SMART GRID® & ENERGY FORUM/14ª edição

FÓRUM LATINO-AMERICANO DE SMART GRID

29 e 30 de novembro de 2022

Centro de Convenções Frei Caneca
São Paulo - SP - Brasil

Resilient and Smart Grid Against Extreme Weather

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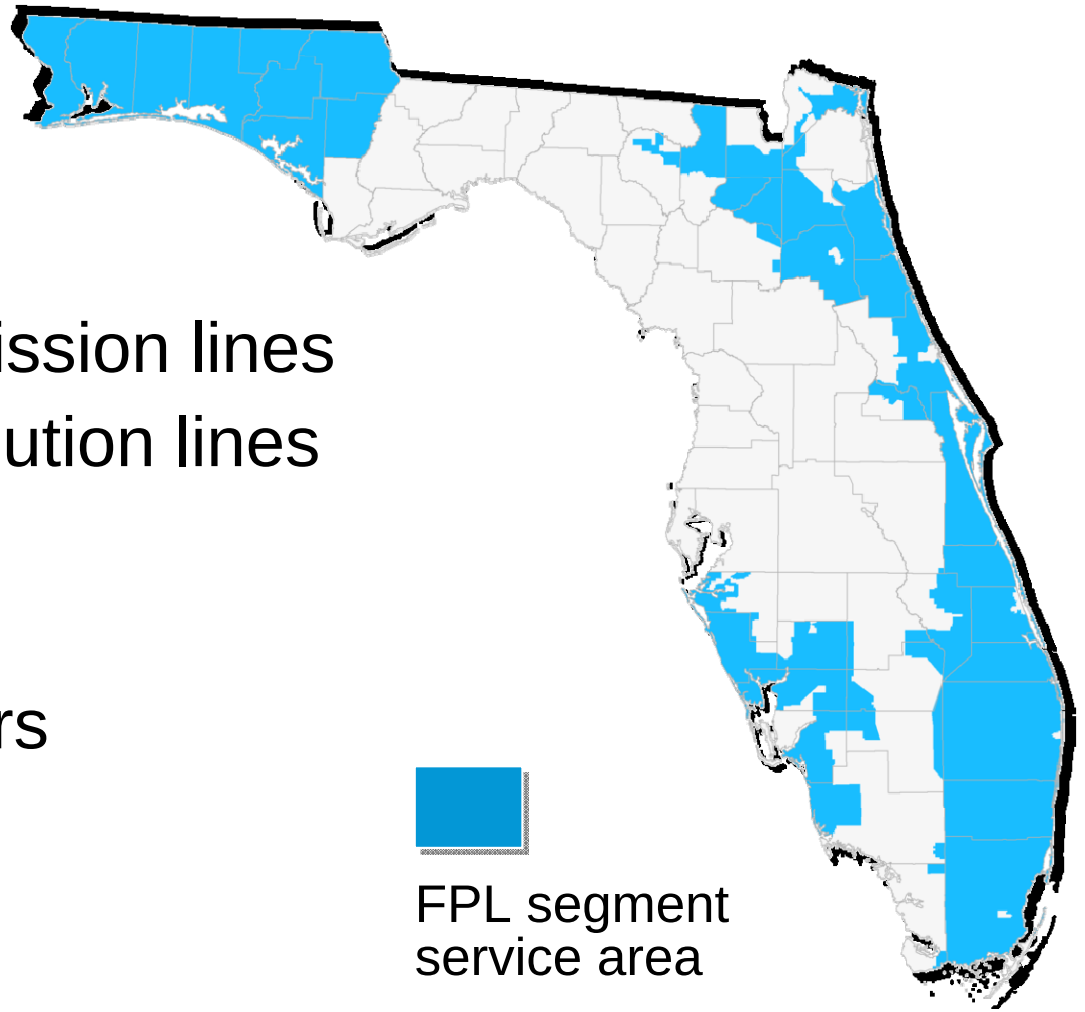
President, MG Spoor Consulting
Retired, VP Power Delivery – NextEra Energy/Florida Power & Light

NEXTera ENERGY

- World's No. 1 producer of renewable energy from the wind and sun
- No. 1 on Fortune's "Most Admired Companies" list in electric and gas utilities industry for 14 of last 15 years
- Named one of World's Most Ethical Companies 14 times by Ethisphere Institute
- Florida-based with operations or development projects in 49 states

FPL serves 5.8 million customers accounts or more than 12 million people across Florida



9,048 miles of transmission lines

76,587 miles of distribution lines

809 substations

1.4 million poles

1.1 million transformers

35,550 square miles

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Achieving Resiliency
Through Smart Grid Initiatives

Before
the Storm

During
the Storm

After
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Resiliency Efforts **Before the Storm** | **Storm Secure Program (2006-Present)**

- Hardening
- Pole Inspections
- Vegetation Management
- Underground Conversions

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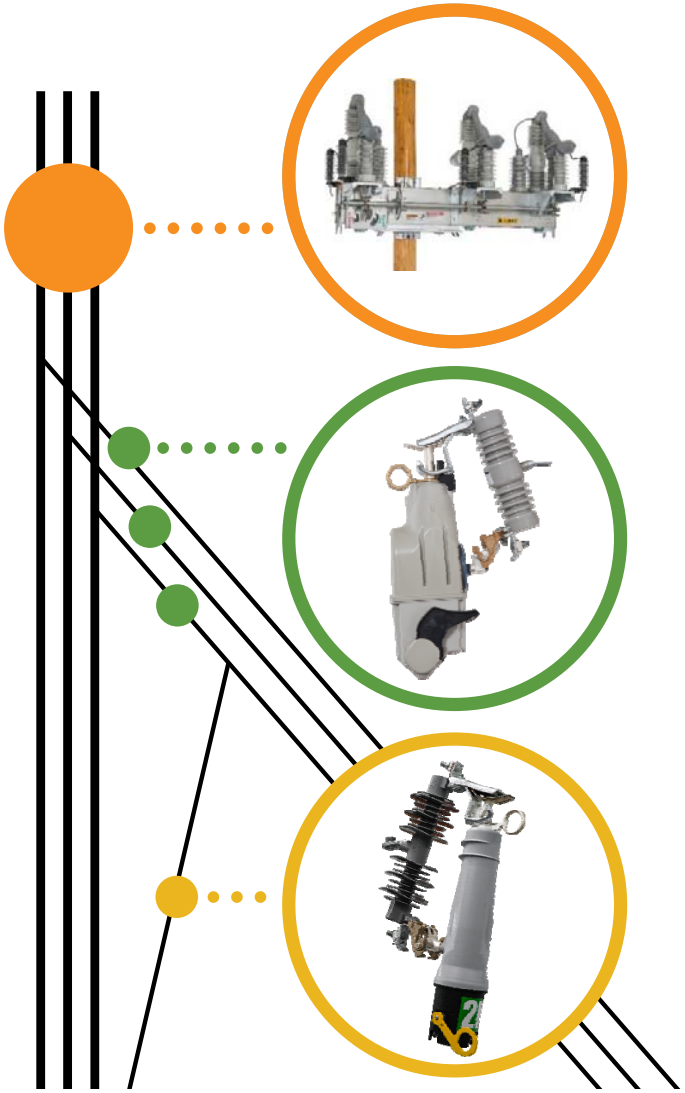
Resiliency Efforts **Before the Storm**

FPL Deployed S&C Technology in Volume



Feeder: 7,000 Installed

S&C IntelliRupter® PulseCloser ® Fault Interrupter

(Automated Feeder Switch)

Lateral: 95,000 Installed

S&C TripSaver® II Cutout-Mounted Recloser

(Automated Lateral Switch)

Grid-Edge: 30,000+ Installed

S&C VacuFuse® II Self-Resetting Interrupter

(Automated Transformer Switch)

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Resiliency Efforts **Before the Storm** | **2006-Present**

Distribution

2006

13% Feeders Underground

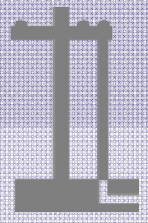
39% Distribution Systems Underground

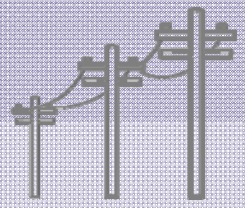
0 Customers Converted from Overhead to Underground

0% Feeders Hardened

0% Storm Secure Underground Projects Complete

0% Poles Inspected





2022

14% Feeders Underground

44% Distribution Systems Underground

63,500 Customers Converted from Overhead to Underground

50% Feeders Hardened

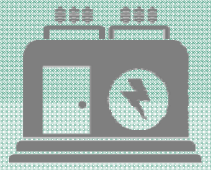
1% Storm Secure Underground Projects Complete

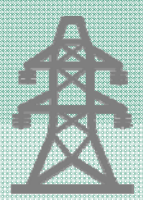
100% Poles Inspected

Transmission

0 Substations with Real-Time Flood Monitors

58% Concrete or Steel Structures



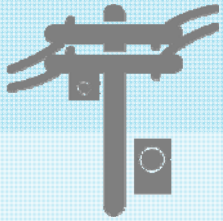


232 Substations with Real-Time Flood Monitors

99% Concrete or Steel Structures

Smart Grid

257 Intelligent Devices Installed



183,000 Intelligent Devices Installed

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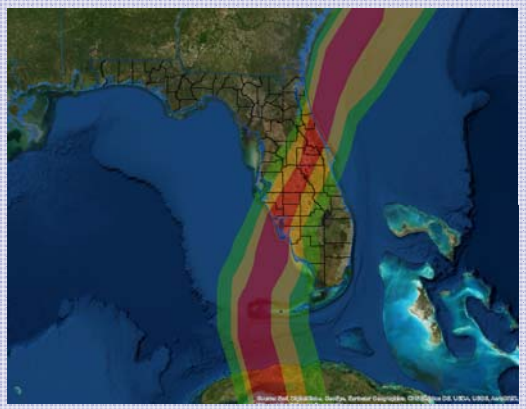
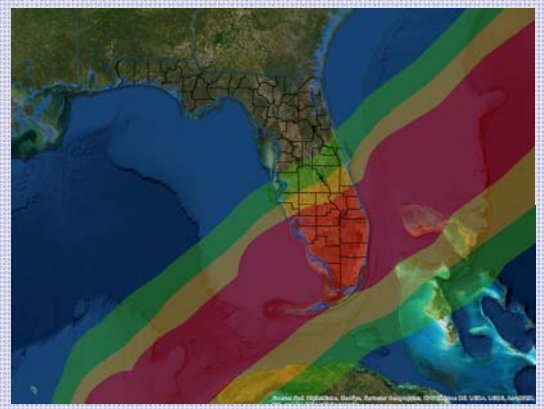
Enhance System Performance **During Storms** | **Storm Comparison**

Pre-Resiliency

Charley 2004 – 1.9*

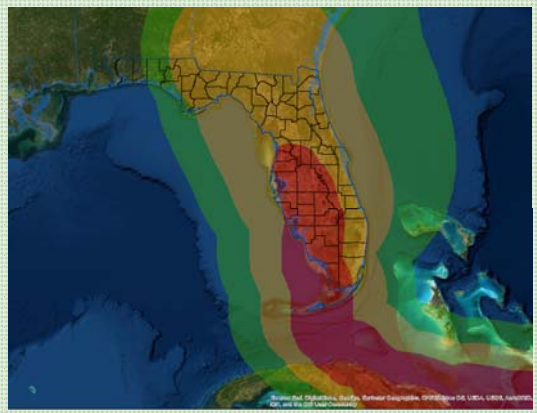


Wilma 2005 – 2.8*

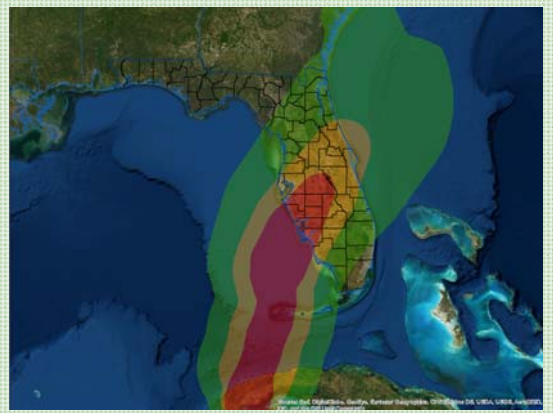


Post-Resiliency

Irma 2017 – 4.3*



Ian 2022 – 6.0*



Hurricane wind speed (74+ mph)

Gale force wind speed (58-73 mph)

Tropical storm wind speed (39-57 mph)

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**Cyclone Damage Potential Index*

Enhance System Performance **During Storms** | **Hurricane Ian - 2022, 6.0**

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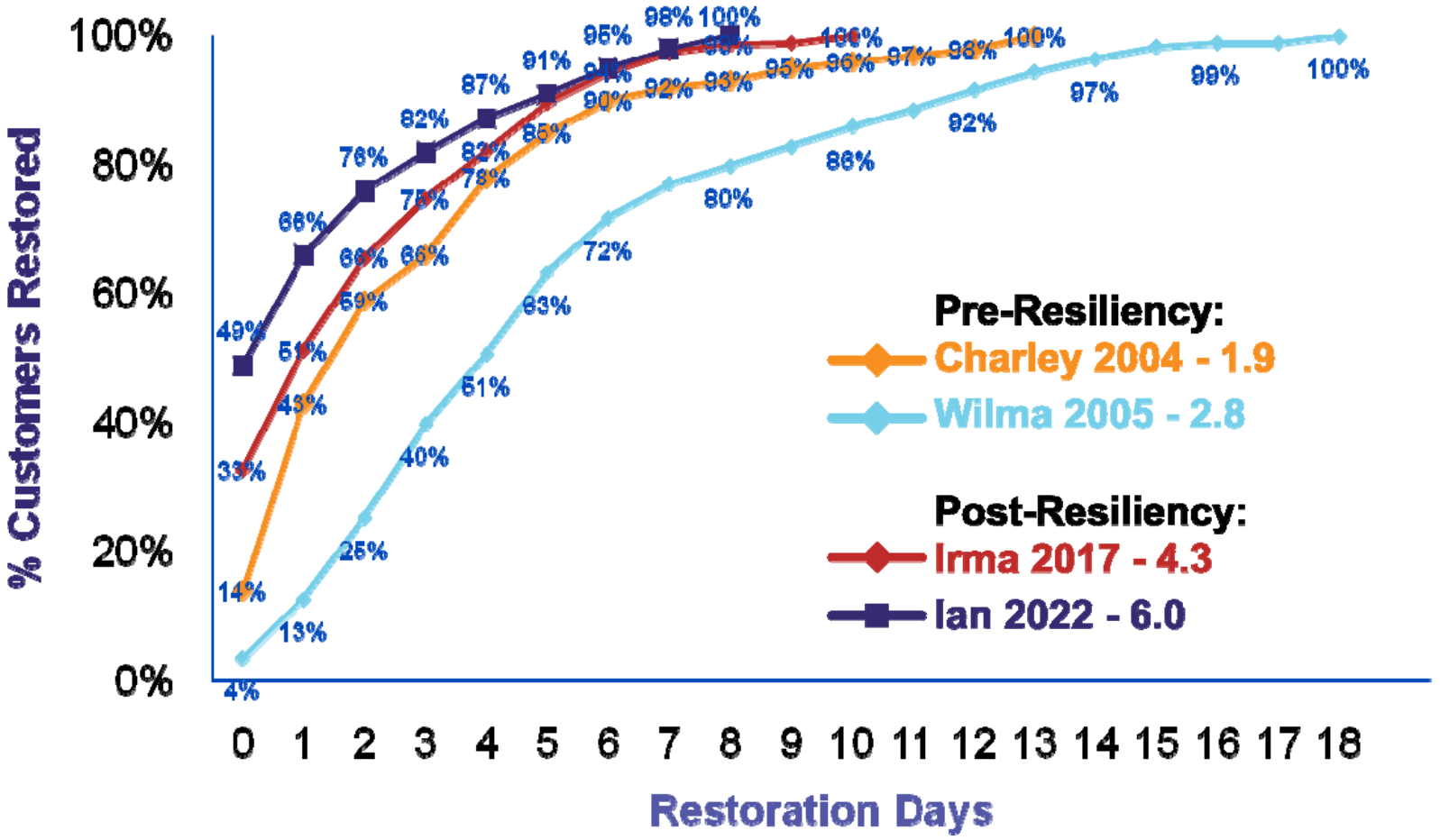
Enhance System Performance **During Storms** | **Hurricane Ian Restoration**



Hurricane Ian:

66%
Customers Restored After 1 Day

100%
After 8 Days

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Enhance System Performance **During Storms** | **Storm Comparison Results**

Hurricane Ian Restoration Performance

	Charley	Wilma	Irma	Ian
Average Days out per Customer	3.5	5.4	2.1	1.5
Days to Restore	13	18	10	8
50% of Customer Restored	3 Day	5 Days	1 Day	1 Day
75% of Customer Restored	5 Days	8 Days	3 Days	2 Days
95% of Customer Restored	10 Days	15 Days	7 Days	6 Days
Distribution Poles Damaged	6900	12,400	4700	3200(1)
Transmission Structures Failed	75	100	5	0
Smart Grid Customer Interruptions Avoided	0	0	546,000	404,000
Days to Energize all Substations	2 Days	5 Days	1 Day	1 Day(2)

FPL's investments in storm hardening are making a significant difference for customers

(1) Based on preliminary data
(2) 1 flooded station took 4 days to restore (fed one industrial customer)

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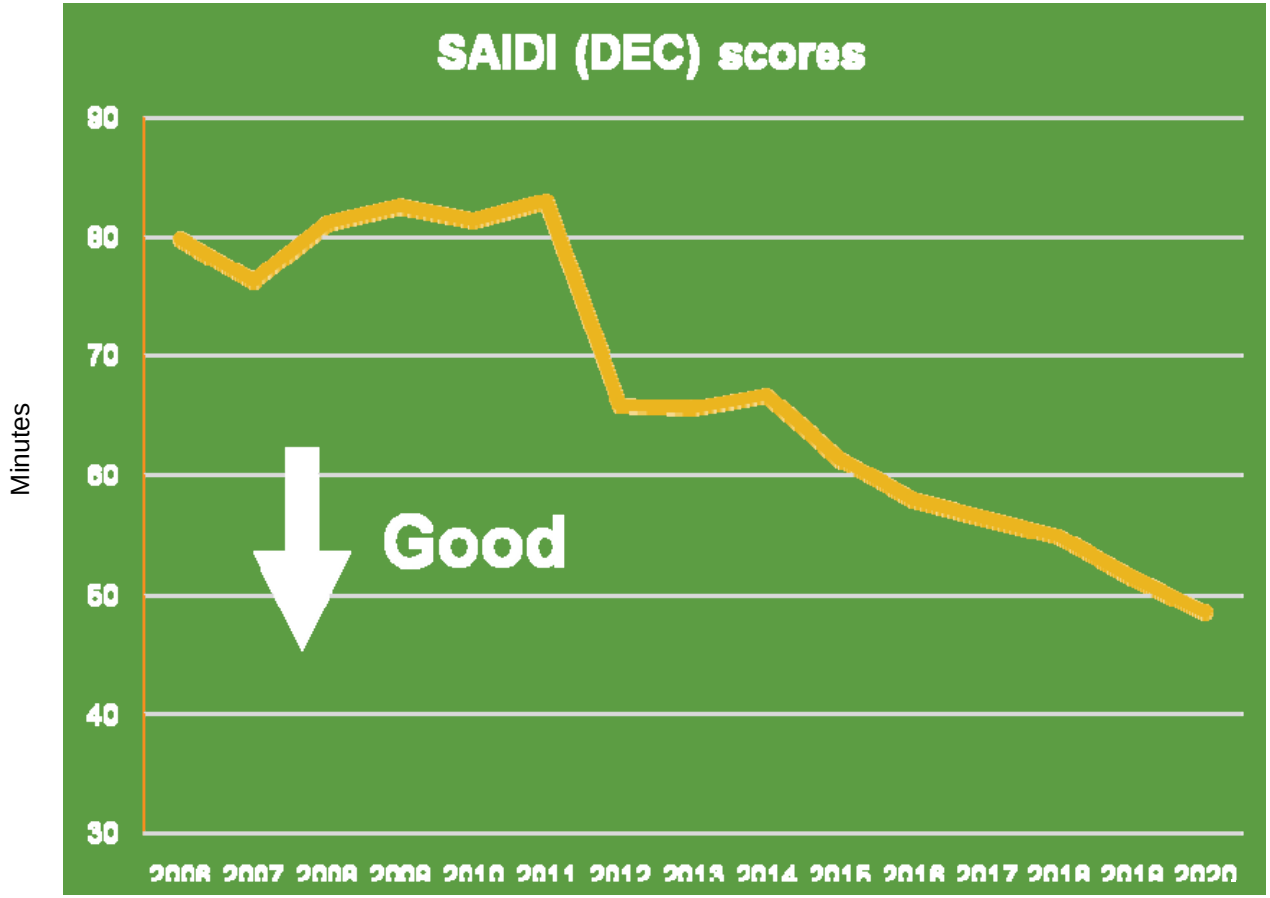
Realize Benefits **After the Storm** | **Advance Daily Reliability**



SAIDI, or Systemwide Average Interruption Duration Index, measures the average time a customer experiences an outage in a year

Investments Have Improved Blue Sky Reliability

40%

Since 2006

FPL was the Most Reliable Investor-Owned Utility in Florida in 2021*

**Based on SAIDI scores submitted to the Florida Public Service Commission*

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Realize Benefits **After the Storm | Customer Benefits**

S&C IntelliRupter fault interrupters saved **4.2 million** interruptions within first 6 years

S&C TripSaver II reclosers saved **8,500** interruptions within first 4 years

71% drop in momentary outages and **93% drop** in complaints in 11-year period

Customer power rates remain **30% below** the national average

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Achieving Resiliency
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Before the Storm

16-year journey (on-going) to strengthen system

During the Storm

Ian was the strongest storm, yet had the best restoration results

After the Storm

40% blue sky day improvements to SAIDI (DEC)

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