BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 160021-EI
FLORIDA POWER & LIGHT COMPANY
AND SUBSIDIARIES

IN RE: PETITION FOR RATE INCREASE BY
FLORIDA POWER & LIGHT COMPANY
AND SUBSIDIARIES

DIRECT TESTIMONY & EXHIBITS OF:

MANUEL B. MIRANDA

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

FLORIDA POWER & LIGHT COMPANY

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MARCH 15, 2016

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Manuel B. Miranda. 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" or the "Company") as the Senior Vice President of Power Delivery.

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

A. As the Senior Vice President of Power Delivery, I am responsible for the planning, engineering, construction, operation, maintenance and restoration of FPL's transmission and distribution ("T&D") electric grid. This includes the systems, processes, analyses, and standards utilized to ensure that FPL's T&D facilities are safe, reliable, secure, effectively managed and in compliance with regulatory requirements.

Q. Please describe your educational background and professional experience.

A. I have a Bachelor of Science in Mechanical Engineering from the University of Miami and a Master in Business Administration from Nova Southeastern University. I joined FPL in 1982 and have more than 33 years of technical, managerial and commercial experience gained from serving in a variety of positions within Customer Service, Distribution and Transmission. Over the

last 10 years, I have held several vice president positions within Distribution and Transmission, including my current position.

Q. Are you sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- MBM-1 MFRs Co-sponsored by Manuel B. Miranda
- MBM-2 Percentage of FPL Feeders Hardened/Underground
- MBM-3 FPL's FPSC SAIDI 2006-2015
- MBM-4 FPL's FPSC MAIFIe 2006-2015
- MBM-5 Regional SAIDI Benchmarking
- MBM-6 AFS Avoided/Actual Customer Interruptions ("CI")

Q. Are you co-sponsoring any Minimum Filing Requirements ("MFRs") in this case?

A. Yes. Exhibit MBM-1 lists the MFRs that I am co-sponsoring.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to: (1) demonstrate that FPL provides superior T&D reliability; (2) describe the initiatives FPL is implementing to strengthen and modernize its T&D infrastructure; (3) explain the ongoing plan for capital investments associated with the five major drivers that are making FPL's T&D infrastructure stronger, smarter, more secure and more reliable; and (4) demonstrate that FPL's T&D Operations & Maintenance ("O&M") expenses are reasonable.

Q. Please summarize your testimony.

A. FPL's T&D electrical grid is one of the most storm-resilient and reliable in the nation. This has been achieved through the development and implementation of our forward-looking storm-hardening, reliability and grid modernization initiatives, combined with the use of cutting-edge technology and strong employee commitment. With these industry-leading initiatives and our proposed 2016-2018 plans, FPL will further strengthen its infrastructure, improve system reliability and develop a system even more capable of meeting ever-increasing needs and expectations.

FPL's comprehensive reliability program and grid modernization initiatives are producing superior reliability performance for our customers. For example, in 2015, FPL achieved its best-ever T&D System Average Interruption Duration Index ("SAIDI") results on record and, for the tenth consecutive year, FPL's SAIDI was the best among Florida investor-owned electric utilities ("IOUs"). Additionally, FPL's 2014 performance ranked 44% better than the national average, according to the most recent data reflected in PA Consulting's annual reliability benchmarking summary. SAIDI is recognized as the most relevant and best overall reliability metric.

It is well documented that Florida is impacted by hurricanes more than any other state. This was clearly demonstrated when, in 2004 and 2005, FPL's service territory was impacted by seven named storms. With the experience

gained from this onslaught of storms, FPL and the Florida Public Service Commission ("FPSC" or "Commission") recognized that significant changes were required to construct an electrical grid that would be more storm-resilient. As a result, industry-leading initiatives were undertaken to improve storm resiliency, including the implementation of storm preparedness and storm hardening plans, cyclical infrastructure inspections, and vegetation management programs. With the execution of FPL's proposed 2016-2018 storm-hardening plan, 60% of all distribution feeders (the backbone of the distribution system) will be storm hardened or underground. In addition to providing increased storm resilience, FPL's storm preparedness and hardening initiatives also provide our customers with improved day-to-day reliability. For example, day-to-day, storm-hardened feeders perform approximately 40% better than non-hardened feeders.

FPL's initiatives have been recognized by many, including our customers, public officials and others throughout the electric industry. First, and most important, our customers have taken notice of their improved service reliability, as reflected in the significant reduction in customer dissatisfaction - a decrease of over 65% since 2006 - as measured by the substantially reduced number of FPSC-logged service-quality complaints per 10,000 customers. Second, during U.S. Energy Secretary Ernest Moniz's January 2016 tour of FPL's facilities in Miami-Dade County, Dr. Moniz stated, "Modernizing the U.S. electrical grid is essential to reducing carbon emissions, creating

safeguards against attacks on our infrastructure and keeping lights on." He also emphasized that FPL stands out in its innovations to strengthen the grid, when he said, "FPL really is on the cutting edge of addressing a grid for the 21st century and particularly in the area of resilience," and "It's really what we need." Third, in October 2015, FPL was the recipient of three PA Consulting ReliabilityOne™ awards. The three awards, which acknowledge electric utilities for providing customers with the highest levels of reliability in the industry recognized FPL for: (1) outstanding technology and innovation (for the second consecutive year); (2) the best overall system-wide reliability performance (in both outage duration and frequency) for large IOUs in the Southeast Region (also, for the second consecutive year); and (3) being "a consistent top performer in the industry" and for demonstrating "a tremendous commitment to maintaining reliability for their customers from every level of the organization." As a result, FPL received the National Excellence Award, PA Consulting's top annual honor and one of the most prestigious awards in the industry.

FPL remains committed to continuing its effective management of forward-looking investments and expenses necessary to construct, operate, maintain, and improve its T&D electrical grid. These investments and expenses result from: (1) executing FPSC storm-hardening initiatives; (2) customer growth and system expansion; (3) executing our comprehensive T&D reliability/grid modernization initiatives; (4) servicing the electrical grid/other support

activities; and (5) complying with regulatory requirements. Our effective management of costs has helped us provide this excellent service while also delivering outstanding value for our customers.

Today's digital society, economy, national security and daily life are more dependent on reliable electric service than ever before. While FPL's efforts to strengthen, modernize and improve the reliability of the electric grid have produced superior results, a significant amount of work remains to be completed. The demands for safe, reliable and secure electric service are certain to escalate, as evidenced by the U.S. Department of Energy's ("DOE") "Grid Modernization Initiative," issued in March 2015, and its "Grid Modernization Multi-Year Program Plan," issued in November 2015. Reflecting on the state of the nation's electric T&D system generally, the documents recognize that "the grid we have today does not have the attributes necessary to meet the demands of the 21st century and beyond" and the future grid will need to "deliver resilient, reliable, flexible, secure, sustainable, and affordable electricity to consumers." These goals align with those that FPL, with the FPSC's oversight and guidance, has vigorously pursued for more than a decade.

To date, our nation-leading initiatives have positioned us well to achieve these future grid objectives, in addition to providing better service to our customers today. FPL's 2016-2018 plans and initiatives are integral to our ability to

meet the ever-increasing needs and expectations of customers -- today and in the future.

II. OVERVIEW OF POWER DELIVERY

Q. Please provide an overview of the Power Delivery organization at FPL.

A. FPL's Power Delivery business unit is responsible for the planning, engineering, construction, operation, maintenance and restoration of FPL's T&D facilities. It consists of approximately 2,900 employees, 16 distribution management areas, two distribution control centers, seven transmission management areas and two system control centers spread throughout the approximately 28,000 square miles of FPL's service territory.

Q. Please provide an overview of FPL's T&D electric grid.

A. As of year-end 2015, FPL's T&D electric grid consists of nearly 75,000 miles of lines - approximately 68,000 miles of distribution overhead (42,000 miles) and underground (26,000 miles) lines and 6,900 miles of high-voltage transmission lines. There are also approximately 1.2 million distribution poles, 65,000 transmission structures and more than 600 distribution and transmission substations installed throughout FPL's service territory.

Q. Does operating and maintaining an electrical system in Florida present FPL with unique challenges?

A. Yes. As the electric service provider throughout approximately half of Florida, FPL is well-acquainted with Florida's unique geographic and

weather-related challenges, which are unlike any other in the country. For example: (1) Florida is more susceptible to tropical storms, hurricanes, and major hurricanes (Category 3 or higher) than any other state; (2) FPL's service territory is the most storm-susceptible within Florida, as it has approximately 500 miles of coastline (one of the longest of any utility in the U.S.) directly exposed to storms from the Atlantic Ocean and the Gulf of Mexico; (3) because the vast majority of our customers live within 20 miles of the coast, a significant amount of our electric infrastructure is constantly exposed to the corrosive effects of salt spray, and when a storm hits, the highest wind speeds; (4) Florida also experiences more thunderstorms and lightning than any other U.S. region (in fact, in 2015, FPL experienced approximately 395,000 lightning strikes, 15% more lightning strikes than in any previous year over the last decade); and (5) Florida's subtropical climate promotes one of the fastest vegetation growth rates in the nation. However, with FPL's continuous commitment to operational excellence and superior performance, we expect to continue to successfully address these unique challenges.

III. STORM HARDENING THE INFRASTRUCTURE

Q. Why did FPL undertake to strengthen its infrastructure?

A. In 2006, following the significant 2004/2005 storm seasons (when seven hurricanes affected FPL's service territory), FPL began to implement its FPSC-approved initiatives to strengthen its T&D infrastructure.

Q. Please describe the specific actions that FPL has taken to strengthen and harden the T&D infrastructure.

A. Below is a summary and status of the FPSC-approved initiatives to strengthen and harden FPL's T&D infrastructure:

FPSC STORM HARDENING

Distribution – Since 2007, consistent with Rule 25-6.0342, F.A.C., and subsequent FPSC orders (Order Nos. PSC-07-1023-FOF-EI, PSC-11-0082-PAA-EI and PSC-13-0639-PAA-EI), FPL has been executing its approved three-prong distribution storm hardening plan that: (1) increases the strength and storm resilience of distribution critical infrastructure facilities ("CIF") (e.g., feeders serving hospitals and 911 centers) to the National Electrical Safety Code's ("NESC") extreme wind-loading criteria ("EWL"); (2) incrementally hardens, up to and including EWL, community projects (e.g., feeders serving grocery stores and gas stations); and (3) provides for new construction to be built to meet EWL. Additionally, as a result of lessons learned from Hurricane Sandy, in 2014 and 2015 FPL implemented and completed an initiative to better protect 12 more flood-susceptible vaults within the downtown Miami network system. At year-end 2015, over 70% of all CIF and Community Project feeders throughout FPL's system have been hardened.

Transmission – Since 2007, FPL has been implementing its FPSC-approved plan to storm-harden its transmission system. This includes replacing all wood transmission structures (with steel or concrete structures) and all ceramic post insulators on concrete poles (with polymer post insulators). Additionally, in 2013 and 2014 (also as a result of lessons learned from Hurricane Sandy), FPL implemented and completed an initiative to better protect 223 substations located in higher-risk storm surge/flood areas. At year-end 2015, 100% of the ceramic post insulators on concrete poles have been replaced. Additionally, 15,491 wood structures have been replaced, resulting in a transmission structure population that is approximately 85% steel and concrete, as of year-end 2015.

DISTRIBUTION POLE/TRANSMISSION STRUCTURE INSPECTIONS

Distribution - From 2006-2013, FPL initiated and completed its first eight-year inspection cycle, which includes conducting visual, strength and load tests on all distribution poles. Any pole not meeting standards was either reinforced or replaced. To date, FPL has reinforced or replaced approximately 10% of its distribution pole population. In 2016, FPL is in the midst of its second eight-year inspection cycle.

Transmission – FPL currently has approximately 65,000 transmission structures. Since 2007, FPL has executed its approved transmission structure inspection plan, which requires visual ground-level inspections on 100% of these structures annually, bucket truck/climbing inspections on a 6-year

(wood) or 10-year (steel or concrete) cycle and strength and load tests. Any structure not meeting standards is reinforced, remediated or replaced.

VEGETATION MANAGEMENT

In 2007, FPL's approved plan (FPSC Order No. PSC-07-1023-FOF-EI) established three-year and six-year average trim cycles for feeders and laterals, respectively, and mid-cycle feeder trimming (feeders requiring more frequent trimming). From 2007 to 2015, FPL cleared more than 125,000 miles of lines – a distance that is more than five times the earth's circumference.

OVERHEAD-TO-UNDERGROUND CONVERSIONS

In 2007, to reduce storm restoration costs for all customers, FPL began to provide a 25% incentive for applicable government-sponsored overhead-to-underground conversions through its approved Government Adjustment Factor ("GAF") tariff. FPL's approved standard overhead-to-underground conversion tariff also has been modified to provide incentives (up to 25%) for all overhead-to-underground conversion projects. Through 2015, 21 municipalities have taken advantage of these incentives.

Q. What benefits do customers receive from FPL's efforts to strengthen the T&D infrastructure?

A. The storm strengthening/hardening initiatives provide for a more storm-resilient system that is expected to prevent and mitigate storm-related

infrastructure damage and, as a result, reduce storm-related outages, restoration times and restoration costs. Additionally, as previously mentioned, these initiatives also provide significant day-to-day reliability benefits.

Q. Please elaborate on the benefits of these initiatives.

A. Storm Hardening – For distribution, with our approved 2007-2015 targeted storm hardening efforts, we expect that fewer facilities will be damaged, fewer outages will occur, and that overall restoration time and costs will be reduced. This expectation, of course, underlies the entire FPSC-approved storm hardening program. As provided in FPL's previously approved storm hardening plan filings, a 30-year net present value analysis indicates that the net present value restoration cost savings per mile of a hardened feeder could be approximately 45-70% of the cost to harden that same mile of feeder. Additionally, because feeders perform approximately 40% better once they have been hardened, customers also receive day-to-day reliability benefits.

For transmission facilities, our initiatives to replace all wood transmission structures with steel or concrete structures, replace all ceramic post insulators with polymer post insulators and address those substations more prone to storm surge/flooding are expected to produce a more storm resilient transmission system.

Pole Inspections – The FPSC-mandated distribution pole and transmission structure inspections ensure FPL's pole/structure populations remain in

compliance with NESC/FPL construction standards and are more storm-resilient.

Vegetation Management – FPL's approved vegetation management plan provides storm-related and day-to-day benefits (as supported by the analysis provided in Docket No. 060198-EI).

Overhead-to-Underground Conversions – FPL's analysis (which served as the basis for the 25% GAF tariff incentive), indicates that reductions in storm-related damage, outages, overall restoration time, and storm restoration costs are expected when large contiguous areas of distribution overhead facilities are converted to underground. Also, day-to-day, underground facilities perform better than overhead facilities.

Q. What are the 2016-2018 plans for storm strengthening/hardening?

A. Storm Hardening – FPL is filing its 2016-2018 Electric Infrastructure Storm Hardening Plan (the "Plan"), in compliance with Rule 25-6.0342, F.A.C., contemporaneously with its rate case filing. For Distribution, executing the Plan will result in 100% of FPL's feeders serving CIF and Community Projects being hardened by year-end 2016. Completing these feeders in 2016 is consistent with FPL's commitment provided in its approved 2013-2015 storm hardening plan. Targeting CIF and Community Project feeders has been an important first step, providing not only increased storm resilience but also significant day-to-day reliability benefits; however, it is only a first step.

Upon completion of all CIF and Community Project feeders in 2016, FPL's next step is to move forward with completing the task of hardening FPL's system-wide feeder network. Approximately 60% of the feeder network will remain to be hardened and is at a greater risk of incurring storm damage until the hardening is completed. Broadening the scale and scope of feeder hardening to expeditiously address all feeders within FPL's system is appropriate and necessary because it:

- helps to address customers', public officials' and other stakeholders' expectations for increased storm resiliency, fewer outages and prompt service restoration, as evidenced by recent storm events (e.g. Hurricane Sandy in the northeast);
- is aligned with the goals of the U.S. DOE, i.e., developing a more resilient and reliable system to meet future demands; and
- expands the benefits of hardening, including improved day-to-day reliability for all customers throughout the system.

Beginning in 2016, FPL's next proposed phase of hardening addresses the remaining feeders in its system by focusing on: (1) "wind-zone hardening" and (2) "geographic hardening." "Wind zone hardening" targets those feeders with the largest disparity in current strength vs. EWL. "Geographic hardening" targets substations without any hardened feeders. Upon execution of FPL's Plan, at year-end 2018, approximately 800 additional feeders will be strengthened to EWL. While 40% of FPL's feeder system will still need to be

addressed after 2018, a more substantial part of FPL's system will be hardened, expanding the improved storm resiliency and reliability benefits of hardening to more customers. See Exhibit MBM-2 for the cumulative percentage of feeders hardened/underground by year (2006-2018) for CIF and Community Project feeders and all feeders system-wide.

Additionally, to further expand the benefits of hardening throughout its distribution system, in 2018, FPL will initiate its lateral hardening initiative. While hardening feeders (the backbone of the distribution system) has been and remains the highest priority for hardening, as improving their storm resiliency provides the largest initial benefit for customers, the full benefits of a hardened electrical grid cannot be realized without the hardening of laterals. Laterals, which tap off of feeders, are the final step in the distribution primary voltage delivery system. As laterals make up a significant portion of the overhead miles in FPL's distribution system, hardening laterals is necessary to provide the full benefits of a hardened distribution system to all customers.

For transmission, efforts will continue to focus on replacing all remaining wood transmission structures. By year-end 2018, fewer than 5,000 wood structures are expected to be in place, resulting in a transmission structure population that is 93% steel and concrete.

Pole/Structure Inspections – During 2016-2018, FPL will continue with its approved T&D pole inspection plans, annually performing cycle inspections and reinforcing, remediating, or replacing any poles/structures not meeting NESC/FPL standards.

Vegetation Management – During 2016-2018, FPL will continue to execute its FPSC-approved plan for cycle trimming distribution feeders and laterals and mid-cycle feeder trimming, resulting in approximately 15,000 miles of distribution lines being trimmed annually.

Overhead to Underground Conversions – During 2016-2018, FPL will continue to support governmental entities that have either initiated or will pursue overhead-to-underground conversions.

IV. T&D RELIABILITY PROGRAM

Q. Please provide an overview of FPL's T&D reliability program.

A. While FPL's storm hardening initiatives' primary focus is strengthening the T&D infrastructure to reduce storm-related outages/restoration times, FPL's T&D reliability program's primary focus is to reduce day-to-day outages/restoration times. FPL's T&D reliability program, which has produced superior results, includes multiple initiatives that prevent outages and reduce outage durations. For distribution, reliability initiatives are

developed by identifying and analyzing causes of past interruptions. FPL then targets those interruption causes that, if remedied/repaired, will yield the largest benefits. For the transmission system, reliability initiatives focus on facility/system assessments, targeted maintenance, prevention through prediction, utilizing smart grid technology and prevention of recurrence.

Q. Please provide an overview of FPL's T&D reliability initiatives' results.

A. The T&D reliability initiatives employed by FPL continue to produce improved and superior reliability results. For instance, as can be seen on Exhibits MBM-3 and MBM-4, in 2015, FPL achieved best-ever performance results on record for T&D SAIDI and for the T&D Momentary Average Interruption Frequency Event Index ("MAIFIe"). These best-ever SAIDI and MAIFIe results are 23% and 33%, respectively, better than the results achieved in 2006. Additionally, for the tenth consecutive year, FPL's 2015 T&D SAIDI was the best among the Florida IOUs. In fact, the 2015 Florida major IOU T&D FPSC SAIDI average is 50% higher than FPL's 2015 T&D SAIDI (see Exhibit MBM-5).

Exhibit MBM-5 also shows FPL's SAIDI performance (calculated using the Institute of Electrical and Electronics Engineers ("IEEE") 2.5 beta methodology) for 2014 (72.1 minutes) and 2015 (63.7 minutes) which ranked 44% and 50% better, respectively than the national average. This ranking was determined utilizing the most recent data reflected in PA Consulting's annual reliability benchmarking summary. The benchmarking study included 2014

SAIDI results (the vast majority calculated using IEEE's 2.5 beta methodology) from more than 150 IOUs throughout the nation. Achieving these excellent reliability performance results in 2015, despite the extreme level (approximately 395,000) of lightning strikes, demonstrate that our grid modernization and reliability initiatives are effective and beneficial. With FPL's continued commitment and the necessary investments to employ these initiatives, we expect our superior reliability performance will continue to improve.

Q. Please provide specific examples of your key distribution system reliability initiatives.

A. Key distribution system reliability initiatives include:

Vegetation Management – While providing storm benefits, vegetation management continues to also be a key, long-standing reliability initiative that provides day-to-day reliability benefits for customers. Vegetation-related outages continue to be one of the top causes of interruptions, primarily the result of Florida's year-round growth cycle. With annual cycle trimming of feeders and laterals and mid-cycle feeder trimming, FPL has averaged trimming over 15,000 miles annually – the equivalent of trimming a line running around the earth's circumference approximately every 1.7 years. FPL also continues to promote our "Right Tree Right Place" public education program with local governments and customers to educate them on our trimming program, practices, safety issues and proper tree placement.

Grid Modernization/Smart Grid – This program includes several initiatives that have recently been a significant focus for FPL, as we continue to develop a modern, automated and self-healing grid. Included in these initiatives are smart devices, e.g., automated feeder switches ("AFS"), automated lateral switches ("ALS") and fault current indicators ("FCI") that automatically identify and/or isolate problematic line sections and/or clear temporary faults – avoiding and/or mitigating interruptions and reducing restoration times and costs. These devices are providing significant reliability improvement results. For example, as shown in Exhibit MBM-6, AFS devices were responsible for avoiding over 680,000 customer interruptions in 2015 and, in two days in January 2016 (when FPL's service territory was impacted by two significant weather events, including multiple tornados), over 42,000 customer interruptions were avoided. As can be seen on Exhibit MBM-6, the total number of potential customer interruptions without AFS installed on the affected feeders is nearly twice the actual number of customer interruptions. For example, in 2015, there would have been 1,464,974 customer interruptions instead of the actual 784,559, if not for the AFS installed on those feeders. This illustrates that smart grid technology improves reliability for our customers.

Underground Cable – This initiative addresses "direct-buried" feeder and lateral cable failure modes through rehabilitation (by injecting the cable with

silicone, which extends its useful life) or, when rehabilitation is not an option, replacement. These solutions prevent interruptions and improve service.

Targeted Performance Improvement – This includes multiple initiatives that address infrastructure/devices experiencing a higher number of outages and/or momentary interruptions. Examples of these reliability initiatives include priority feeders, submarine cable, momentary outliers and device outliers.

Q. Please provide specific examples of key FPL transmission system reliability initiatives.

A. Key transmission system reliability initiatives include:

Facility/System Assessments – Under this initiative, transmission line and substation assessments are conducted utilizing equipment diagnostics and both on-site and remote system surveillance in order to evaluate and determine the health of facilities and equipment. Holistic station and equipment assessments, including oil sampling/testing, equipment/protective system testing, thermal imaging and climbing inspections are performed, which provide information used to prevent or predict equipment/facility failures. Also, certain system surveillance is accomplished through equipment performance monitoring and diagnostics, using remote monitoring tools and analysis programs.

Targeted Maintenance – Information obtained during condition assessments is evaluated using predictive models. A plan is then developed to replace or conduct targeted maintenance on major equipment and facilities. Targeted

maintenance extends the useful life of equipment and minimizes costs by deferring the need for substantial investment in new equipment and facilities.

Prevention through Prediction – By combining remaining useful life determination and risk assessment, a plan is developed to replace major transmission equipment/facilities in a more predictive manner. When such replacements are made, technological advances and design improvements are incorporated to reduce future interruptions and maximize asset utilization.

Prevention of Recurrence – Through the use of the Event Response Process (where each outage event is recorded, classified and analyzed), countermeasures are developed to prevent the recurrence of similar events. For example, if it is determined that a relay operated improperly, the root cause is determined, and countermeasures are implemented to similar devices throughout the system to prevent recurrence.

Grid Modernization/Smart Grid – FPL continues to incorporate intelligent technology within substation systems to better anticipate and respond to system disturbances. For example, substation transformer relay scheme upgrades utilize microprocessor–based systems to gather power system data, assess equipment operating conditions and enable the use of auto-restoration and self-healing systems. This improves reliability, increases situational awareness of grid operations and optimizes asset utilization.

Vegetation Management – Transmission facilities must also be protected from Florida's abundant and fast-growing vegetation. To ensure system stability and compliance with North American Electric Reliability Corporation ("NERC") reliability standards, 100% of FPL's transmission right-of-way is inspected twice a year, with necessary trimming identified and completed.

Q. How has FPL used information technology to improve system reliability?

A. Recently, FPL has focused its efforts to significantly increase the utilization of information technology and automation to modernize the grid so that it is smarter, self-healing and more reliable. This focus was initiated in 2009, with FPL's smart meter deployment, and has continued with the installation of other smart grid devices, e.g., AFS, ALS and FCI. In addition to improving reliability, a more modernized grid also reduces costs, as restoration costs are reduced due to fewer outages. Below, I describe several other key information technology initiatives:

System Control Center – FPL's System Control Center ("SCC") is a state-of-the-art facility that enables more efficient operation and coordination of FPL's transmission and substation network. This includes ensuring full compliance with all applicable standards, e.g., NERC and Critical Infrastructure Protection ("CIP") cyber security standards/requirements. The quality and availability of energy management system tools and status information on FPL's transmission and substation system allow for improved and continuous monitoring and control by system operators.

Power Delivery Diagnostic Center ("PDDC") – The PDDC acts as a "nerve center" for FPL's smart grid. In real time, the PDDC monitors critical operating parameters of T&D equipment/devices; gathers and analyzes data from advanced sensors, monitors, switches, smart meters, etc.; and utilizes FPL-developed analyses, applications, algorithms and other tools to predict likely equipment failures so that remediation can be efficiently planned and completed before a failure/outage occurs. The PDDC also provides analyses of system events and coordination and support to the SCC, Distribution Dispatch offices and T&D operations. For instance, when an outage event occurs, the PDDC immediately begins to collect and analyze pertinent data, while the restoration crew is still in route to the event site. Equipped with this information upon arrival, the restoration crew is able to perform the restoration more quickly and effectively.

Restoration Spatial View ("RSV") – RSV, an FPL-developed application that runs on iPads, iPhones and laptops, provides real time situational awareness (from multiple systems) and acts as a "one-stop shop" for restoration crews. It provides real-time outage information, weather radar/alerts, electrical network information, customer energy consumption, voltage, crew location and more – all layered on a map view. A significant customer benefit includes the restoration confirmation feature, which allows restoration crews to confirm the power status of all smart meters affected by an outage before leaving the area. This has resulted in fewer repeat customer calls/restoration crew visits.

V. GROWTH/SYSTEM EXPANSION

Q. Do new service accounts, new major construction projects and increased electrical demand in an area affect FPL's T&D planning and operations?

A. Yes. All of the above can significantly impact FPL's resources, costs and reliability. From 2014-2018, FPL expects to add nearly 300,000 new service accounts. Accommodating new customers, whether it is a typical residential customer or a major project (e.g., the 83-story Panorama Tower, currently under construction in downtown Miami, which will become the tallest building in Florida and tallest residential building on the eastern seaboard south of New York), requires the installation of new infrastructure. Depending on the new customer's load, additional infrastructure required could be as simple as installing a single service to a home or business or could require constructing new feeders and/or transmission lines and substations. Similarly, the cumulative effect of increases in load due to new customers and/or increased customer usage/demand in certain areas also can require upgrades to existing infrastructure and/or the installation of new facilities.

New major projects throughout FPL's service territory also can have a significant impact on resources and costs (e.g., new feeders, new transmission lines and even new T&D substations). For example, in addition to the Miami Panorama Tower mentioned earlier, several other major projects currently

under construction or expected to be under construction during 2016-2018 include:

- the Brickell City Center, the single largest project currently underway in downtown Miami with multiple towers and over five million square feet of office, residential, hotel, retail, and entertainment space (with ultimately 34,000 kVA of connected load, requiring four new feeders and seven new vaults);
- the Hillsborough Technology Center in Deerfield Beach, a one million square feet business park comprised of industrial, office and hotel space;
- Babcock Ranch, a 17,000 acre planned community under development in southwest Florida, with nearly 18,000 households and five million square feet of light industry, retail, offices and civic space; and
- the expansion of Port Canaveral, which will establish the port as a cargo destination and increase port usage with several new terminals.

VI. EMERGENCY PREPAREDNESS/RESPONSE

Q. Does FPL have plans/processes in place to respond to emergency events?

A. Yes. NextEra Energy's/FPL's Corporate Emergency Management Plan ("CEMP") provides a framework by which FPL can respond effectively to all

types of threats and hazards. The CEMP applies to all threats and incidents including: severe weather, cybersecurity, grid or supply disruptions, physical security, floods, fires, chemical spills, pandemics, civil unrest, or any other hazards that threaten FPL's systems, employees, or contractors.

Q. Does FPL conduct training and exercises to ensure the organization is ready to respond to potential threats or incidents?

A. Yes. FPL's comprehensive and multifaceted emergency response training occurs throughout the year to ensure that employees are ready and prepared to respond to an emergency event. Additionally, for certain potential significant threats or events, simulated events/response exercises are annually conducted to enhance training and preparedness, e.g., company-wide storm dry run, capacity shortfall, and cyber security simulations/exercises.

Q. Does FPL's emergency preparedness and training extend beyond FPL?

A. Yes. In addition to interactions between FPL and other agencies that typically take place as a result of emergency preparation drills, other external entities (e.g., the FPSC, Florida Office of Public Counsel, U.S. DOE, the Edison Electric Institute ("EEI"), and Pacific Gas & Electric Company) routinely attend FPL's annual storm dry run event to observe and learn about our restoration processes.

Also, as part of FPL's continued leadership in emergency preparedness and response, FPL serves as a member of the National Response Executive Committee ("NREC"). The NREC is an industry group, coordinated through

EEI, that is responsible for overseeing nationwide mutual assistance and resource sharing during events that are larger than can be accommodated through the industry regional mutual assistance processes.

In the area of cyber security, FPL performs annual drills to ensure readiness of the organization and participates in industry forums (e.g., Electricity Subsector Coordinating Council and NERC activities) to ensure lessons learned from industry are applied.

Q. Please provide other examples of Power Delivery's efforts to ensure emergency preparedness.

A. For storms, in addition to providing significant employee training, other planning and preparations include securing necessary foreign crew resources, storm staging sites, logistics (e.g., lodging), equipment and inventory and having communication capabilities and processes ready. Having these plans and processes in place prior to each storm season allows FPL to execute its effective restoration plan as soon as it is safely possible.

VII. REGULATORY COMPLIANCE

Q. Are the operation and maintenance of FPL's T&D systems significantly impacted by mandated compliance with regulations?

A. Yes. As a regulated electric utility, the T&D systems' operation and facilities must comply with a variety of policies, standards, orders and the requirements

of federal, regional, state and local regulatory commissions and agencies. In addition to FPSC rules and requirements, these include the requirements of Federal Energy Regulatory Commission ("FERC"), NERC, the U.S. Environmental Protection Agency ("EPA"), U.S. Department of Homeland Security, Occupational Safety and Health Administration, Florida Department of Environmental Protection ("FDEP"), and cities and counties. Of course, compliance with newly mandated requirements can incrementally increase costs for new and existing assets and require implementation of new and/or enhanced processes and related training.

Q. Please provide examples of rules, regulations and requirements that can have a significant impact on FPL's T&D operations, processes and costs.

A. Under the direction of FERC, NERC has developed and issued more than 100 reliability standards, containing in excess of 1,600 requirements and sub-requirements that govern the operation and maintenance of FPL's bulk electric system. Additionally, new NERC CIP standards, addressing cyber and physical security, have been mandated to protect utilities' most critical transmission assets from malicious cyber and physical attacks.

FPL is also subject to a wide range of environmental laws and regulations (e.g., U.S. EPA, FDEP, the Florida Fish and Wildlife Conservation Commission) to protect our natural resources. These laws and regulations require FPL to incorporate environmental protection/stewardship into the design, construction, operation and maintenance of its T&D facilities.

VIII. IMPROVING COMMUNICATIONS WITH CUSTOMERS

Q. What measures have been implemented to improve customer communications?

A. FPL continually strives to improve the service we provide our customers. In addition to improving the reliability of electric service, this means increasing overall customer satisfaction with initiatives such as improving how we communicate with our customers and providing customers with better information. By providing easier access to better information, customers are better situated to make more informed decisions. Several examples of recent initiatives deployed to improve customers' overall service and satisfaction include the implementation of the Customer Preference Center on FPL's website (www.FPL.com) and the establishment of our Major Projects and Construction Services organization.

Q. Please provide additional information for these initiatives.

A. Customer Preference Center – This is a recently launched application on FPL's website that enables customers to choose their preferences among options for receiving automated FPL communications. This includes what communications they wish to receive (e.g., all, none or certain communications for outage alerts, planned outages, scheduled tree trimming in the area, hardening projects), how they wish to receive the communications (e.g., email, phone, text messages) and when they receive such communications (e.g., any time during the day or a specific time of day).

Additional improvements, currently expected to be implemented before year end 2016, include certain website redesigns that will make it easier for customers to report outages from their desktop computer or mobile device and, for large builders/developers, to initiate electrical construction needs or obtain the status of their electrical construction projects.

Major Projects and Construction Services – This is an organization within FPL that was recently established to specifically foster improved partnerships with large builders/developers in order to better understand their needs, better coordinate their projects and ensure FPL's project commitments are met.

Q. Have these initiatives been recognized by customers?

A. Yes. As noted earlier, the cumulative success of FPL's initiatives to improve our service and how we communicate with our customers have contributed to reducing FPSC service-related logged complaints by 65% over the last decade.

IX. FPL'S T&D COSTS

Q. Please provide an overview of FPL's actual/forecasted T&D costs.

A. Historically, FPL's capital expenditures and O&M expenses result from five major cost drivers: (1) FPSC storm hardening; (2) growth; (3) reliability/grid modernization; (4) grid servicing/support; and (5) complying with other regulatory agency requirements. For capital expenditures, the major drivers

have been FPSC storm hardening, growth and reliability/grid modernization. For O&M expenses, the major drivers have been grid servicing/support, other regulatory commitments and reliability/grid modernization. For 2014-2017 and 2018, these same major cost categories are expected to continue to drive FPL's T&D capital expenditures and O&M expenses.

A. T&D CAPITAL EXPENDITURES

Q. What are FPL's T&D actual/projected capital expenditures for 2014-2017 and 2018?

A. Total FPL T&D capital expenditures for 2014-2017 and 2018 are $6.47 billion and $1.95 billion, respectively. As discussed earlier, the major drivers for capital expenditures historically and the projected periods are the same.

Q. Please provide 2014-2017 and 2018 capital expenditures by major driver.

A. Below are the 2014-2018 capital expenditures for each major driver:

($Billions)

Major Driver	2014-2017	2018	2014-2018	%
FPSC Hardening	$1.67	$0.87	$2.54	30%
Growth	$1.72	$0.57	$2.29	27%
Reliability/Grid Modernization	$1.93	$0.28	$2.21	26%
Grid Servicing/Support	$0.82	$0.17	$0.99	12%
Other Regulatory Commitments	$0.33	$0.06	$0.39	5%
Total	$6.47	$1.95	$8.42	100%

Earlier in my testimony, I discussed each of these drivers, their specific components and their importance in maintaining a resilient, reliable and compliant T&D system.

Q. Please provide additional details for FPSC Hardening.

A. For 2014-2017 and 2018, the vast majority of the FPSC Hardening category, $1.37 billion and $0.79 billion, respectively, result from FPL's efforts to further storm-harden FPL's T&D grid (e.g., feeder hardening). Distribution pole/transmission structure inspections, $0.30 billion for 2014-2017 and $0.08 billion for 2018, account for the remaining costs in this category.

Q. Please provide additional details for Growth.

A. The capital expenditures associated with the installation of new service lines to serve the approximately 300,000 new service accounts being added during 2014-2018 are $0.55 billion for 2014-2017 and $0.18 billion for 2018. Capital expenditures for expansion and upgrades of both T&D facilities/infrastructure to ensure the safe and reliable operation of the grid for 2014-2017 and 2018 are $1.13 billion and $0.38 billion, respectively. Remaining capital expenditures in this cost category are associated with new large major construction projects and new streetlight systems.

Q. Please provide additional details for Reliability/Grid Modernization.

A. Capital expenditures associated with the distribution reliability/grid modernization initiatives for 2014-2017 and 2018 are $1.54 billion and $0.20 billion, respectively. For transmission, reliability capital expenditures for 2014-2017 are $0.39 billion and for 2018, $0.08 billion, respectively.

Q. Please provide additional details for distribution-related Reliability/Grid Modernization capital expenditures.

A. The installation of distribution smart grid devices account for $0.64 billion for 2014-2017 and $0.07 billion for 2018. The capital expenditures associated with the underground inspection, repair and rehabilitation of underground equipment and the priority feeder reliability initiatives are $0.65 billion for 2014-2017 and $0.07 billion for 2018. The remaining components for this category, accounting for $0.25 billion for 2014-2017 and $0.06 for 2018, are associated with other various distribution reliability initiatives (e.g., hand-hole and pad-mount transformer inspections, submarine cable repairs/replacement, momentary and other device outliers).

Q. Please provide additional details for transmission-related Reliability/Grid Modernization capital expenditures.

A. Capital expenditures associated with transmission facility/system assessments, targeted maintenance, and the prevention through prediction/reoccurrence initiatives account for $0.29 billion for 2014-2017 and $0.07 billion for 2018. The remaining transmission reliability-related capital expenditures are associated with modernizing the transmission grid (e.g., upgrading/digitizing substation transformer relays and installing substation fault information capabilities). Capital expenditures for these initiatives are $0.10 billion for 2014-2017 and $.01 billion for 2018.

Q. Please provide details for Grid Servicing/Support.

A. Capital expenditures associated with the three major components of this key driver category include: (1) restoring customers' service, $0.40 billion for 2014-2017 and $0.11 billion for 2018; (2) operating/maintaining FPL's vehicle fleet, $0.18 billion for 2014-2017 and $0.03 for 2018; and (3) other various support activities (e.g., purchase of tools, computer systems/software, maintenance/upgrades of office facilities, and responding to customer requests). For 2014-2017, these costs are $0.24 billion and for 2018, $0.03 billion).

Q. Please provide details for Other Regulatory Commitments.

A. This remaining major driver category, accounting for approximately $0.33 billion and $0.06 billion in 2014-2017 and 2018, respectively, includes costs associated with various mandated laws, rules and regulations that have been previously discussed.

B. T&D O&M EXPENSES

Q. What are FPL's T&D O&M expenses for the 2017 Test Year and 2018 Subsequent Year?

A. Total T&D O&M expenses for the 2017 Test Year and 2018 Subsequent Year are $372.4 million and $396.3 million, respectively.

Q. How do T&D O&M expenses compare to typical benchmarks utilized by the FPSC for evaluating the reasonableness of O&M expenses?

A. FPL's total T&D 2017 Test Year and 2018 Subsequent Year O&M expenses compare favorably to the benchmarks typically used by the Commission to evaluate the reasonableness of O&M expenses (e.g., MFR C-8, Details of Changes in Expenses and MFR C-41, O&M Benchmark Variance by Function). For example, FPL's 2017 Test Year and 2018 Subsequent Year T&D O&M expenses are significantly below the FPSC O&M benchmark, approximately $34 million and $26 million, respectively.

Q. Is there other information available that indicates FPL's T&D O&M expenses are reasonable?

A. Yes. As contained in FPL witness Reed's testimony and Exhibit JJR-4, benchmarking of FPL's T&D O&M expenses demonstrates that FPL has "shown excellence in controlling its Distribution O&M expenses" and "performed well in controlling Transmission O&M expenses."

Q. Does this conclude your direct testimony?

A. Yes.

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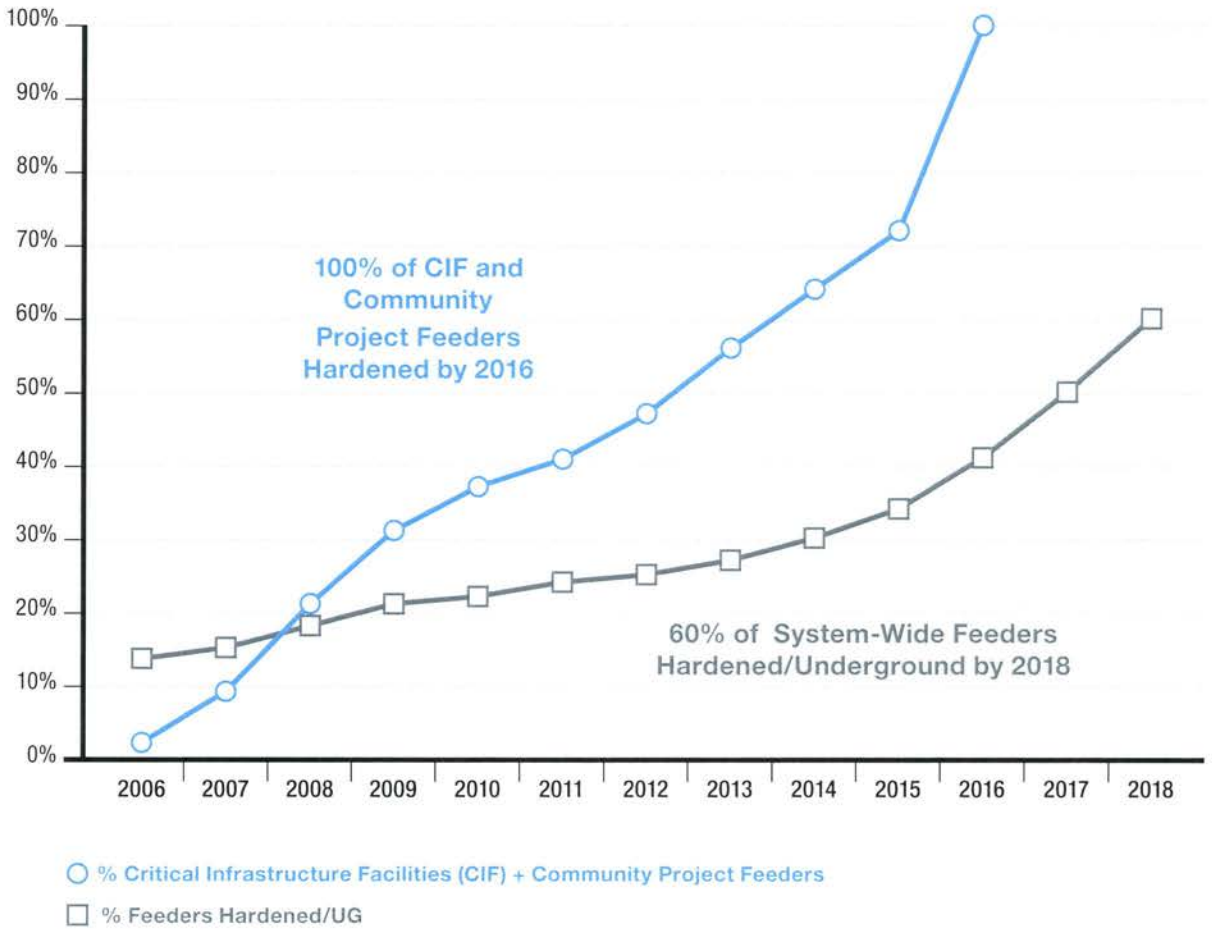
MFRs CO-SPONSORED BY
MANUEL B. MIRANDA

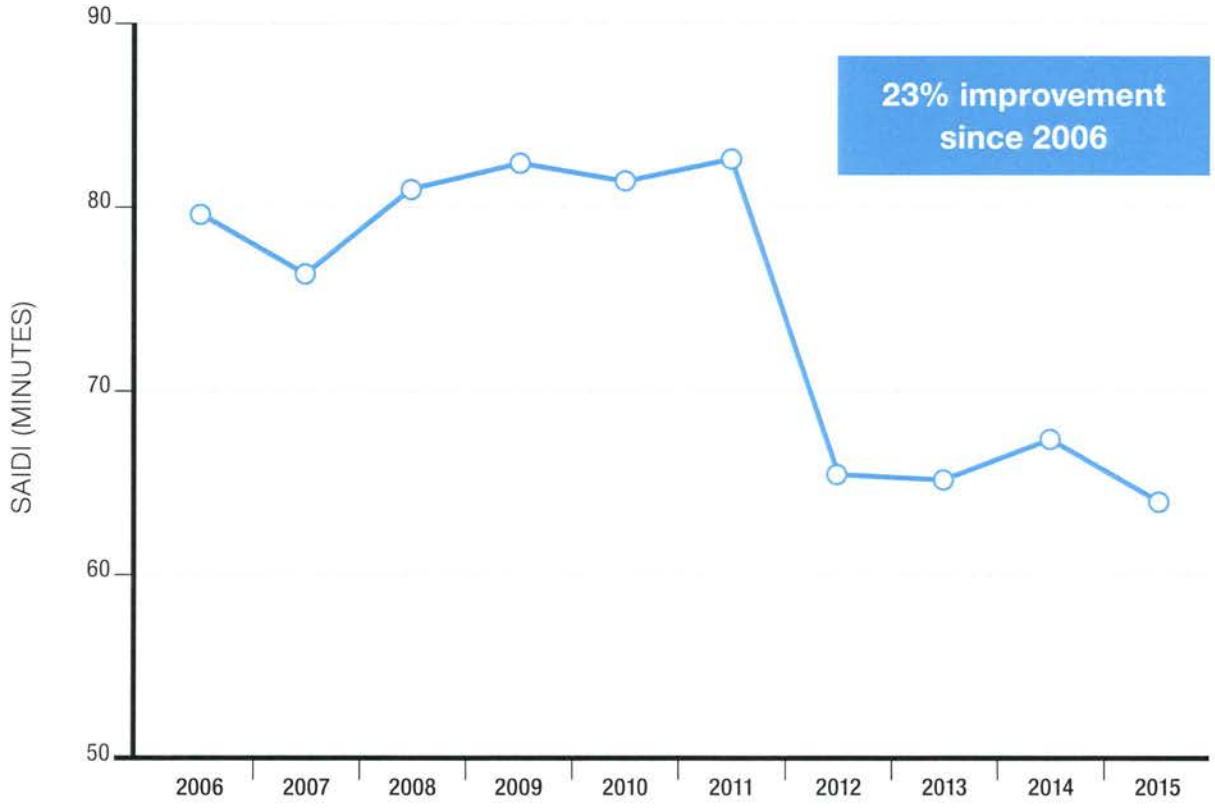
SOLE SPONSOR:		
N/A	N/A	N/A
CO-SPONSOR:		
B-12	Prior	PRODUCTION PLANT ADDITIONS
B-13	Test	CONSTRUCTION WORK IN PROGRESS
B-15	Prior Test	PROPERTY HELD FOR FUTURE USE – 13 MONTH AVERAGE
B-24	Prior Test	LEASING ARRANGEMENTS
C-8	Prior Test Subsequent	DETAIL OF CHANGES IN EXPENSES
C-15	Historic Test Subsequent	INDUSTRY ASSOCIATION DUES
C-34	Historic	STATISTICAL INFORMATION
E-7	Test	DEVELOPMENT OF SERVICE CHARGES
E-14	Test	PROPOSED TARIFF SHEETS and SUPPORT FOR CHARGES

Percentage of FPL Feeders Hardened/Underground



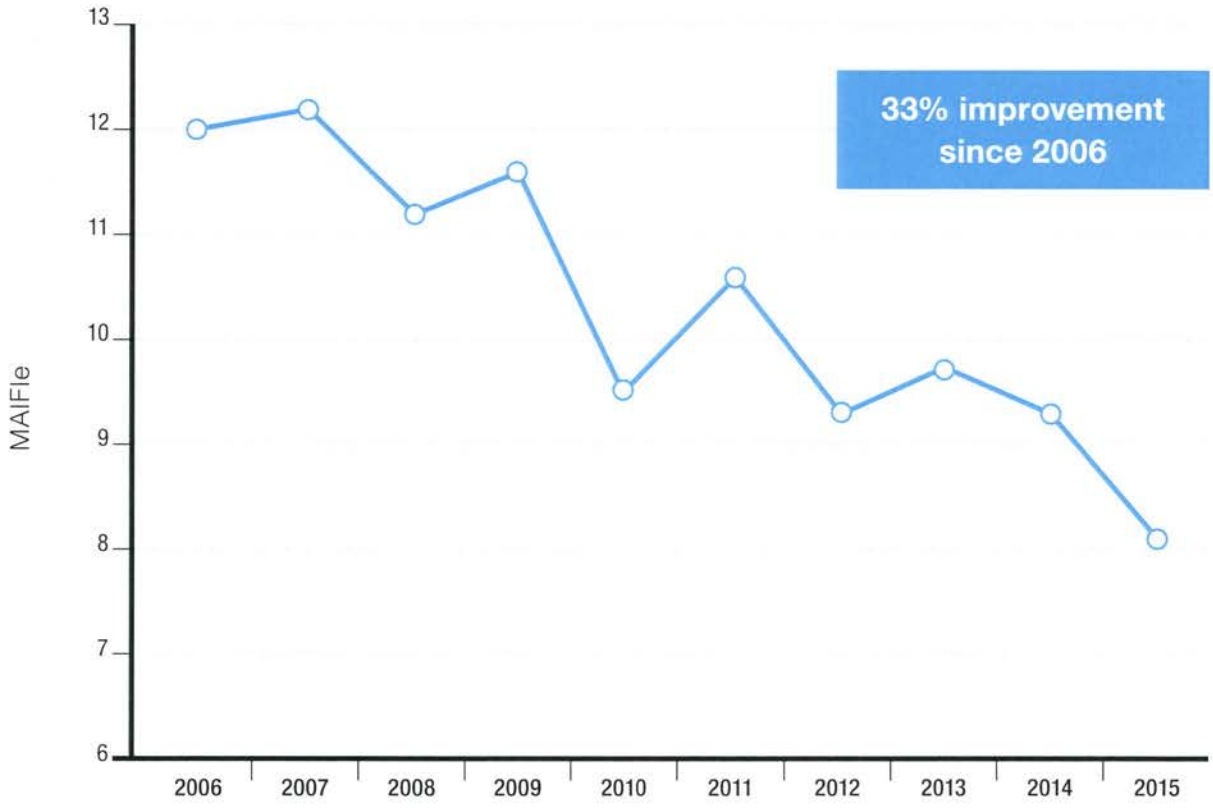
While much of FPL's T&D infrastructure has been hardened – additional work remains

FPL's FPSC SAIDI 2006-2015



FPL has significantly improved overall reliability for our customers

FPL's FPSC MAIFIe 2006-2015



FPL's customers are experiencing significantly fewer momentary outages

FPL's SAIDI Best in Southeast Region and Among the Best in the Nation

Regional SAIDI Benchmarking			
MAJOR SOUTHEASTERN INVESTOR-OWNED UTILITIES	2014 IEEE SAIDI[1]	2015 FPSC SAIDI[2]	
FPL	72.1	61.4	
South Carolina Electric & Gas	97.3		
Tampa Electric	99.5	94.0	
Duke Energy Florida	101.2	87.9	
Georgia Power	102.8		
Dominion Virginia Power	113.0		
Duke Energy Progress (NC)	124.0		
Duke Energy Carolinas (SC)	126.0		
Duke Energy Progress (SC)	128.0		
Duke Energy Carolinas (NC)	138.0		
Entergy Mississippi	184.4		
Appalachian Power	334.2		
Gulf Power	N/A	94.9	
Alabama Power	N/A		
Mississippi Power	N/A		
Southeast Regional Average (excludes FPL)	140.8		
National Average[3]	128.4		
FPL Better Than National Average	**44%**		
Florida IOU Average (excludes FPL)		92.3	
Florida IOU Average Higher Than FPL		**50%**	
FPL 2015 SAIDI - IEEE 2.5 Beta Methodology			63.7
National Average[3]			128.4
FPL Better Than National Average			**50%**

[1] Data source is PA Consulting. Companies with NA did not report results based on IEEE 2.5 beta methodology or use not confirmed.

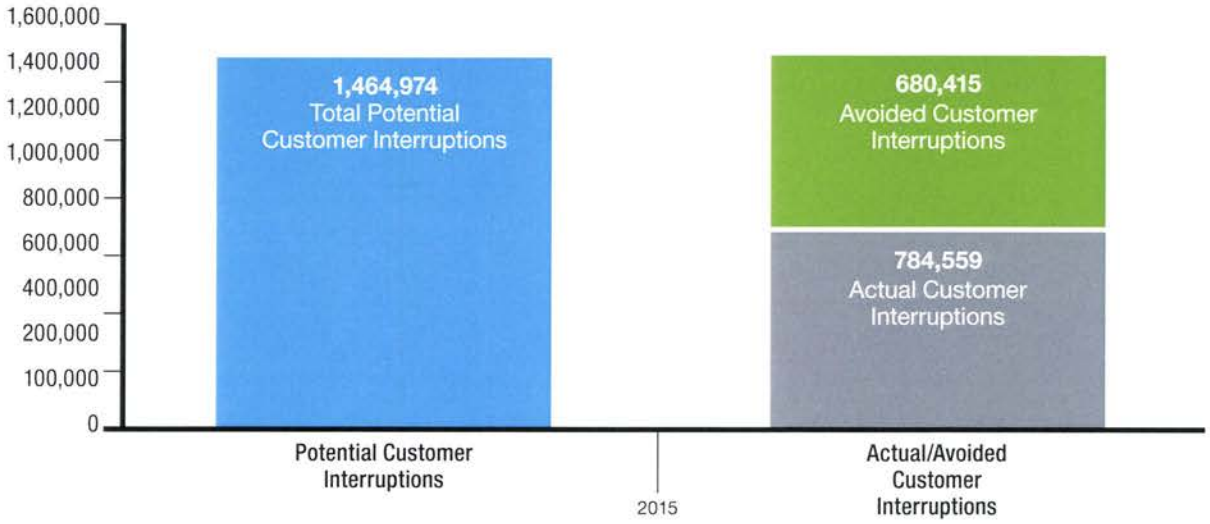
[2] Based on reliability data reported to the FPSC. Only Florida utilities report data to FPSC.

[3] Based on PA Consulting's most recent reliability benchmarking analysis (2014 results), which included over 150 investor-owned electric utilities, with the vast majority utilizing IEEE 2.5 beta methodology.

AFS Devices Are Significantly Reducing Customer Interruptions

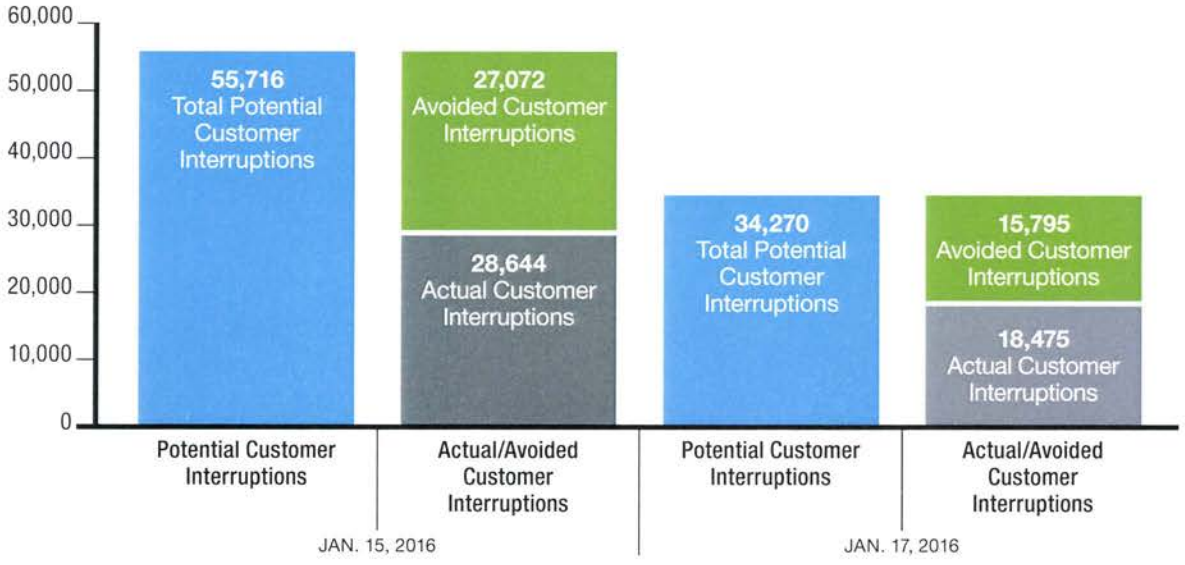
AFS Avoided/Actual Customer Interruptions

With AFS - Avoided > 680,000 customer interruptions in 2015



With AFS - Avoided > 42,000 customer interruptions in Jan. 2016

Two January Weather Events



With AFS, FPL avoided more than 680,000 customer interruptions in 2015 and 42,000 customer interruptions in January 2016