date	**Capital cost $**	PV Array Costs	Transmission Interconnection and Integration	Land and Easements	AFUDC	Total	$/kWac
Big Water	1/31/2025		$103,888,901	$2,325,000	$5,827,454	$5,676,282	**$117,717,637**	$1,580
Hog Bay	1/31/2025		$106,582,991	$610,000	$4,501,825	$5,728,606	**$117,423,422**	$1,576
Holopaw	1/31/2025		$112,610,524	$9,009,000	$14,044,654	$6,499,589	**$142,163,767**	$1,908
Green Pasture	1/31/2025		$104,040,169	$1,560,000	$4,477,416	$5,643,483	**$115,721,068**	$1,553
Thomas Creek	1/31/2025		$96,915,634	$525,000	$7,412,669	$5,207,421	**$110,060,724**	$1,477
Swallowtail	1/31/2025		$105,025,605	$758,000	$6,181,115	$5,653,286	**$117,618,006**	$1,579
Fawn	1/31/2025		$104,931,160	$488,000	$8,591,927	$5,633,809	**$119,644,896**	$1,606
Long Creek	1/31/2025		$103,951,904	$3,635,000	$5,488,336	$5,749,658	**$118,824,898**	$1,595
Speckled Perch	1/31/2025		$102,863,773	$1,460,000	$6,326,897	$5,575,269	**$116,225,939**	$1,560
Fox Trail	1/31/2025		$104,149,419	$675,000	$4,431,708	$5,602,025	**$114,858,152**	$1,542
Tenmile Creek	1/31/2025		$103,415,868	$4,550,000	$4,164,580	$5,769,910	**$117,900,358**	$1,583
Redlands	1/31/2025		$99,649,082	$7,004,000	$9,763,025	$5,699,752	**$122,115,859**	$1,639
Average	**1/31/2025**		**$104,002,086**	**$2,716,583**	**$6,767,634**	**$5,703,258**	**$119,189,561**	**$1,600**

2025 Project Cost Walk



FPL

Docket No. 20240001-EI
Cost Increase Waterfall
Exhibit KF-7, Page 1 of 1

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

TESTIMONY OF ANDREW W. WHITLEY

DOCKET NO. 20240001-EI

APRIL 3, 2024

Q. Please state your name and business address.

A. My name is Andrew W. Whitley. My business address is Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408.

Q. By whom are you employed and what is your position?

A. I am employed by Florida Power & Light Company ("FPL") as Engineering Manager of Integrated Resource Planning in the Finance Department.

Q. Please describe your educational background and professional experience.

A. I graduated from Lehigh University in 2004 with a Bachelor of Science in Mechanical Engineering. I joined FPL in 2004 as part of FPL's Distribution Business Unit, and performed various engineering tasks related to providing new service as well as maintaining the reliability of existing services to FPL's customers. In 2007, I joined FPL's Resource Assessment and Planning group (now referred to as the Integrated Resource Planning ("IRP") group). During that time, I have been involved in a variety of resource planning projects for FPL, including FPL's Ten-Year Site Plans (or "TYSP"), Solar Base Rate Adjustment ("SoBRA") filings, several need determination proceedings for new power plants under the Florida Power Plant Siting Act, (the Okeechobee Clean Energy Center in 2015 and the Dania Beach Clean Energy Center

in 2018), FPL's Rate Case filings, and the Demand-Side Management ("DSM") Goals proceedings. I became the Manager of the IRP group in 2022 and have served as the project leader for FPL's Ten-Year Site Plan since 2022.

Q. Please describe your duties and responsibilities in your current position.

A. In my current position as Engineering Manager of Integrated Resource Planning, I am responsible for the management and coordination of economic analyses of alternatives to meet FPL's resource needs and maintain system reliability. These analyses are designed to determine the magnitude and timing of resource needs for the FPL system and then develop the integrated resource plan with which those resource needs will be met. The analyses are also designed to identify ways to improve system economics and/or enhance system reliability for customers.

Q. Have you previously testified on resource planning issues before the Florida Public Service Commission ("Commission")?

A. Yes. I testified in FPL's 2019 DSM Goals (Docket No. 20190015-EG). My testimony in that docket focused on FPL's resource planning process and how it related to the development of demand-side management portfolios. I also provided testimony on the economic analysis of FPL's 2024 SoBRA in Docket No. 20230001-EI. In addition, I appeared before the Commission at its 2022 and 2023 workshops on the Florida utilities' Ten-Year Site Plans.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- AWW-1 Load Forecast
- AWW-2 FPL Fuel Price Forecast

- AWW-3 FPL Resource Plans
- AWW-4 CPVRR – Costs and (Benefits)
- AWW-5 Yearly PTC Impact
- AWW-6 Avoided Natural Gas
- AWW-7 Avoided Air Emissions

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

A. The purpose of my testimony is to present the results of the economic analysis, which shows that 894 megawatts alternating current ("MW_{AC}") of universal solar photovoltaic ("PV") generation scheduled to be placed in service in early 2025 (the "2025 Project") is cost-effective. My testimony covers several areas. First, I identify the 12 sites that make up the 2025 Project. Second, I discuss the major assumptions and the methodology used to perform the economic analysis. Third, I present the results of the economic analysis demonstrating that the addition of the 2025 Project is cost-effective. Lastly, I discuss non-economic benefits derived from the construction and operation of these facilities.

Q. Please summarize your testimony.

A. FPL is proposing the construction and operation of the 2025 Project: 894 MW_{AC} of solar PV generation, consisting of one construction project made up of 12 universal solar energy centers which are expected to be in-service by January 31, 2025. FPL performed an economic analysis and determined that the 2025 Project will result in a reduction in the cumulative present value of revenue requirements ("CPVRR") to FPL customers, for a total savings of approximately $911 million. In addition, these centers are projected to result in a significant reduction in the projected use of fossil fuels,

which will in turn lower FPL's system reliance on generation fueled by natural gas. The 2025 Project is cost-effective, as required to qualify for a SoBRA under FPL's 2021 Rate Case Settlement ("2021 Rate Settlement") approved by the Commission in Order No. PSC-2021-0446-S-EI, PSC-2021-0446A-S-EI and PSC-2024-0078-FOF-EI.

Q. Please describe the 2025 Project.

A. The 2025 Project comprises 12 solar energy centers with a total nameplate capacity of 894 MW_{AC}, which is expected to be placed in service by January 31, 2025. Each of these centers is projected to generate about 177,500 MWh per year. This is enough energy to serve the annual energy needs of about 13,660 homes. FPL witness Fagan describes each technology to be employed at each center in greater detail and demonstrates that the construction cost for the proposed solar generation is reasonable.

Q. What are the major system assumptions used in this analysis?

A. The major assumptions used in this study are the following:

- **Load Forecast –** The analysis uses FPL's most recent long-term load forecast, approved as FPL's official load forecast in November 2023. This load forecast, including system peaks and net energy for load, is used in FPL's 2024 TYSP and is shown in Exhibit AWW-1;
- **Fuel Price Forecast –** The analysis uses FPL's most recent long-term fuel forecast, based on FPL's standard long-term fuel forecasting methodology, approved as FPL's official fuel price forecast in September 2023. This fuel price forecast is used in FPL's 2024 TYSP and is shown in Exhibit AWW-2; and

- **CO_2 Emission Price Forecast -** The CO_2 cost projections used in this filing are based on ICF's proprietary CO_2 compliance cost forecast dated September 26, 2022. ICF is a consulting firm with extensive experience in forecasting the cost of air emissions and is recognized as one of the industry leaders in this field. This forecast, which assumes that CO_2 compliance costs will start in the year 2036, was used in preparing FPL's 2024 TYSP.

Q. Please describe the resource plans that formed the basis for FPL's cost-effectiveness analysis.

A. For purposes of this filing, FPL developed two resource plans. The first resource plan, called the "No 2025 SoBRA Plan," does not include any new solar facilities beyond those already in-service as of the end of 2025. In this plan, future resource needs are met by combined cycle units and battery storage.

The second resource plan, called the "2025 SoBRA Plan," adds the 2025 Project described above. Because each center is assumed to provide approximately 39% of the nameplate capacity as firm capacity to meet FPL's reliability obligations, 600 MW of batteries in 2029 in the "No 2025 SoBRA Plan" are reduced to 300 MW of batteries in the "2025 SoBRA Plan," and 900 MW of batteries in 2033 in the "No 2025 SoBRA Plan" are reduced to 300 MW in the "2025 SoBRA Plan" These two resource plans are shown in Exhibit AWW-3.

Q. What is the net capacity factor of the facilities in the 2025 Project?

A. The 2025 centers are projected to have an average yearly net capacity factor (or "NCF") of 27.3%.

Q. How did FPL determine the firm capacity that solar facilities will provide?

A. Firm capacity value is based on the expected output of a solar facility at the time of summer peak load, which typically occurs annually in August from 4 p.m. to 5 p.m., and winter peak load, which typically occurs in January from 7 a.m. to 8 a.m. FPL uses a "net peak load" methodology to determine what firm capacity value at FPL's Summer and Winter peak hours would be appropriate to apply to PV facilities. The potential capacity contribution of PV facilities is dependent upon several factors including: site location, technology, design, and the total amount of solar that is operating on FPL's system. FPL applies this same methodology to evaluate all its solar PV facilities, existing or new.

Based on this methodology, the 2025 centers are projected to have an average summer firm capacity value of 39.3% of their nameplate rating. Therefore, the 12 centers with a total nameplate capacity of 894 MW_{AC} are assumed to have a firm capacity value of 351 MW_{AC} at time of summer peak. These solar installations are assumed to have a 1.9% firm capacity value at time of winter peak due to FPL's winter peak occurring in the early morning, when there is little solar generation output.

Q. Please provide an overview of the analytical process that FPL used to determine the cost-effectiveness of the 2025 Project.

A. FPL used the capacity expansion and hourly production cost functions of the Aurora model to forecast the system economics and develop resource plans that include or exclude the 2025 Project. This model has been used by FPL in prior proceedings at the Commission. Each Aurora modeling run is used to determine the optimal resource plan

and associated generation system costs, consisting of capital costs, fixed operations and maintenance ("O&M") costs, capital replacement costs, fuel costs, variable O&M costs, and emissions costs for a given resource plan. The Aurora model is used to determine the CPVRR for each resource plan.

Q. Please provide the result of the economic analysis.

A. To determine the CPVRR impact of the proposed solar generation, FPL subtracted the CPVRR of the No 2025 SoBRA Plan from the CPVRR of the 2025 SoBRA Plan. As shown in Exhibit AWW-4, the CPVRR benefit to FPL customers from the 2025 Project is approximately $911 million.

Q. Does the economic analysis include the effects of Production Tax Credits ("PTCs")?

A. Yes, the economic analysis includes the effects of PTCs that were part of the Inflation Reduction Act that was passed in 2022. The calculation of the PTCs from the 2025 Project is shown in Exhibit AWW-5.

Q. FPL witness Fagan states that the 2025 Project has a higher NCF as compared to FPL's earlier solar installations. Please explain how the higher NCF impacted the economic analysis.

A. The higher NCF achieved largely by the use of more single axis tracking systems results in higher levels of energy output. As FPL is able to generate more output from the solar energy centers, it results in incremental production tax credits, which in turn reduces the overall CPVRR of the 2025 SoBRA Plan and leads to greater customer savings. In addition, higher levels of energy output from using single axis tracking systems drive larger reductions in fossil fuel usage and emissions, which also reduces

the overall CPVRR of the 2025 SoBRA Plan.

Q. Is the 2025 Project cost-effective even though it is over the cost cap in the 2021 Rate Settlement?

A. Yes. Although the estimated installed cost of the 2025 Project is $1,600 per kilowatt alternating current ("kW_{AC}"), which is over the $1,250 per kW_{AC} Cost Cap in the 2021 Rate Settlement, the 2025 Project is projected to save customers approximately $911 million CPVRR and therefore is still significantly cost-effective for FPL customers.

Q. Will the 2025 Project reduce FPL's use of fossil fuel?

A. Yes. As shown on Exhibit AWW-6, the energy from the 2025 Project will displace fossil fuel generation, specifically natural gas. The Project is expected to reduce the annual average use of natural gas by 13,982 million cubic feet. By adding the Project to its generation fleet, FPL reduces its reliance on natural gas and reduces exposure to fuel price volatility.

Q. What effect will these solar energy centers have with respect to greenhouse gases and other air emissions?

A. As shown in Exhibit AWW-7, reducing the use of fossil fuel results in an average annual reduction of 833,427 tons of CO_2. This reduction in CO_2 is equivalent to removing approximately 160,800 cars from the road. Sulfur dioxide emissions are roughly unchanged and nitrogen oxide emissions are reduced by an annual average of 71 tons.

Q. What is your conclusion regarding the 2025 Project?

A. As demonstrated by the economic analysis described in my testimony, the addition of the 2025 Project will result in CPVRR savings of approximately $911 million.

Therefore, the 2025 Project meets the SoBRA cost-effectiveness requirement established in the 2021 Rate Settlement. Additionally, the 2025 Project will reduce the use of fossil fuel, reduce air emissions, and reduce FPL's reliance on natural gas.

Q. Does this conclude your testimony?

A. Yes.

Load Forecast
November 2023

Year	Summer Peak MW	Winter Peak MW	Net Energy for Load MWh
2024	27,785	22,486	140,469,040
2025	28,039	22,715	141,760,595
2026	28,273	23,049	142,991,002
2027	28,477	23,375	144,052,949
2028	28,819	23,711	145,101,075
2029	29,160	24,037	146,550,780
2030	29,544	24,436	148,289,967
2031	29,998	24,737	149,577,661
2032	30,644	25,211	151,677,427
2033	31,278	25,685	153,686,055
2034	31,917	26,163	155,677,526
2035	32,573	26,658	157,715,250
2036	33,237	27,170	159,678,553
2037	33,895	27,691	161,501,513
2038	34,536	28,216	163,154,117
2039	35,143	28,735	164,626,973
2040	35,707	29,249	165,934,759
2041	36,079	29,685	164,918,528
2042	36,428	29,973	166,510,767
2043	36,780	30,264	168,119,103
2044	37,137	30,558	169,743,699
2045	37,496	30,854	171,384,723
2046	37,860	31,154	173,042,342
2047	38,227	31,457	174,716,726
2048	38,597	31,763	176,408,045
2049	38,972	32,072	178,116,474
2050	39,350	32,384	179,842,186
2051	39,732	32,699	181,585,359
2052	40,118	33,018	183,346,171
2053	40,508	33,339	185,124,803
2054	40,902	33,664	186,921,435
2055	41,300	33,993	188,736,253
2056	41,702	34,324	190,569,442
2057	42,108	34,659	192,421,190
2058	42,518	34,997	194,291,687
2059	42,932	35,339	196,181,124
2060	43,350	35,684	198,089,694

FPL Fuel Price Forecast
September 2023

Year	FGT Firm Gas ($/MMBTU)	Gulfstream Firm Gas ($/MMBTU)	Sabal Trail Firm Gas ($/MMBTU)	Residual Oil ($/MMBTU)	Distillate Oil ($/MMBTU)	Scherer 3 Coal Price ($/MMBTU)
2024	3.81	3.56	3.83	16.21	21.26	3.41
2025	4.30	4.17	4.43	15.52	19.88	3.49
2026	5.06	4.94	5.15	14.62	19.48	3.76
2027	4.97	4.90	4.99	13.94	19.27	3.92
2028	5.37	5.28	5.36	13.52	18.92	3.93
2029	5.54	5.45	5.55	13.60	19.09	-
2030	5.33	5.24	5.34	13.69	19.33	-
2031	5.32	5.24	5.34	13.82	19.58	-
2032	5.38	5.29	5.39	13.97	19.88	-
2033	5.59	5.50	5.59	14.09	20.09	-
2034	5.81	5.72	5.81	14.20	20.26	-
2035	6.10	6.01	6.10	14.42	20.54	-
2036	6.29	6.19	6.28	14.62	20.81	-
2037	6.54	6.45	6.53	14.97	21.22	-
2038	6.82	6.72	6.80	15.36	21.71	-
2039	7.03	6.93	7.01	15.76	22.25	-
2040	7.53	7.43	7.49	16.17	22.80	-
2041	7.91	7.80	7.86	16.60	23.36	-
2042	8.11	8.00	8.06	17.04	23.92	-
2043	8.40	8.29	8.35	17.50	24.50	-
2044	9.01	8.89	8.94	17.71	24.80	-
2045	9.52	9.40	9.44	17.94	25.08	-
2046	9.77	9.65	9.68	18.17	25.41	-
2047	10.22	10.10	10.13	18.40	25.73	-
2048	10.76	10.63	10.65	18.62	26.06	-
2049	11.37	11.23	11.24	18.88	26.40	-
2050	12.30	12.16	12.15	19.15	26.75	-
2051	12.24	12.10	12.10	19.14	26.83	-
2052	12.19	12.05	12.05	19.12	26.91	-
2053	12.14	12.00	12.00	19.11	26.99	-
2054	12.09	11.95	11.95	19.10	27.07	-
2055	12.04	11.90	11.90	19.08	27.15	-
2056	11.99	11.85	11.85	19.07	27.23	-
2057	11.94	11.80	11.80	19.06	27.31	-
2058	11.89	11.75	11.75	19.04	27.39	-
2059	11.84	11.70	11.70	19.03	27.47	-
2060	11.79	11.65	11.65	19.02	27.55	-

Resource Plans - Units Added

Year	No 2025 Solar Plan	2025 Solar Plan
2024	745 MW SolarTogether Extension 894 MW SoBRA	745 MW SolarTogether Extension 894 MW SoBRA
2025	596 MW Solar Together Extension	596 MW Solar Together Extension **894 MW SoBRA**
2026	522 MW Battery NWFL	522 MW Battery NWFL
2027	300 MW Battery	300 MW Battery
2028	300 MW Battery	300 MW Battery
2029	600 MW Battery	300 MW Battery
2030	3x1 Martin CC, (1,991 MW) 300 MW Battery	3x1 Martin CC, (1,991 MW) 300 MW Battery
2031	300 MW Battery	300 MW Battery
2032	300 MW Battery	300 MW Battery
2033	900 MW Battery	300 MW Battery

* MW values shown above for solar projects are nameplate AC. MW values for fossil units are based on summer MW ratings.

CPVRR - Costs and (Benefits)*

Solar Revenue Requirements			**Non-Solar (Avoided) Generation Costs**			**Avoided System Costs**			**PTC Impacts**	
Generation Capital** (Millions)	Fixed O&M + Capital Replacement (Millions)	Transmission Interconnection (Millions)	Generation Capital (Millions)	Fixed O&M + Capital Replacement (Millions)	Transmission Interconnection (Millions)	System Net Fuel (Millions)	Startup + VOM (Millions)	Emission (Millions)	PTC Impacts (Millions)	**Total CPVRR (Millions)**
$1,532	$69	$42	($585)	($82)	($12)	($1,063)	($73)	($121)	($617)	**($911)**

* Negative ( ) indicates savings to FPL customers.
** Based on the total installed cost of the project, $1,600/kW

Yearly PTC Impact for the 2025 Project

Year	2025 Project Generation (MWh)	PTC Forecast* ($/MWh)	Total PTC Impact (M$)
2025	2,001,727	40.18	80.44
2026	2,129,459	41.52	88.42
2027	2,122,866	42.86	90.99
2028	2,121,718	42.86	90.94
2029	2,110,252	44.20	93.28
2030	2,103,945	45.54	95.82
2031	2,097,638	45.54	95.53
2032	2,096,429	46.88	98.29
2033	2,085,024	48.22	100.54
2034	2,078,717	49.28	102.44

* PTC forecast values represent impact to customers after adjusting for taxes.

Avoided Natural Gas

Year	Avoided Natural Gas MMCF
2025	13,202
2026	11,736
2027	13,538
2028	14,167
2029	14,385
2030	14,198
2031	14,106
2032	14,271
2033	14,474
2034	14,169
2035	14,135
2036	14,325
2037	14,349
2038	14,142
2039	14,128
2040	14,238
2041	14,326
2042	14,228
2043	14,626
2044	13,827
2045	14,182
2046	14,696
2047	14,194
2048	13,978
2049	13,955
2050	13,807
2051	13,610
2052	14,086
2053	13,693
2054	14,147
2055	13,973
2056	13,957
2057	13,963
2058	13,481
2059	13,790
2060	13,253
Average =	**13,982**

Avoided Air Emissions

Year	Avoided CO_2 Short Tons	Avoided SO_2 Short Tons	Avoided NO_x Short Tons
2025	808,530	5	94
2026	707,900	(117)	(11)
2027	818,190	(35)	90
2028	891,910	7	173
2029	852,770	(3)	76
2030	844,260	6	75
2031	838,790	6	57
2032	847,380	2	72
2033	858,900	0	89
2034	842,470	6	119
2035	839,890	4	92
2036	851,100	4	82
2037	852,490	3	104
2038	840,330	4	64
2039	839,610	4	79
2040	846,180	4	79
2041	851,250	4	69
2042	845,580	4	64
2043	869,220	4	63
2044	821,530	3	78
2045	842,540	3	62
2046	873,140	4	51
2047	843,050	3	56
2048	830,770	4	60
2049	829,180	4	68
2050	819,760	2	53
2051	808,300	2	69
2052	836,970	4	80
2053	813,860	4	80
2054	840,500	3	39
2055	830,050	3	65
2056	829,050	3	52
2057	829,920	4	37
2058	801,170	4	34
2059	819,520	4	78
2060	787,300	3	61
Average =	**833,427**	**(1)**	**71**