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

Value of Integrated Feeder & Lateral Solutions

Kumar Chandran
Director, Corporate Commercial Strategy

Rethink How You Modernize Your Grid

Meet
Expectations
& Drive Value

Implement
the Right
Technology Mix

Scale
Deployment for
Biggest Impact

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Rethink How You Modernize Your Grid

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Meet Expectations & Drive Value | **Rapidly Changing Outcomes**

Safe

Reliable

Cost Effective

Resilient Against Storms

Enable Electrification & Renewable Integration

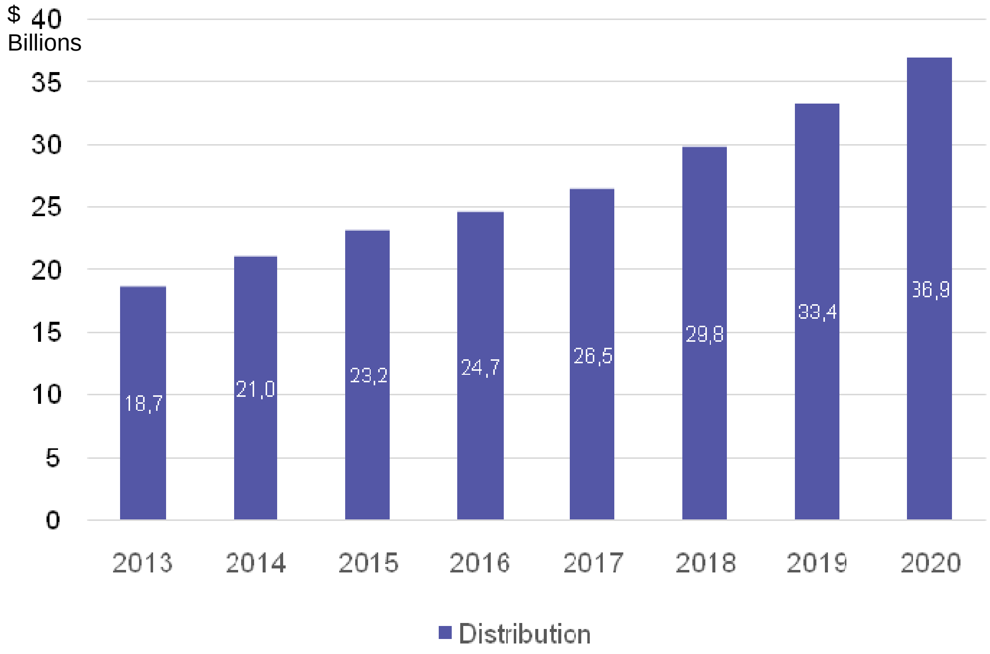
Customer Experience

Traditional Outcomes → Emerging Outcomes

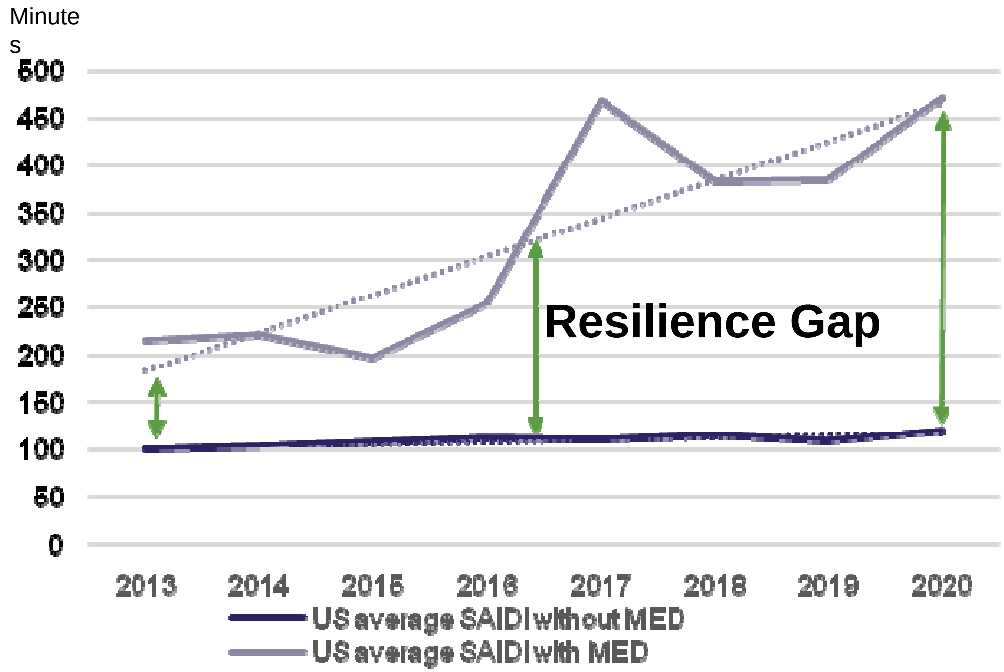
Meet Expectations & Drive Value

Are Grid Modernization Programs Working?

U.S. – Distribution Annual Spend*



U.S. – Average SAIDI incl. and excl. Major Events**

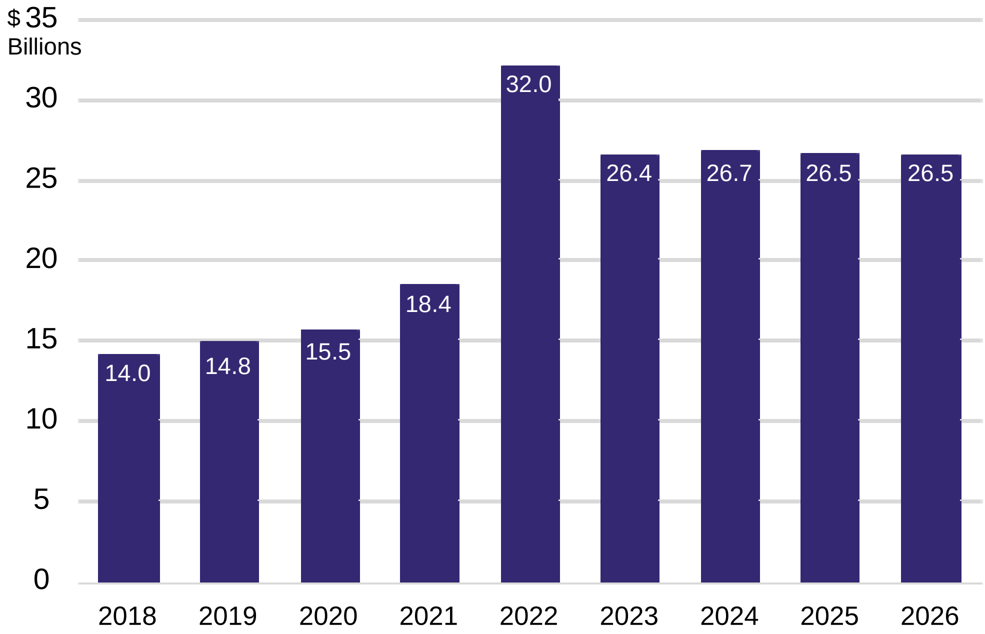


*Source: FERC Filings Form 10-A

**Source: Annual Electricity Power Industry Report, EIA Form 861 detailed data workbooks.

Meet Expectations & Drive Value | **What's Working?**

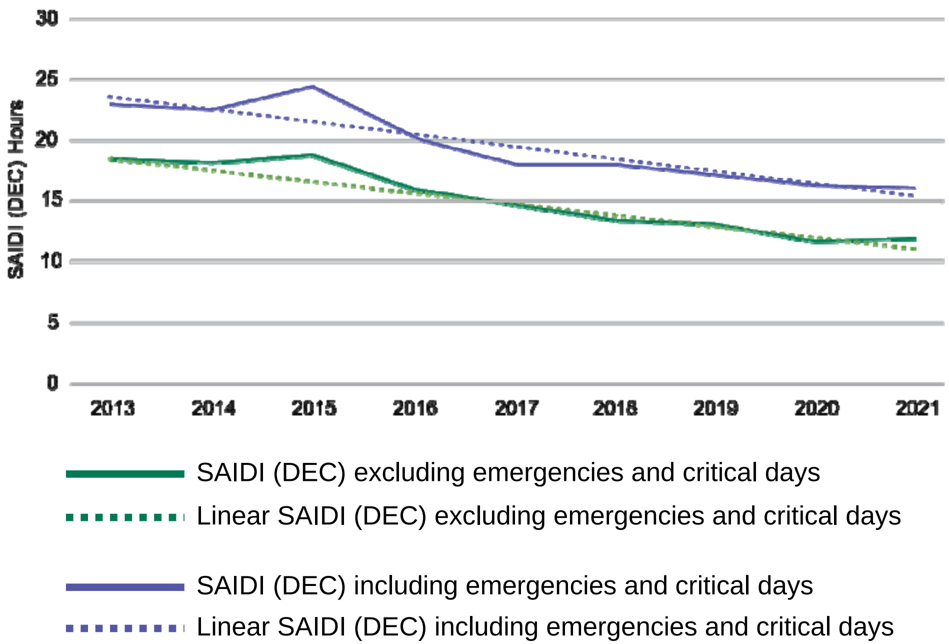
Brazil – Distribution Annual Spend*



*Source: ANEEL
**Source: ANEEL & gov.br

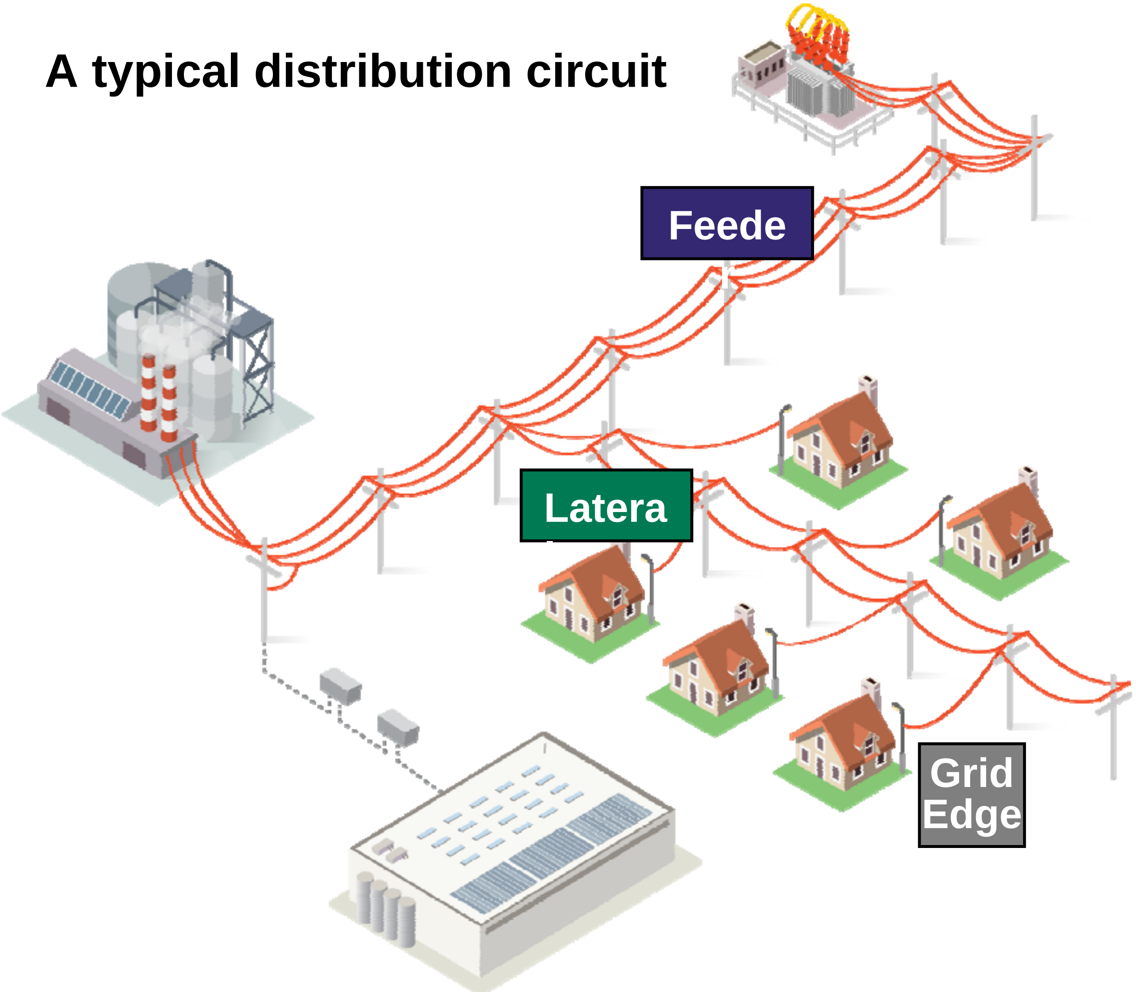
Brazil SAIDI (DEC)

With and Without Exclusions for Emergencies and Critical Days**



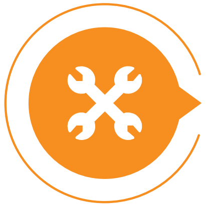
Meet Expectations & Drive Value | **Key Drivers**

A typical distribution circuit



Safety
Reduce truck roll cost and exposure for line workers to dangerous situations in hazardous weather.

Reliability & Resiliency
Keep the power on for your customers consistently, even during weather events.



Operational Excellence
Reduce O&M costs significantly, while achieving top reliability.

Environment
Improve your green footprint by avoiding thousands of gallons of fuel per year.

Rethink How You Rebuild Your Grid

Meet Expectations & Drive Value

Implement the Right Technology Mix

Scale Deployment for Biggest Impact

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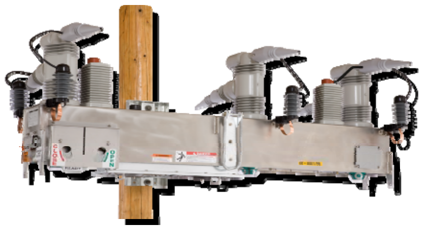
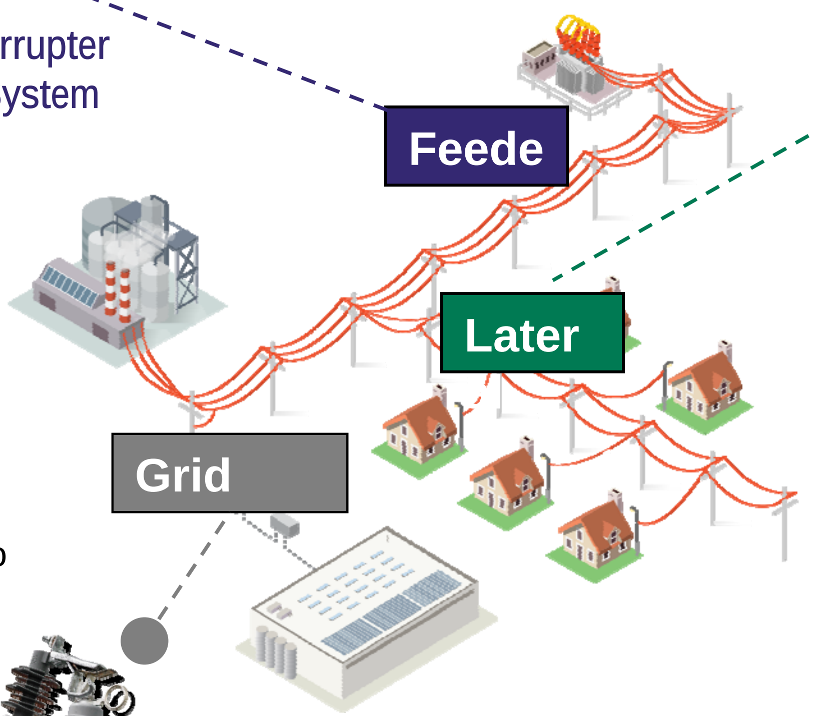
Implement the Right Technology Mix | **Think Holistically**



IntelliRupter® PulseCloser® Fault Interrupter IntelliTeam® Automatic Restoration System

Enable new technologies and applications for improved feeder protection and reliability.



NEW! VacuFuse® II Self-Resetting Interrupter

Increase customer satisfaction down to the grid-edge by automatically clearing temporary faults and eliminating transformer fuse nuisance outages.

TripSaver® II Cutout-Mounted Recloser

Improve reliability with a modern lateral protection strategy that combines the best of fuse-saving and fuse-blowing.

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Implement the Right Technology Mix

IntelliRupter® PulseCloser® Fault Interrupter

Reduce impact of conventional fault testing and enable advanced application flexibility

- Prevent damage to your system when fault testing
- Achieve more segmentation on ANY circuit
- Deploy universal protection for overhead, underground, or hybrid circuits
- Enable advanced restoration schemes

Implement the Right Technology Mix

IntelliRupter Fault Interrupter – Real World Results

Municipal utility in Tennessee applied over **1000 IntelliRupter Fault Interrupters with IntelliTeam** on ALL of their 15 kV class circuits

Automatic Self-Healing Technology quickly restores service where possible, so dispatchers and field crews can focus their efforts exactly where they are needed most.

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S&C

Implement the Right Technology Mix

TripSaver® II
Cutout-Mounted Recloser

Combines the Best of Fuse-Blowing and Fuse-Saving

Eliminate Unnecessary Outages

Save Money on Truck Rolls

Improve Customer Satisfaction

Implement the Right Technology Mix

TripSaver II Recloser – Real World Results

COPEL

- Brazil – Paraná State
- 4,880,000 customers
- 124,000 miles of Distribution Lines
- 400,000 Distribution Transformers

Total of **17,800** single-phase reclosers installed since 2016

140,000
Fuse Replacements Avoided

58.6%
SAIDI Improvement

$25.2 Million
O&M Savings

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Implement the Right Technology Mix

VacuFuse® II Self-Setting Interrupter

Fault-Testing at the Grid Edge

Improve Customer Satisfaction

Simplify Deployment and Operations

Deliver Coordination Flexibility

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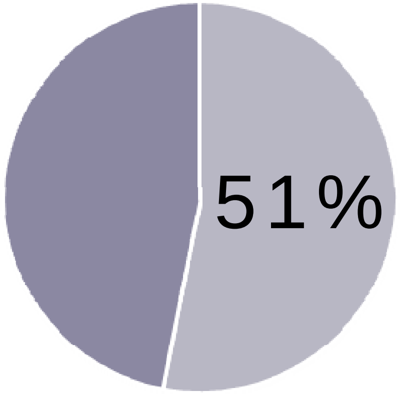
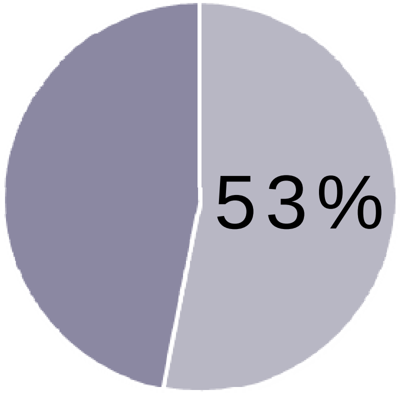
Implement the Right Technology Mix

VacuFuse II Interrupter – Real World Results

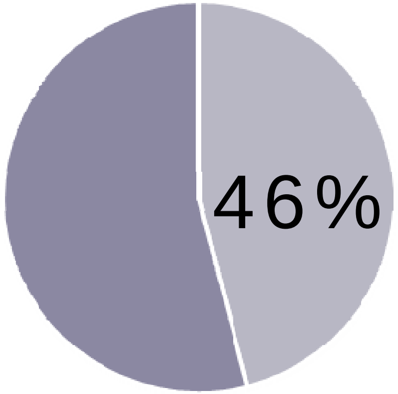
Over 30,000 units installed for >1yr



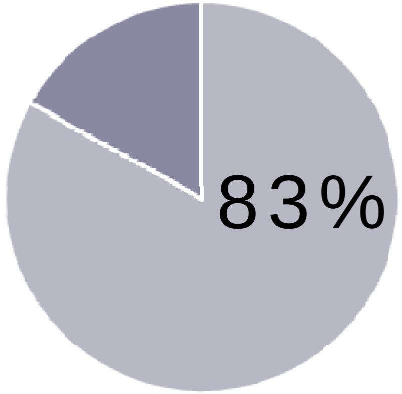
Reduction
in field visits—
less miles driven,
less emissions,
less hazards



Reduction
in customer
interruptions



Reduction
in customer
minutes of
interruption



Customer
Satisfaction
Score

Rethink How You Modernize Your Grid

Meet Expectations & Drive Value

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Scale Deployment for Biggest Impact

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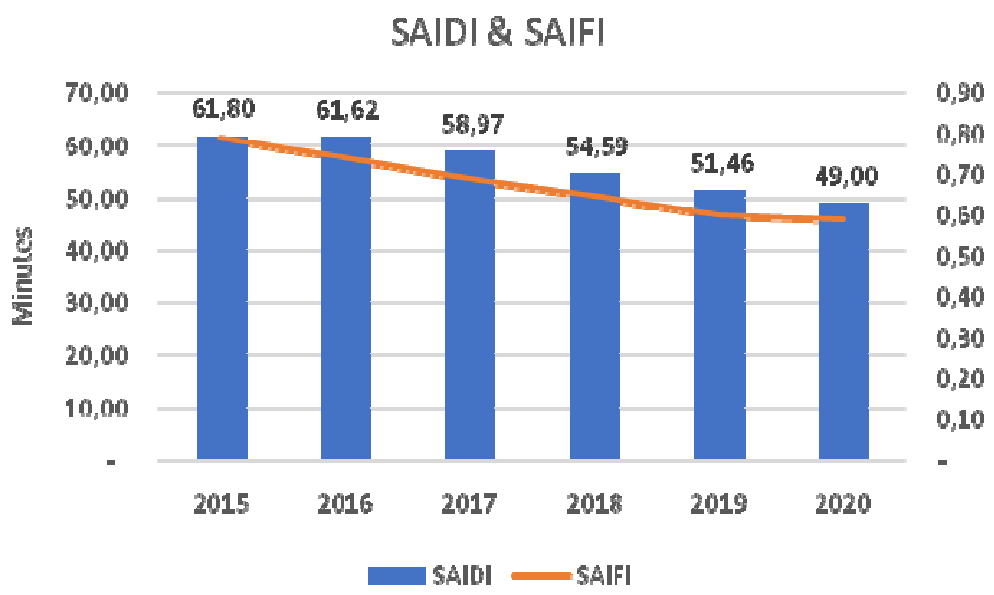
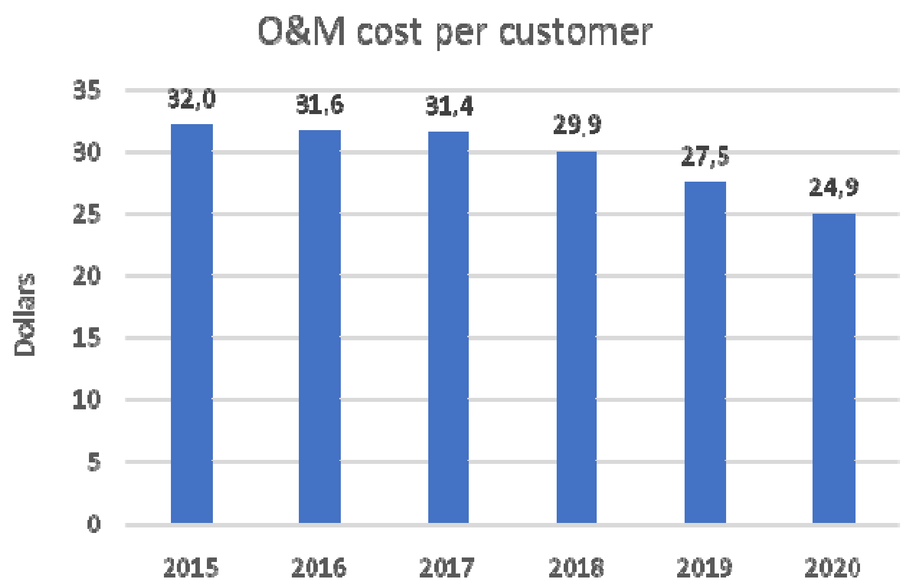
Scale Deployment for Biggest Impact | **Think Holistically**

7,000 IntelliRupter; 95,000 TripSaver II; 30,000+ VacuFuse II





21% **SAIDI Improvement** **25%** **SAIFI Improvement** **22%** **O&M/cl. improvement**

Hurricane Ian (Initial data)

- ✓ **2.1** million customers lost power and 2/3 were back within 24 hours
- ✓ Automated Feeder Switches (i.e., IntelliRupter) avoided ~ **400,000** customer outages

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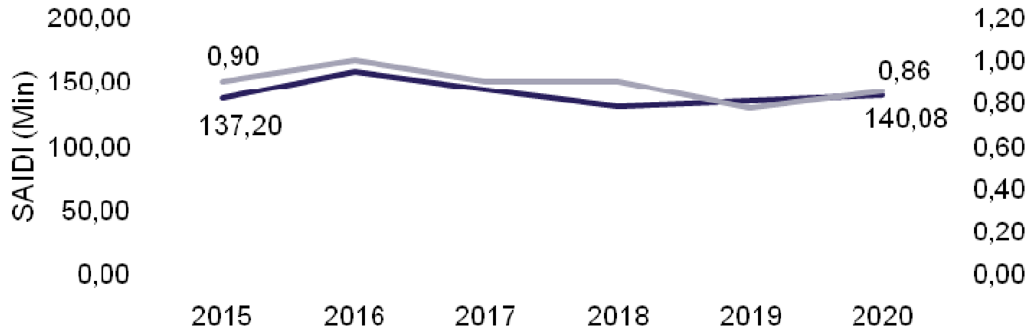
Scale Deployment for Biggest Impact | **Think Holistically**

Large IOU – Southeast US

This utility deploys IR & TSII on targeted worst performing feeders gradually



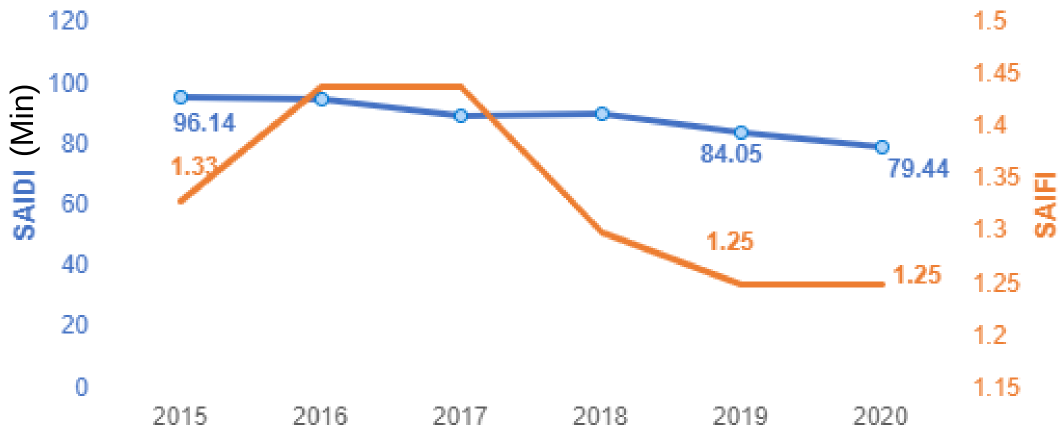
FLAT SAIDI

4%

SAIFI Improvement

Large IOU – Central US

This utility deploys both IR & TSII in volume as part of a program since 2017



11%

SAIDI Improvement

13%

SAIFI Improvement

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