ST PETE
CHAMBER of COMMERCE

RESILIENCE PLANNING: BEFORE THE STORM

Tuesday, June 3, 2025
11:30 AM - 3:30 PM
SkyBeach Resort

Presented By:
DUKE ENERGY®

The Resilient Enterprise:

Fundamentals of Resilience Management

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Resilience for Enterprises

Resilience for enterprises is:

The ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions.

Resilience includes the ability to mitigate, recover from, and “bounce forward” from:

- Accidents,
- Economic disruptions, or
- Man-made or naturally occurring threats or events.

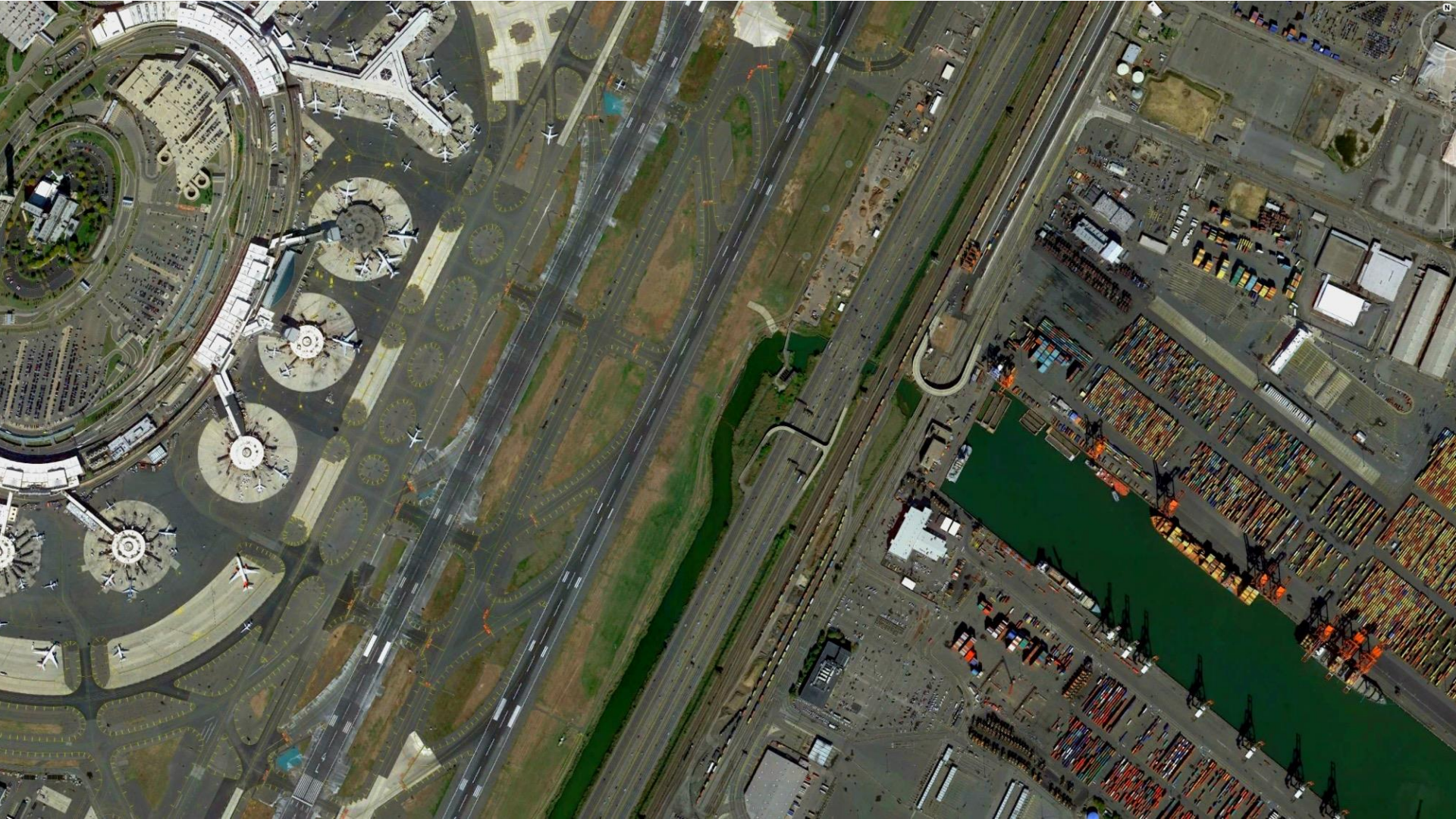
Why are Enterprise Integrated Resilience Management Solutions needed?

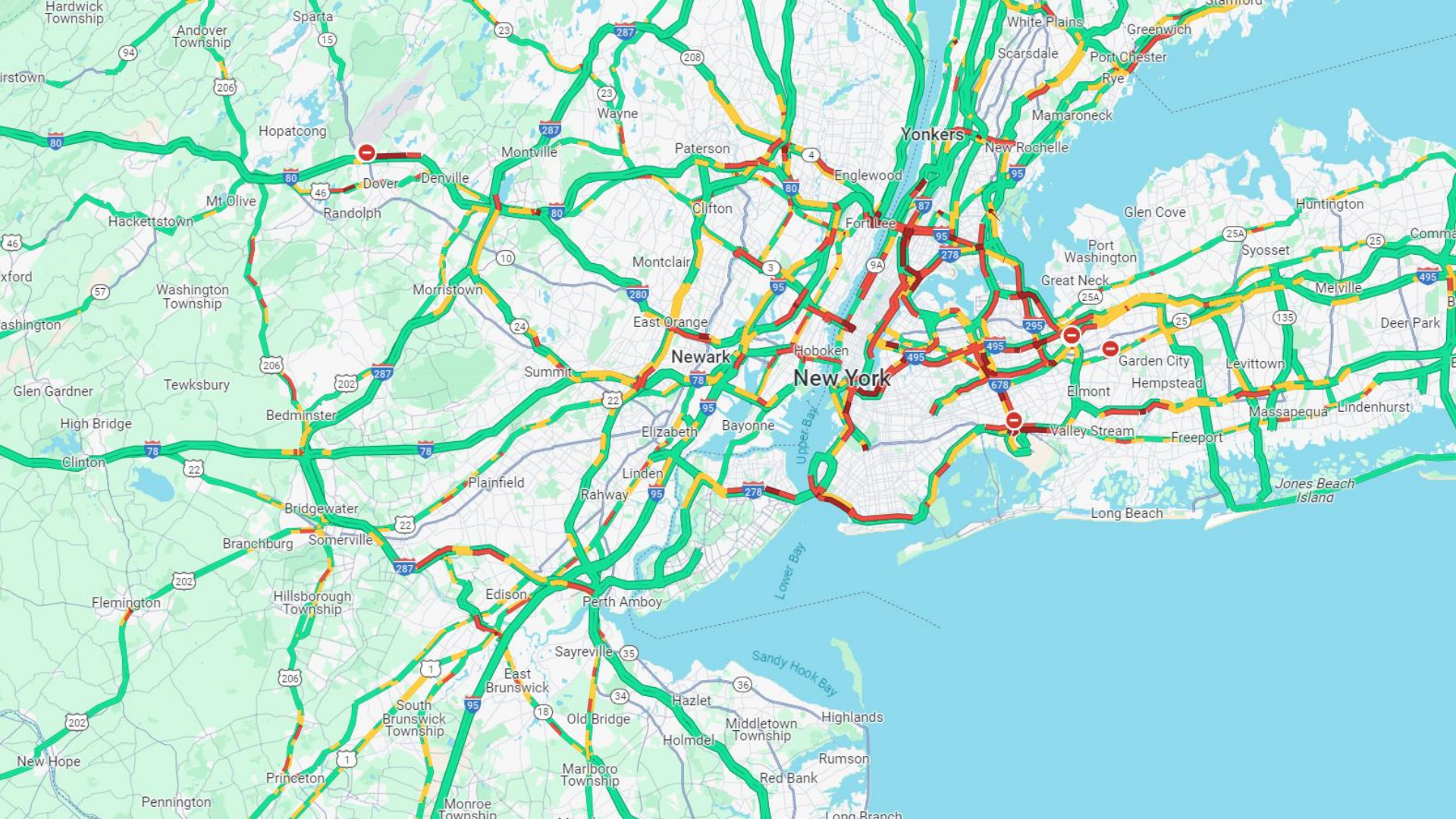
- Operational disruption due to change and turbulence is a constant

Stuff Happens

- Disruption has increasing impact due to interconnectivity and interdependence

- Resilient Enterprises are more valuable to customers, suppliers, employees, and investors




Hardwick Township
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Mt. Olive
Hackettstown
Washington Township
Morristown
Montville
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Paterson
Clifton
Montclair
East Orange
Newark
Hoboken
New York
Englewood
Fort Lee
Yonkers
New Rochelle
Mamaroneck
White Plains
Greenwich
Scarsdale
Port Chester
Rye
Glen Cove
Port Washington
Great Neck
Syosset
Huntington
Melville
Deer Park
Garden City
Hempstead
Elmont
Valley Stream
Levittown
Massapequa
Lindenhurst
Freeport
Long Beach
Jones Beach Island
Lower Bay
Upper Bay
Sandy Hook Bay
Tewksbury
Glen Gardner
High Bridge
Clinton
Bedminster
Bridgewater
Branchburg
Somerville
Flemington
Hillsborough Township
Summit
Plainfield
Elizabeth
Bayonne
Linden
Rahway
Edison
Perth Amboy
Sayreville
East Brunswick
South Brunswick Township
Old Bridge
Hazlet
Middletown Township
Holmdel
Highlands
Rumson
Red Bank
Marlboro Township
Princeton
New Hope
Pennington
Monroe Township


Internet-of-Things (IoT):
30 billion connected devices by 2020
Why Resilience?
A hyper-connected world translates into a greater risk of cascading failures
Urban Areas
Shipping Routes
Global Roads
Air Networks

The Enterprise Resilience Imperative

- Enterprise disruption is continuous, often concurrent, and often unpredictable in nature due to external interdependencies.
- Disruptive event impact is high and increasing due to more ever more complex internal and external interdependence and interconnectivity.

Strategy + Execution + Resilience = ENTERPRISE VALUE

Resilience Drives Enterprise & Community Value

For Enterprises

- Customers value your continued availability increasing your market share.
- Suppliers value your continued patronage during disruptions giving you service priority.
- Employees value continued employment creating loyalty and increasing retention.
- Investors value continuous operations enhancing your financial flexibility.

For Communities

- Businesses/Employers value communities with available labor, local customer base, reliable infrastructure, and supportive public services.
- Citizens value communities with available jobs, affordable housing, reliable infrastructure, adequate public services, strong civil/social life and resources, and consistently high quality of life.

Four Key insights on Enterprise Resilience

1. Natural and human caused disruption is certain, ongoing, and can create both damage and opportunity.
2. Enterprise value and success requires the right strategy, well executed, and the resilience to keep doing it ever more effectively while adapting to change.
3. Every enterprise operates with both internal and external ecosystems of interdependent functions, systems, and processes, people, materials, and physical infrastructure.
4. Enterprise, community, and personal resilience are highly integrated and interdependent. No enterprise exists in isolation.

Four Key insights on Enterprise Resilience

Natural and human caused disruption is certain, ongoing, and can create both damage and opportunity.

Disruptions can be:

- Natural or man-made
- Physical or economic
- Fast or slow moving
- Internal or external cause
- Internal or external impact
- Damaging or opportunity creating

…but more than likely combinations of the above.

Four Key insights on Enterprise Resilience

Enterprise value and success requires the right strategy, well executed, and the resilience to keep doing it ever more effectively while adapting to change.

- The best strategy expertly executed but without resilience built in will not withstand inevitable disruption as well as they might.

- Enterprises that build resilience into their strategies and operations are viewed as more reliable partners, employers, suppliers, and customers. They are more attractive to their customers and communities. They are better able to continuously achieve their objectives and are therefore more highly valued by investors and sponsors.

Four Key insights on Enterprise Resilience

Every enterprise operates with both internal and external ecosystems of interdependent functions, systems, and processes, people, materials, and physical infrastructure.

- Even small enterprises are complex systems with multiple concurrent internal and external interdependencies. This often leads to cascading impacts from any significant disruption anywhere in the system.

- Imagination combined with careful disruption risk assessment can identify highest risk scenarios and corresponding opportunities for resilience enhancement.

Four Key insights on Enterprise Resilience

Enterprise, community, and personal resilience are highly integrated and interdependent. No enterprise exists in isolation.

- Economic, social, personal and physical infrastructure health and operations of both the enterprise and the communities which host them are all highly related and co-dependent. The enterprise cannot be resilient unless the community is as well. And vice versa.

- The enterprise depends on the host community for healthy qualified employees, public and private services and resources including healthcare, public safety, food services, etc., and physical infrastructure including energy, transportation, water and waste management, housing, and telecommunications.

- Therefore the resilient enterprise invests expertise and resources to support community resilience. In turn resilient communities invest in public services and infrastructure to support the enterprises which operate within them.

Resilience Planning & Mitigation Approach

1. Assess Risk to Functional Capacity of ALL Supply Chains
2. Identify Opportunities to Re-Design Supply Chains
3. Prioritize – Perfect Resilience is VERY expensive
4. Fund
5. Execute Re-Design
6. Monitor for Disruption

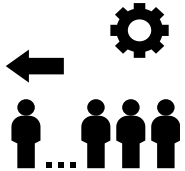
Resilience Planning & Mitigation Approach

Identify risks and opportunities utilizing a Resilience perspective in all operational planning and design.

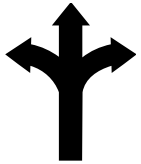
Focus on impact to functional capacity versus cause of disruption to critical supply chains:

Materials	**Capital**	**Food**
Supplies	**Customers**	**Energy**
Facilities	**Partners**	**Water Management**
Labor	**Distribution**	**Healthcare**
Leadership	**Waste Mgt**	**Security/Safety**

Resilience Solution Themes



Redundancy



Flexibility

Agility

Simplicity

Quality/Strength

Resilience Enhancers that Work Together

- Resilience Education & Perspective
- Redundancy
- Quality/Robustness
- Recoverability
- Flexibility
  - Up/down scalability
  - Substitutability
- Disruption Scenario (Disaster) Planning & Training

Disruption Event Management & Recovery

- Create and maintain an **Operations Continuity (Disaster Management) Plan** focused on:
  - Safety
  - Functional capacity continuity/recovery
  - Flexible response
  - Specific accountabilities

- Hold regular training on multiple event scenarios

- Execute OCP as necessary

Disaster Plan Structure

Part One

Organize by Most Likely Causes – E.g, Fire, Storm, Business Downturn, Bomb Threat, Civil Unrest, Pandemic, etc. plus Generic.

- Identify Immediate Safety & Property Protection Responses
- Identify Response Team Management, Response, and Recovery Procedures
- Identify Potentially Impacted Supply Chains

Part Two

Comprehensive Matrix of Potential Disruption Causes to All Potentially Impacted Supply Chains

Tab for Each Supply Chain - Identify Actions and Contacts to Mitigate Impact on Supply Chain

Build Back Better

- Conduct formal and comprehensive post event debriefs
- Identify wins, challenges, and opportunities
- Design enhanced:
  - Continuity procedures
  - Operational procedures,
  - Monitoring procedures
  - Partner opportunities,
  - Facility improvements,
  - Supply chain sources, etc.

Exercise

For YOUR Enterprise:

1. Choose one potential cause of disruption.
2. Choose 2-3 supply chains from the list likely to be impacted by those causes.
3. Identify 2-3 potential strategies to mitigate disruption to those supply chains.
4. Prioritize those strategies.
5. Report out to group.

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BUILDING A **SMARTER** ENERGY FUTURE®

POWER UP
Achieve | Improve | Strengthen | Deliver

Resilience in Action

Case Study Panel Discussion

Grid Investments Strengthen System and Reduce Storm Impacts in St. Pete

Storm Protection Plan: Replacing wood and non-wood poles, towers, and other system upgrades

Vegetation Management: Inspecting and trimming trees around thousands of miles of power lines annually

New Technology: Self-healing systems

DUKE ENERGY®

BUILDING A SMARTER ENERGY FUTURE®

Preventing and reducing outages

In 2024, Grid technology saved 81 million minutes of outages in St. Pete

Reducing hazards near power lines

Completed Grid Improvements in St. Pete

Bayboro GIS – Completed 2022

- Supports overall reliability in downtown St. Petersburg
- Serves USF, airport, All Children's, Tropicana, Mahaffey and other significant large customer needs
- Brick exterior design fits aesthetics of community

Kenwood – Completed early 2023

- New equipment to provide better reliability
- Specially designed poles to retain existing aesthetic
- Worked closely with property owners and city to minimize vegetation removal impacts

System Hardening and New Technology Results in 2024 (DEF)

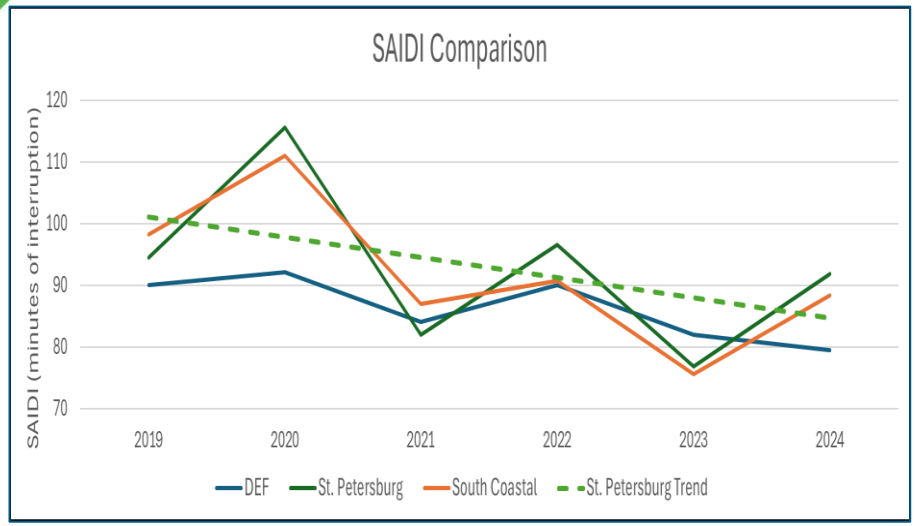
	Total Outages	Outages Auto Restored*	Saved Customer Total Outage Time
Hurricane Debby	350,000	62,000	12.5 million minutes
Hurricane Helene	800,000	127,000	113 million minutes
Hurricane Milton	1,000,000	190,740	200 million minutes

*Automatically restored by self-healing technology

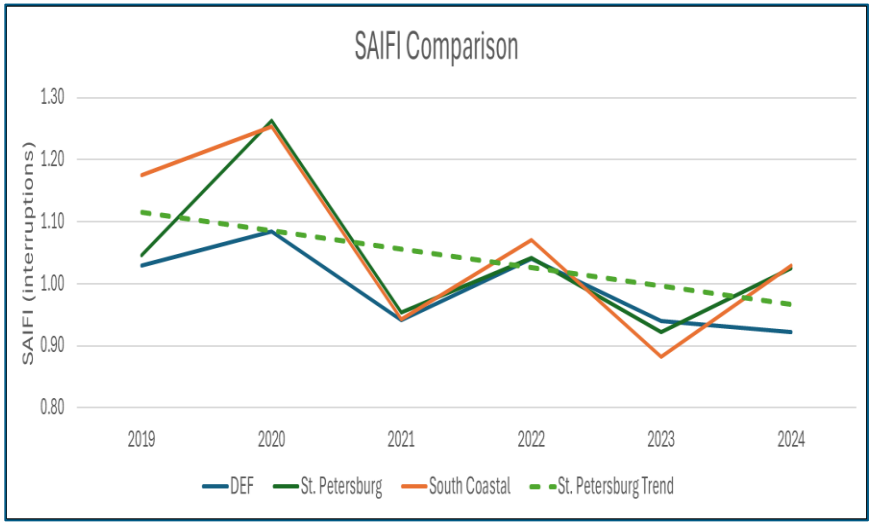
DUKE ENERGY®

BUILDING A SMARTER ENERGY FUTURE®

Grid Improvements: Fewer Outages, Less Down Time



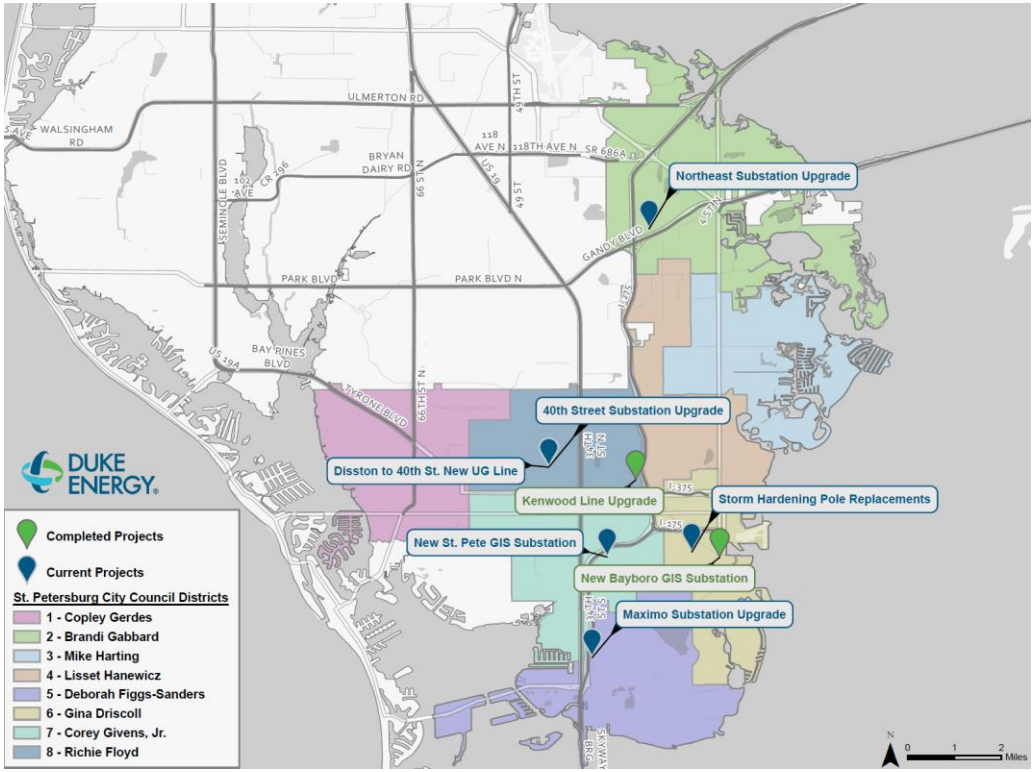
Outage Duration Reduction



Outage Frequency Reduction

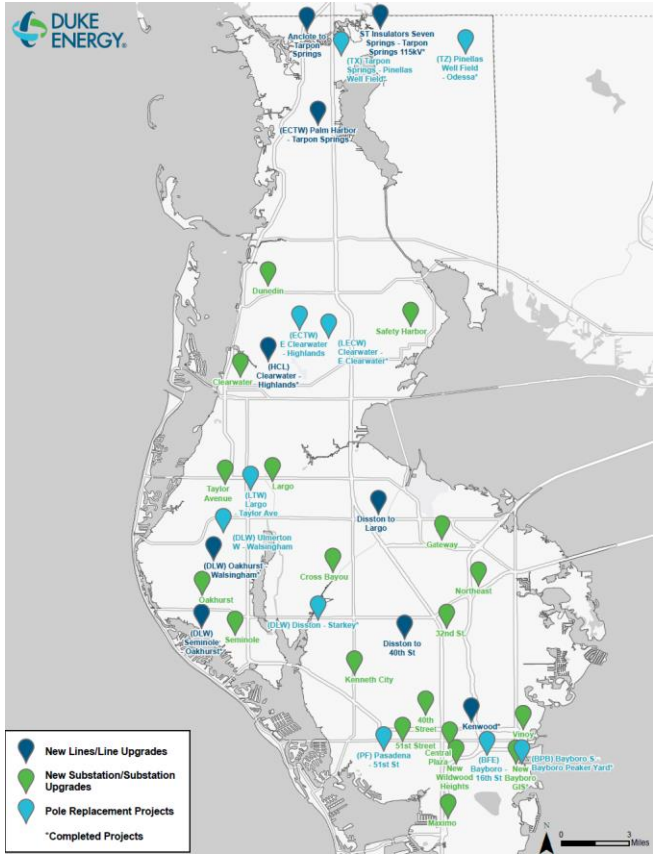
Unprecedented Growth Driving New Investment

- Historic Gas Plant District - 8M sf new development, 4800 residential units
- Duke Energy - 200+ megawatts needed
- Requiring planning and investments in the transmission and distribution system
  - 20+ projects completed by 2027
  - 25+ projects 2027 - 2035



Unprecedented Growth Driving Significant Investments

- Requiring planning and investments in the transmission and distribution system
- Key Upgrade Programs
  - Storm Protection
  - Transmission
  - Substation Optimization
  - Lighting
- Key Programs
  - Disston to 40th St. Underground Line
  - Disston to Largo Line Rebuild
  - *New* Wildwood Heights Substation
  - Large Substation Upgrade
  - Dunedin, Taylor Ave., Largo Substation Optimization



Sustainable Power is Resilient Power

Resilience in Action

Duke Energy and Sustainability

Net Zero: Duke Energy has set an ambitious goal to reach net-zero carbon emissions from electricity generation by 2050.

Utility Scale Solar in Florida: Through 2024, we'll have about 5 million solar panels in Florida, generating 1,500 megawatts. That's enough to power over 440,000 homes! We are building 12 new solar plants between 2025 and 2027 and will continue to build beyond those.

Innovation: We are working with large-scale battery storage, floating solar plants, hydrogen fuel blends and grid-tied home solar and batteries.

Large-Scale Solar

Current Solar Sites

- 25 sites
- 1,500 megawatts

New Sites 2025-2057

- Adding 12 new sites
- 900 megawatts

By 2033

- 6,100 MW of utility-scale solar generation

Floating Solar at Hines

- Test Site for Durability / Feasibility

Large-Scale Battery Storage and Microgrids

Micanopy Battery

- 8.25 megawatts
- Supplies 800 customers for 8 hours

Suwannee Next-Gen Battery

- 8 MW in Service
- Sodium-sulfur technology
- Stores energy for up to eight hours

Johns Hopkins School Microgrid

- 3.5-megawatt solar plus storage microgrid site
- Backup electric power for special need's hurricane evacuation shelter

Grid Investments

- Up to 100 MW Battery sites in design and adding to solar sites

Electric Vehicle Charging

Park and Plug

- Fast Chargers

Fleet Charging

- PSTA

Residential Charging

- Off-peak hour charging credits

Project Develop Rebate

- EV Charger Prep Credit

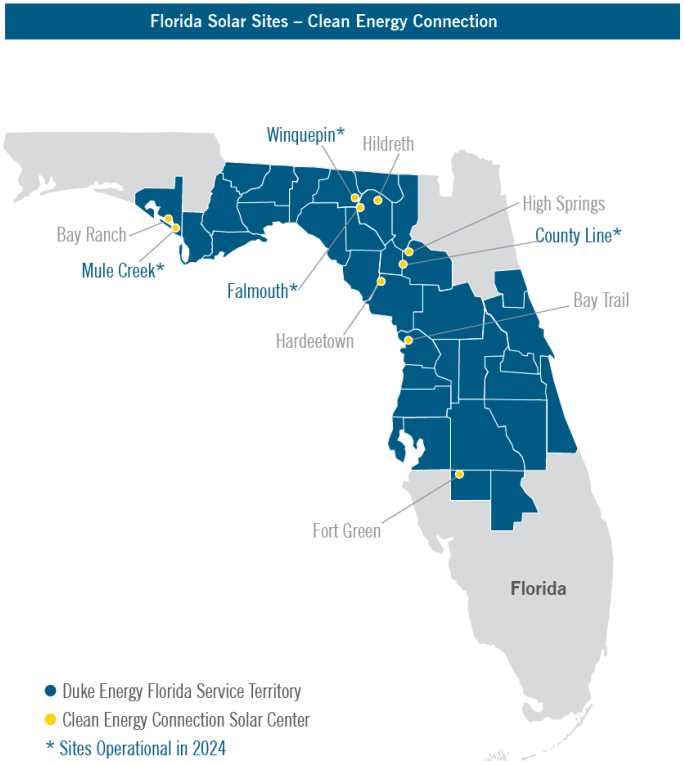
Clean Energy Connection: Program Overview

Subscriptions & Credits

- Participants subscribe to capacity in kilowatts(kW) associated with the program's solar plants for a fixed monthly subscription fee, $8.35/kW.
  - 1kW generated 2,221MWhs from May ‘24 to April ’25 for $100
- Customer receives monthly bill credits for their subscriptions’ monthly generation multiplied by the credit rate, $0.04037/kWh. Credit Rate is fixed for the first 36 months and increases annually by 1.5%.
  - 1kW generated annual credits from May ‘24 to April ’25 of $90

Solar Energy Subscription - Florida

*This is an illustrative example. Generation will vary based on solar radiance, weather, degradation and other variables.



Clean Energy Impact

It's Affordable

- Purchasing renewable attributes from Duke Energy's existing renewable energy facilities means a low cost of entry.

It's Easy

- With no equipment to install and maintain, your organization can reach its sustainability goals simply by participating.

It's Local

- All Clean Energy Impact RECs originate from Duke Energy solar generation in Florida.

It Helps Others

- Your organization's participation helps to reduce energy costs for ALL Florida customers.

Clean Energy Impact (CEI) is the newest way to reduce your organization's environmental footprint. By purchasing renewable energy certificates (RECs) directly from Duke Energy renewable generation in Florida, you can contribute to the sustainability goals of your business and support the growth of cleaner energy sources right here in the Sunshine State.

HOW IT WORKS

Your business enrolls – As a participant, your company enters into a service agreement with Duke Energy to purchase at least 1,000 RECs per year at the current cost of $3.52 per REC to help offset your electrical usage and achieve your environmental and sustainability goals.

Renewable power is generated locally – RECs will then be created from Duke Energy Florida renewable assets.

Your business claims the REC – Your company has exclusive rights to apply the renewable attributes to your own sustainability goals once we retire them on your behalf.

You support local, clean energy – Each REC represents 1 megawatt-hour of energy from clean sources replacing energy that would otherwise come from traditional sources.

Clean Energy Impact RECs

Resilience In Action: Case Study Panel Discussion

Jenny Miller
Owner & Founder
The Body Electric Yoga Company

Mark Ferguson
Owner & Founder
Ferg's Sports Bar

Mark Hubbard
Owner & Captain
Hubbard's Marina

Resilience for Businesses

Storm Preparation Tips for Businesses

Before the Storm - For Businesses - Duke Energy

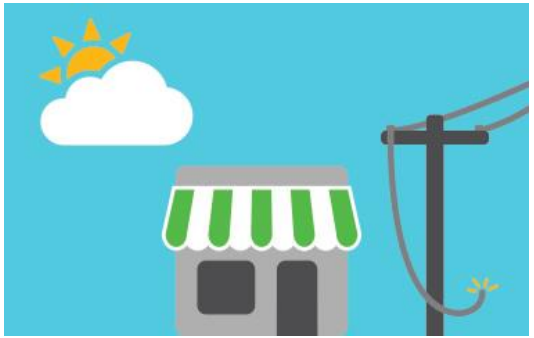
- Make a plan / Monitor weather forecasts

During the Storm - For Businesses - Duke Energy

- Report outages
- Check on employees
- Follow emergency officials' advice
- Communicate status of business to customers

After the Storm - For Businesses - Duke Energy

- Keep safety a priority
- Stay away from downed lines



For additional storm tips visit Business Storm Center - Duke Energy

Pinellas County Emergency Management

READY ▸ SET ▸ PROTECT

Sign up for ALERTPinellas

- Get emergency notifications by phone, text or email.
- Receive alerts for local emergencies.

St. Petersburg Area Chamber of Commerce

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