

Welcome

**Liberty Utilities Reliability
Reporting Workshop for
2020 Calendar Year**

December 8, 2021



Agenda

- Purpose of Workshops
- System Overview
- Key Utility Initiatives
- Reliability Performance
- Questions





Service Territory Overview

- Purchased NV Energy's (SPPCo) California service territory in 2011
- 1,482 square miles; 49,000 customers
- Two office locations: South Lake Tahoe and Tahoe Vista
- Pay \$2.8 million in annual property taxes and franchise fees in 7 counties
- 125 employees currently
- Regulated by the California Public Utilities Commission (CPUC)
- Winter Peaking Utility





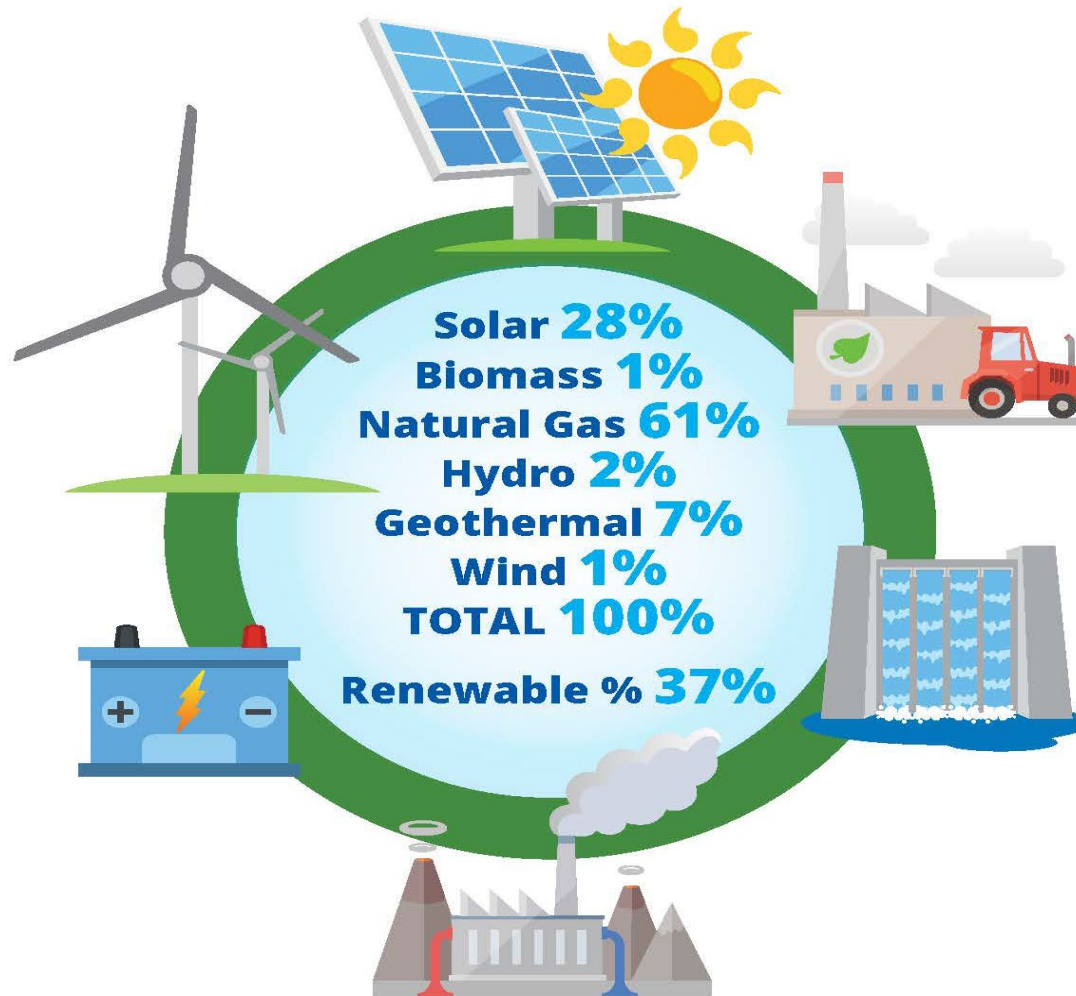
Service Territory Overview

- 2078 Total Circuit Miles
 - 96 Overhead Transmission
 - 1417 Overhead Distribution
 - 565 Underground Distribution
- 12 Substations
- 12MW of Emergency Diesel Generation
- Max System Load: 144.5 MW (Dec 2012)
- 88% Residential, 12% Commercial





Where Does The Power Come From





Factors for Customer Satisfaction

- Reliability
- Safe Service
- Outage Notification

Region	Incidents	Aff Served	%	Estimated Restoration Times
Alpine	0	0	477	0%
El Dorado	0	0	23721	0%
Mono	0	0	661	0%
Nevada	0	0	1310	0%
Placer	0	65	16614	0.4%
Plumas	0	0	1774	0%
Sierra	0	0	791	0%
Total	0	65	45348	0.1%

Liberty Utilities News & Events ▾ Energy Efficiency ▾ Renewable Energy ▾ Safety ▾ Emergencies & Outages ▾ Rates ▾ My Account ▾

Home > Residential > Emergencies > Outages Map

Customer Care: 1-800-782-2506 Emergencies & Outages: 1-844-245-6868

Outage Map

We work hard to provide our customers with safe and reliable service. Despite our best efforts to prevent outages, there are factors beyond our control that will occasionally knock out power. Scroll down to view map and outage information; be sure to refresh your page if you have this bookmarked.

We Are Social!
Get connected to Liberty Utilities

Outages Map | Report an Outage | What To Do | Planned Outages | Storm Preparation | Emergency Disaster Relief



Outage Reporting and Tracking

Please Call 1-844-245-6868

Region	Incidents	Affected	Served	%	Estimated Restoration Times
	0	0	1	0%	
Alpine	0	0	477	0%	
El Dorado	0	0	23820	0%	
Mono	0	0	662	0%	
Nevada	0	0	1302	0%	
Placer	0	0	16511	0%	
Plumas	0	0	1777	0%	
Sierra	0	0	789	0%	
Total	0	0	45339	0%	



Customer Notifications



Twitter
@LibertyUtil_CA

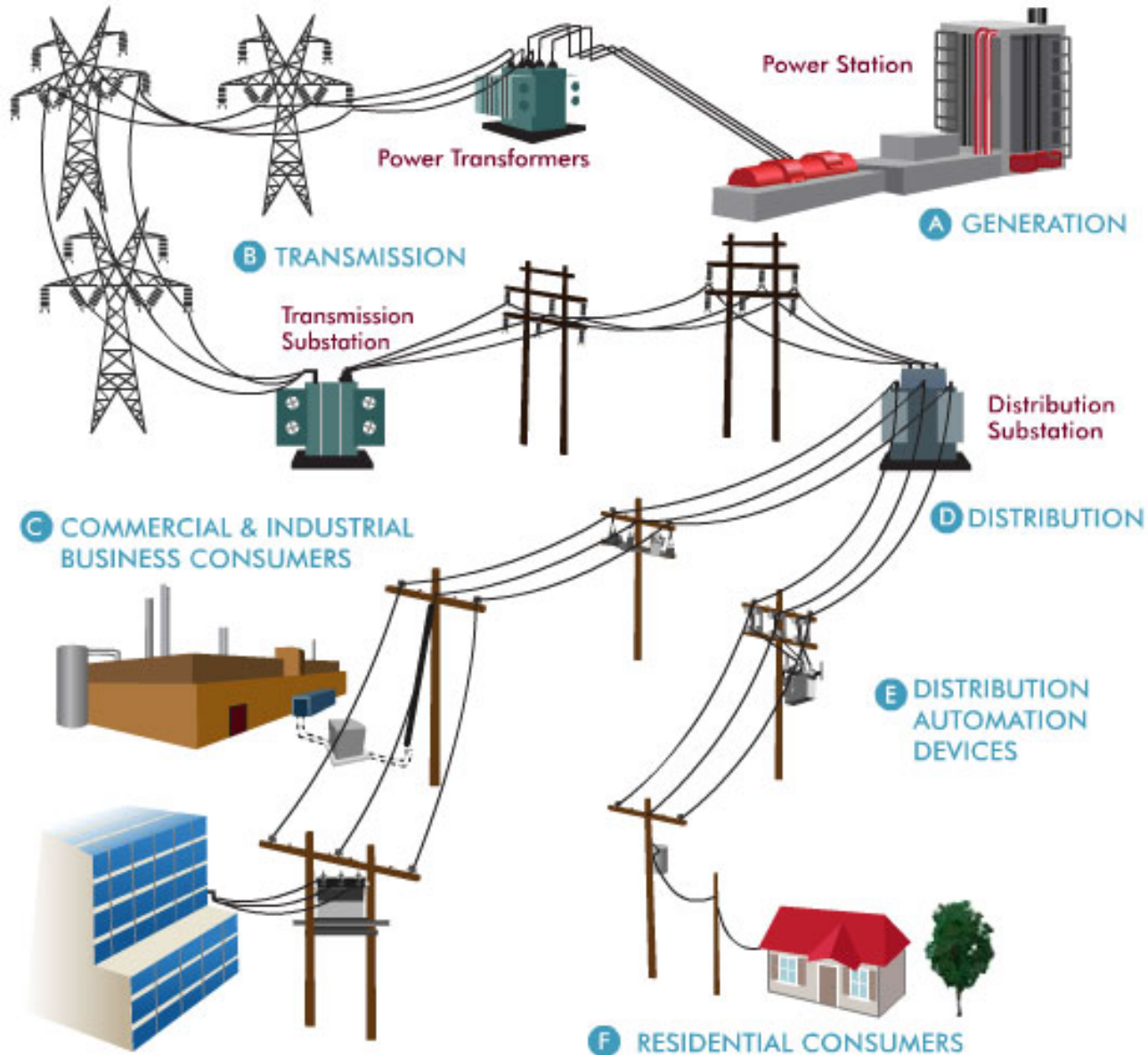


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Website: LibertyUtilities.com



Power System Overview





Power Outage Causes

- ❖ Weather (wind, snow, ice build-up, lightning)
- ❖ Animals (birds, squirrels, snakes)
- ❖ Third-Party Damage (motor vehicle accident)
- ❖ Equipment Failure (cable faults, transformer)
- ❖ Vegetation (trees, wildfire)
- ❖ Loss of Source Power from NV Energy





Momentary vs. Sustained



Momentary

Outages that are less than or equal to 5 minutes in duration

Ex: Tree branches contact a power line, burns the branch clear, and the circuit recloses automatically

Sustained

Outages that are greater than 5 minutes in duration

Ex: Tree falls through the power line and must be removed before re-energizing the line



Planned vs Major Outages

Planned Outage

- Outages where a customer or public official has made a request, or Liberty has provided notification
- These are excluded from reliability metrics

Major Event

- Institute of Electrical and Electronic Engineers (IEEE) standard 1366-2012, a set of outages that exceed the historically expected outage duration (SAIDI) for at least one day





Measuring Reliability

Every outage is analyzed to determine the following metrics:

$$\text{SAIDI} = \frac{\textit{Total of Customer Interruption Durations}}{\textit{Total Number of Customers Served}}$$

$$\text{SAIFI} = \frac{\textit{Total Number of Customers Interrupted}}{\textit{Total Number of Customers Served}}$$

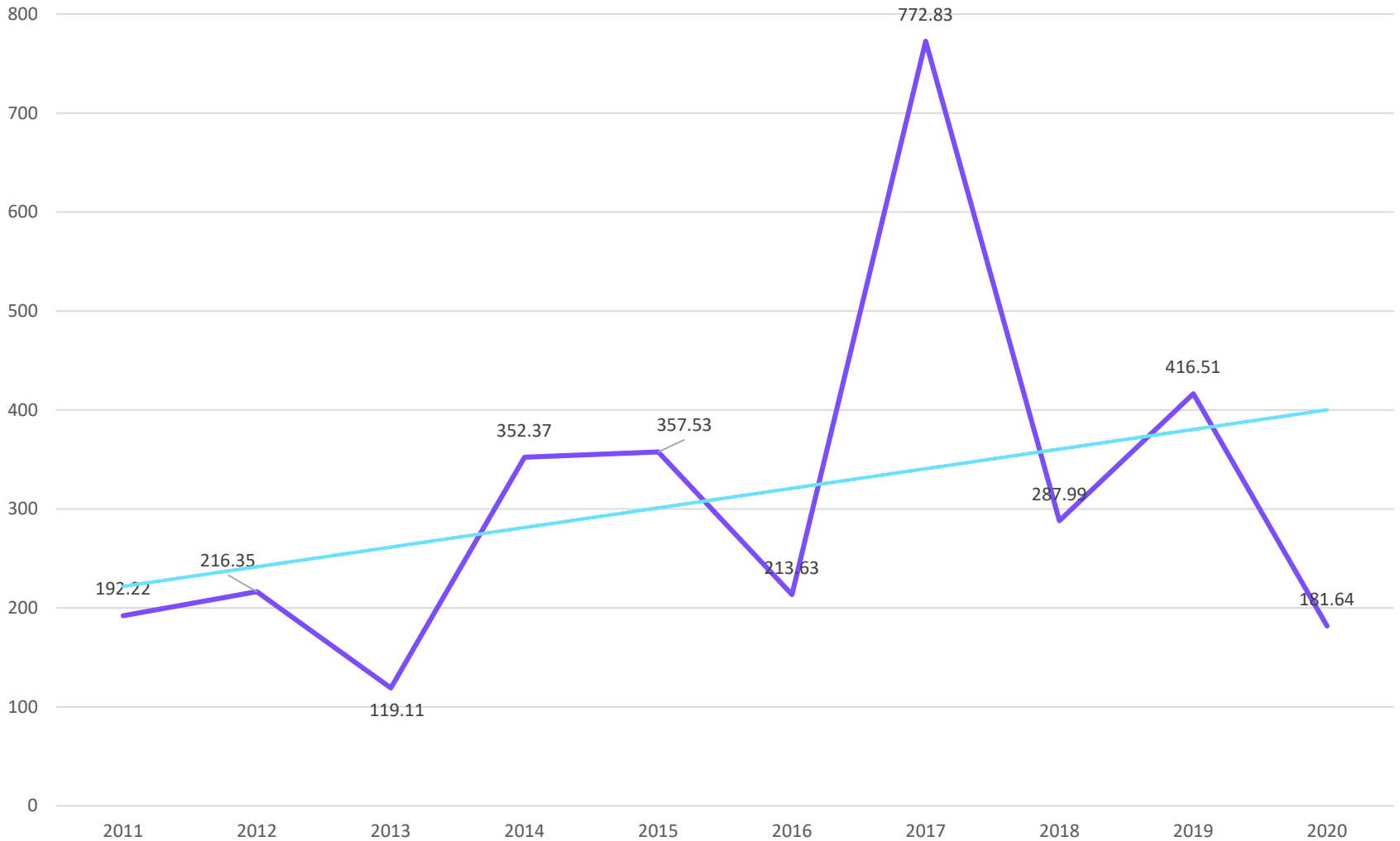
$$\text{CAIDI} = \frac{\textit{Total Customer Interruption Durations}}{\textit{Total Number of Customer Interruptions}}$$

$$\text{MAIFI} = \frac{\textit{Tot.No.of Customer Momentary Interruptions}}{\textit{Total Number of Customers Served}}$$



SAIDI System Performance

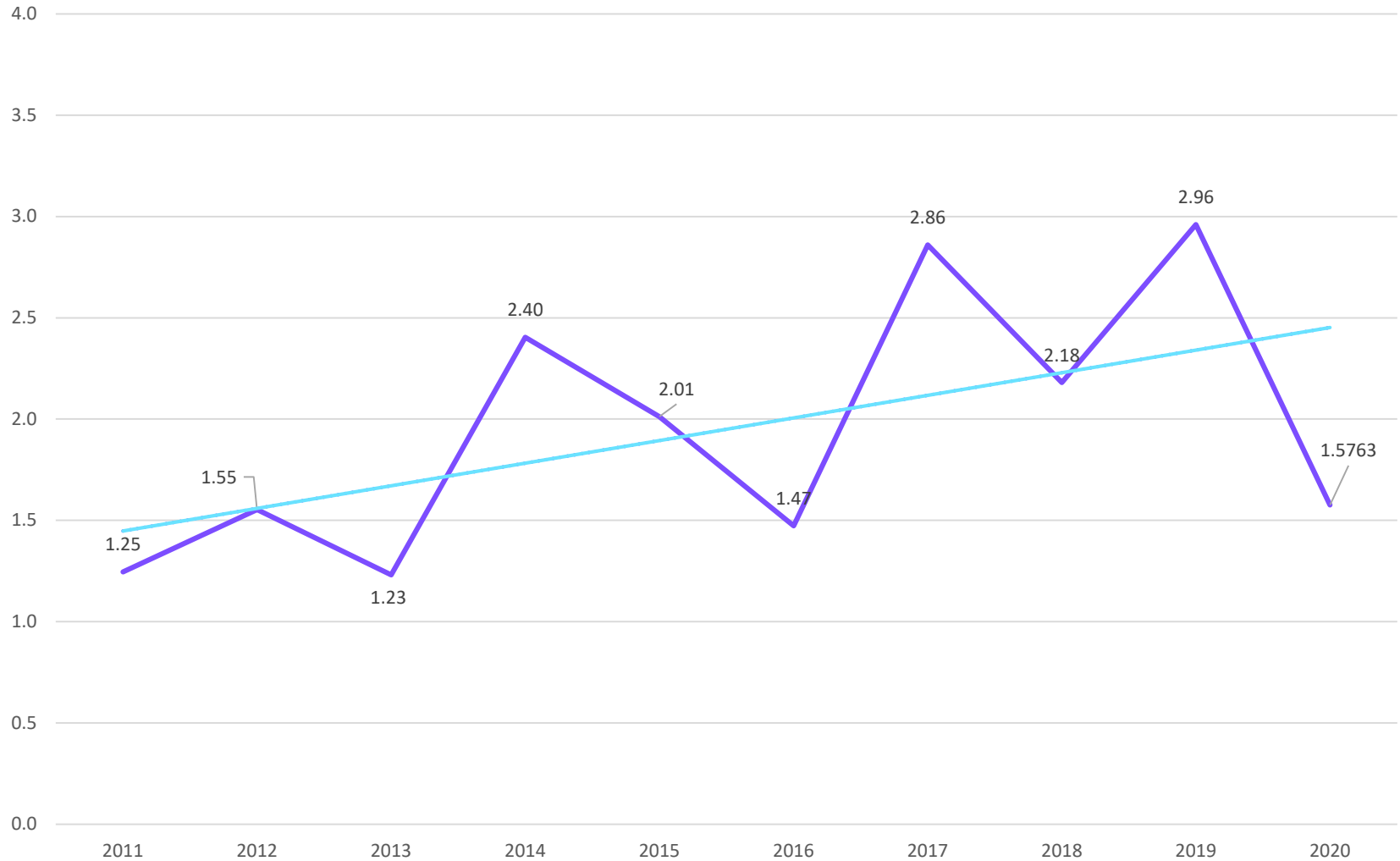
Distribution System Indices MED Excluded (SAIDI)





SAIFI System Performance

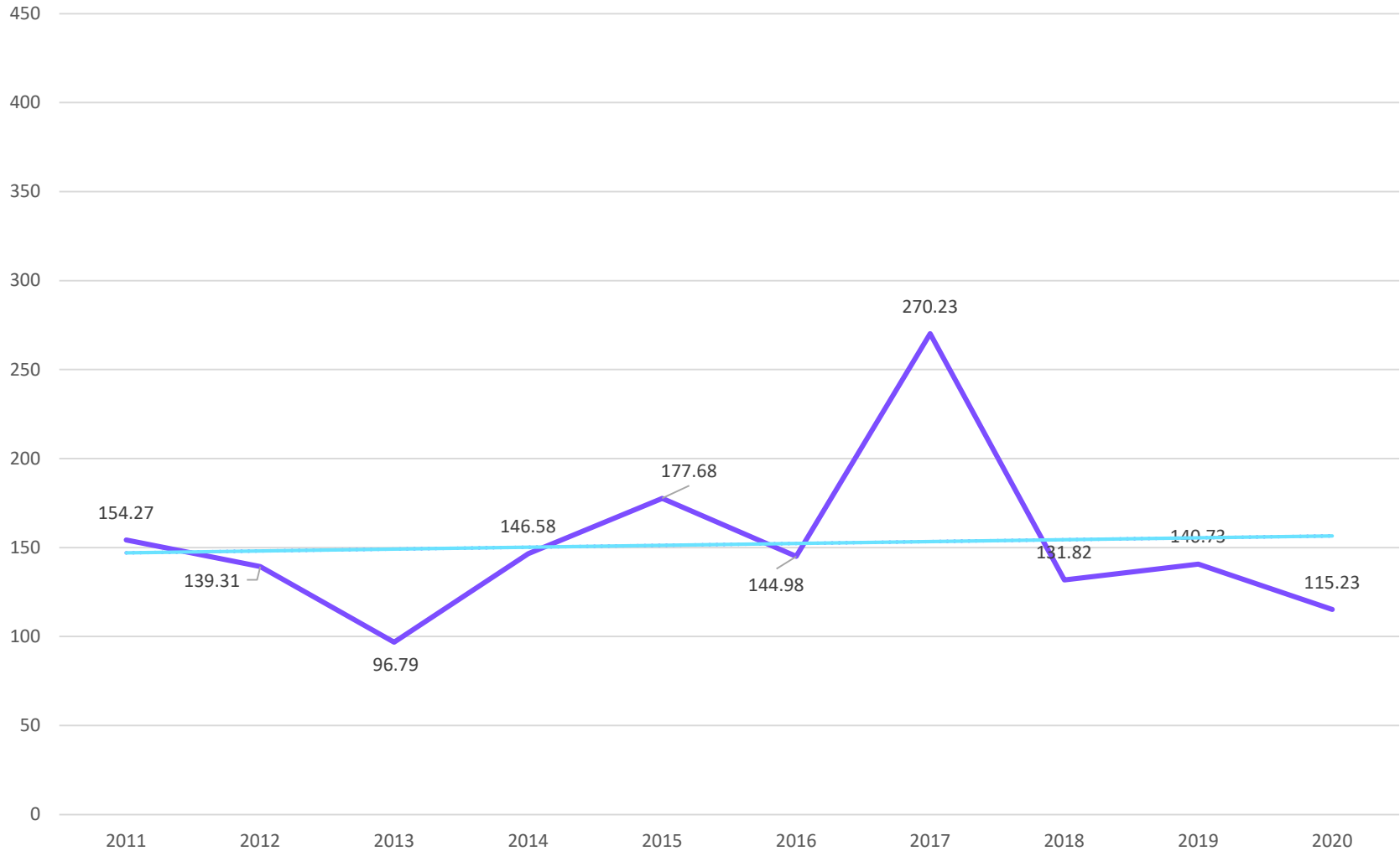
Distribution System Indices MED Excluded (SAIFI)





CAIDI System Performance

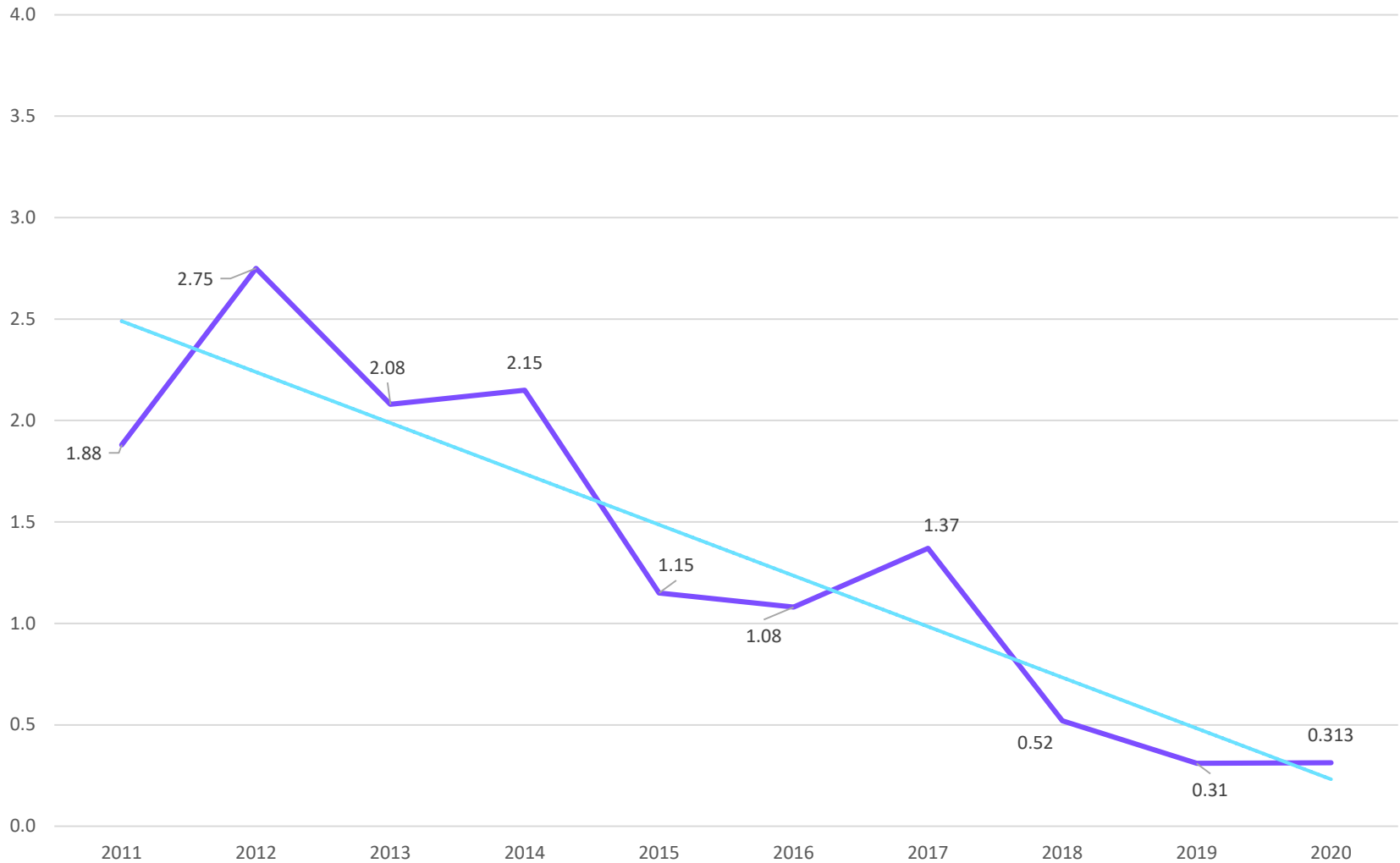
Distribution System Indices MED Excluded (CAIDI)





MAIFI System Performance

Distribution System Indices MED Excluded (MAIFI)





Worst Performing Circuits

Circuit	Customers	Substation	Circuit Miles	OH	UG	Circuit Outages	Circuit SAIDI	Circuit SAIFI
1261*	749	Topaz	70.9	76.2%	23.8%	5	2615	5.66
31	671	Portola	15.5	88.0%	11.9%	2	594	2.82

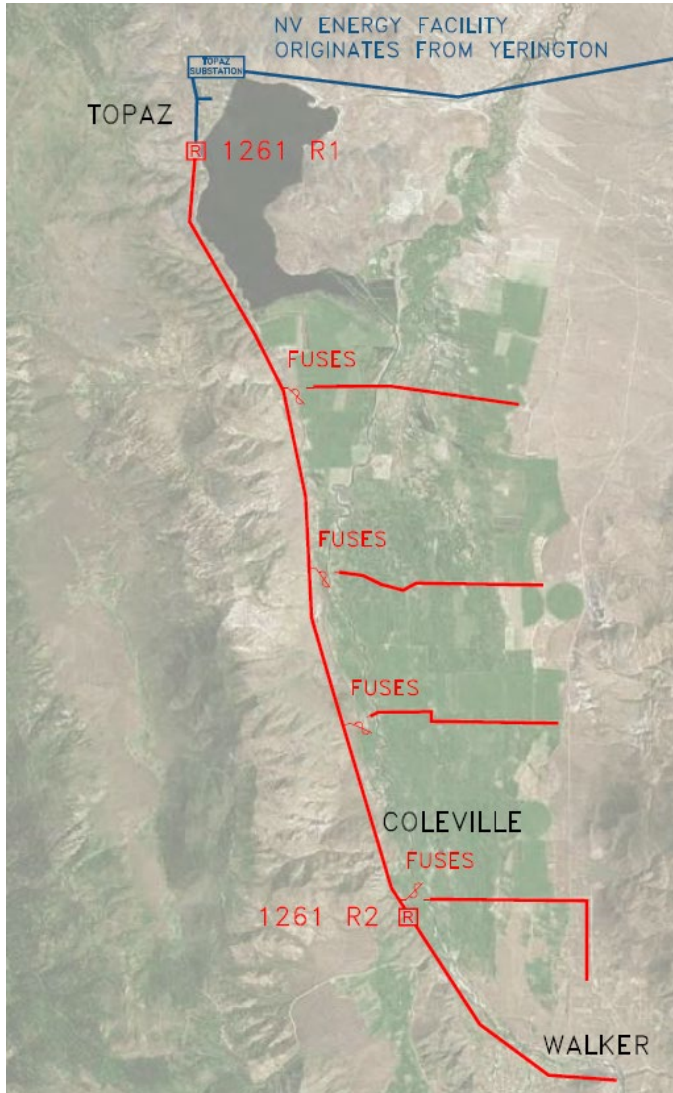
Analysis of worst performing circuits excludes planned and Major Event outages.

The preferred metric for this analysis is the three-year average circuit level SAIDI in order to account for population discrepancies between urban and rural circuits.

- Circuit that has been identified as deficient in the previous year's report
- Required to report worst performing circuits to the CPUC



Topaz 1261 Circuit

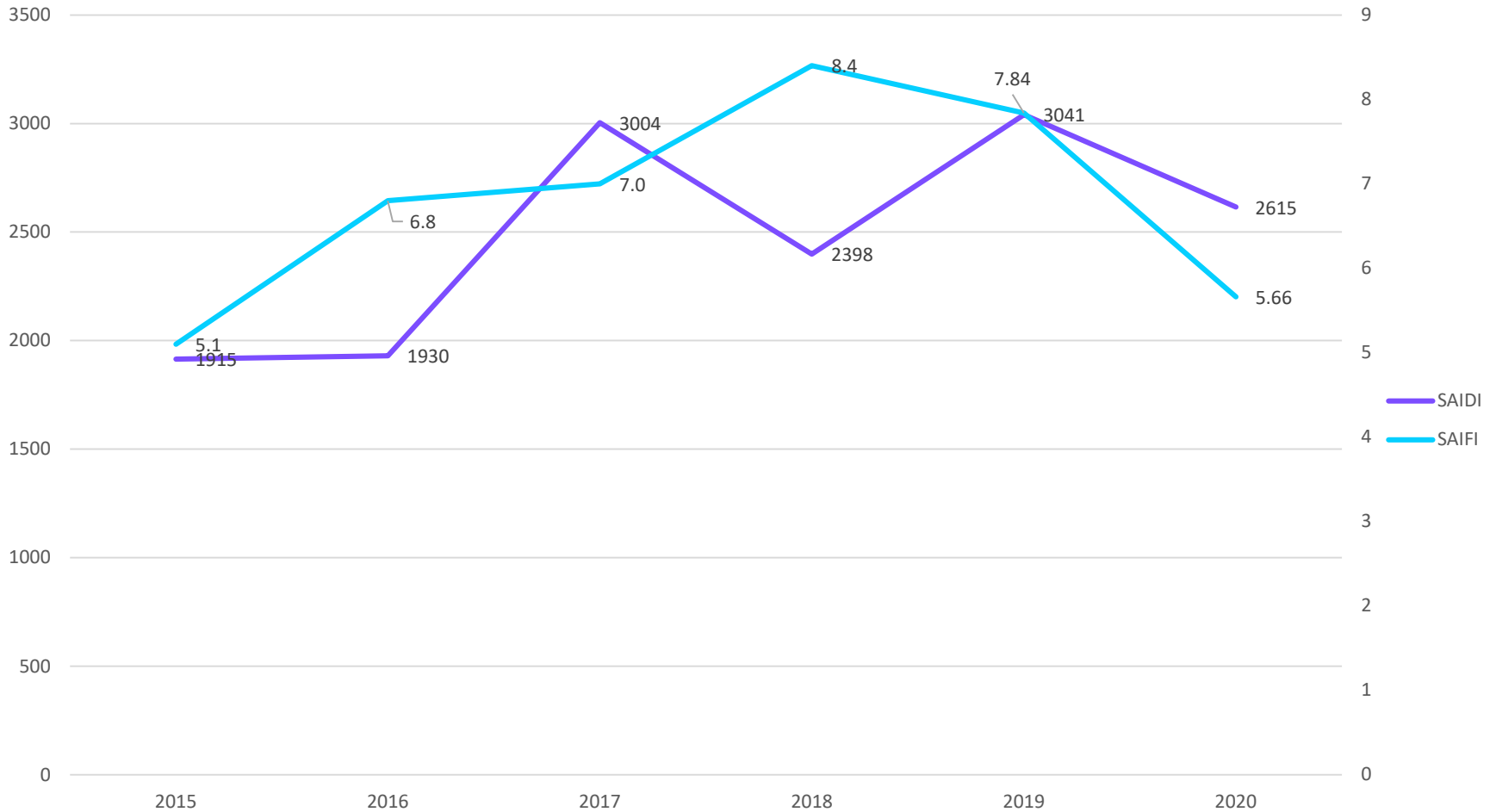


- Services Coleville, Walker
- Approximately 763 customers
- 1,408 poles
- 73.6 miles O/H
- 10.2 miles U/G
- Radial source from Smith Valley, NV



Reliability Trend

Topaz 1261 Reliability Metrics





Significant Outages

November 17, 2020

- ❑ Outage caused by fire
- ❑ Widespread outages throughout the circuit
- ❑ Outage Time – 12 hours till fully Restored

March 22, 2019

- ❑ Incorrect connections on generator to transformer
- ❑ Left entire feeder out of power
- ❑ Outage Time – 32 hours 50% Restored; 48 hours 66% Restored; 56 hours 90% Restored; 58 hours Fully Restored



Portola 31 Circuit

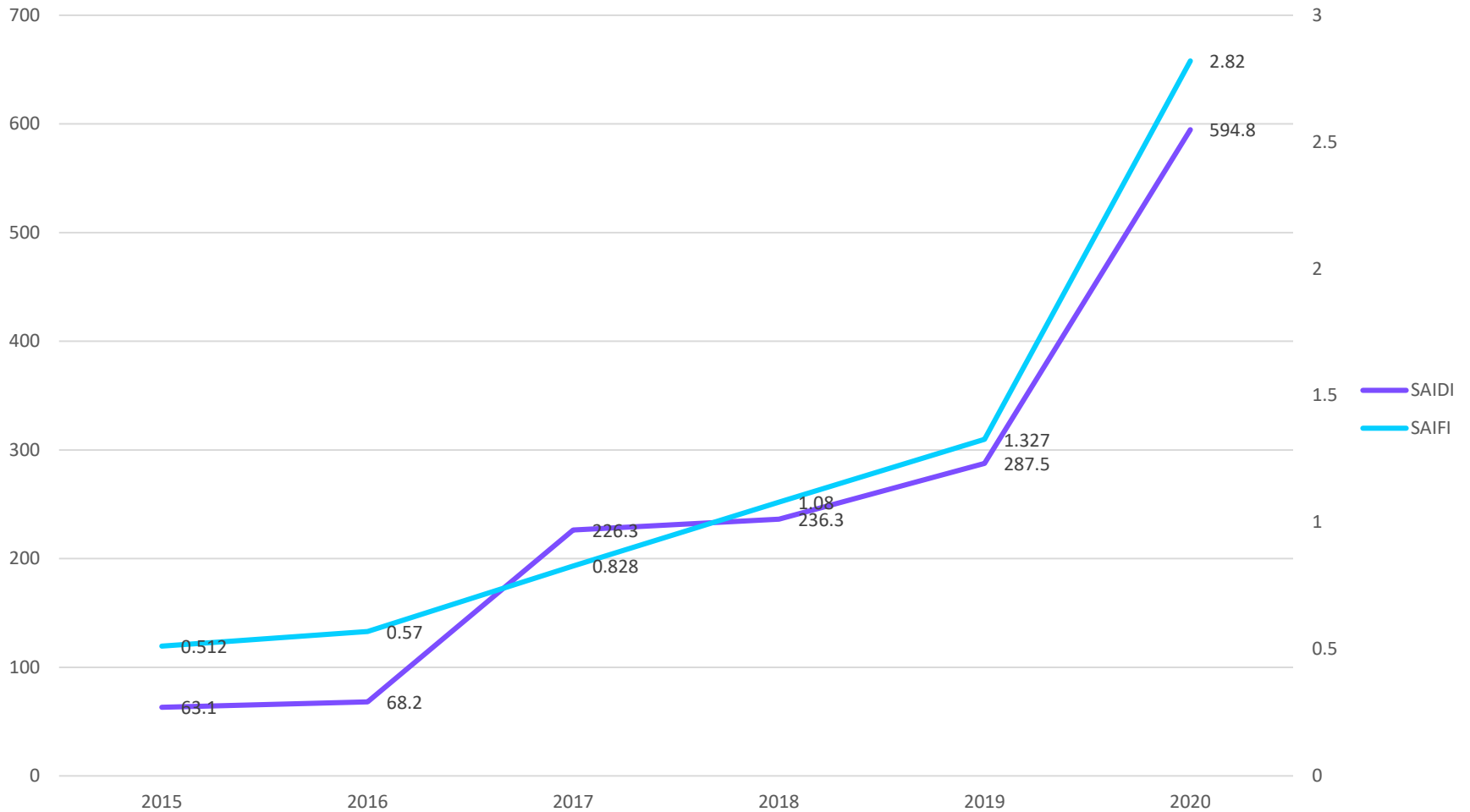


- Services Portola
- Approximately 696 customers
- 550 Poles
- 26.7 miles O/H distribution
- 5.2 miles U/G distribution



Reliability Trend

Portola 31 Reliability Metrics





Significant Outages

November 17, 2020

- Loss of source from NV Energy
- Line source locked out
- Outage Time - 14 hours and 14 minutes

September 7, 2019

- 20 Amp Blown fuse
- Believed to be attributed to animal contact
- Outage Time - 7 hours and 30 minutes



Reliability Improvements

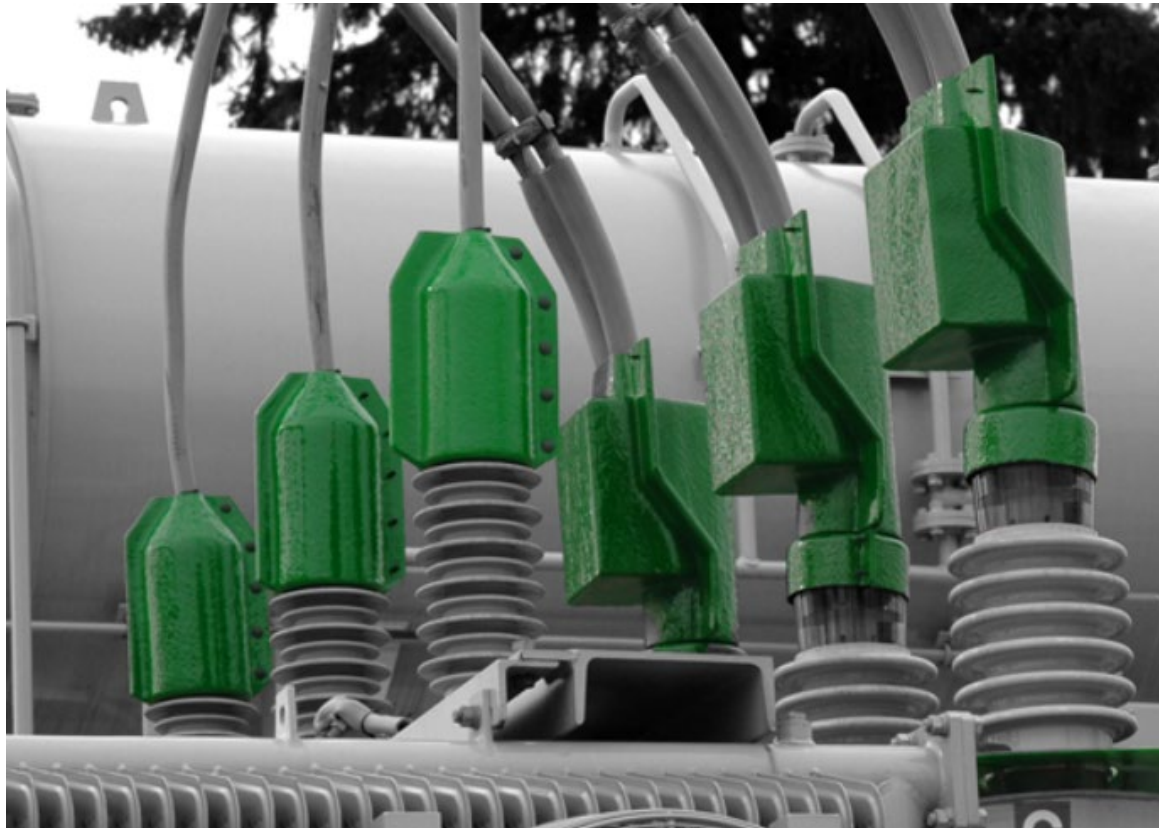


An aggressive Vegetation Management program – about \$14 million per year



Improved Animal Protection

Green Jacket Technology



This is being implemented into our new Kings Beach substation, as well as some of our existing substations.₂₆



Wildfire Mitigation Plans

Several projects are underway to reduce fire risk



Some Projects include:

- Advanced weather monitoring
- Covered conductor
- Expulsion fuse replacement
- Additional recloser installations

Thank you

Email: PowerQuality@libertyutilities.com

Or call Customer Service at
1-800-782-2506

