

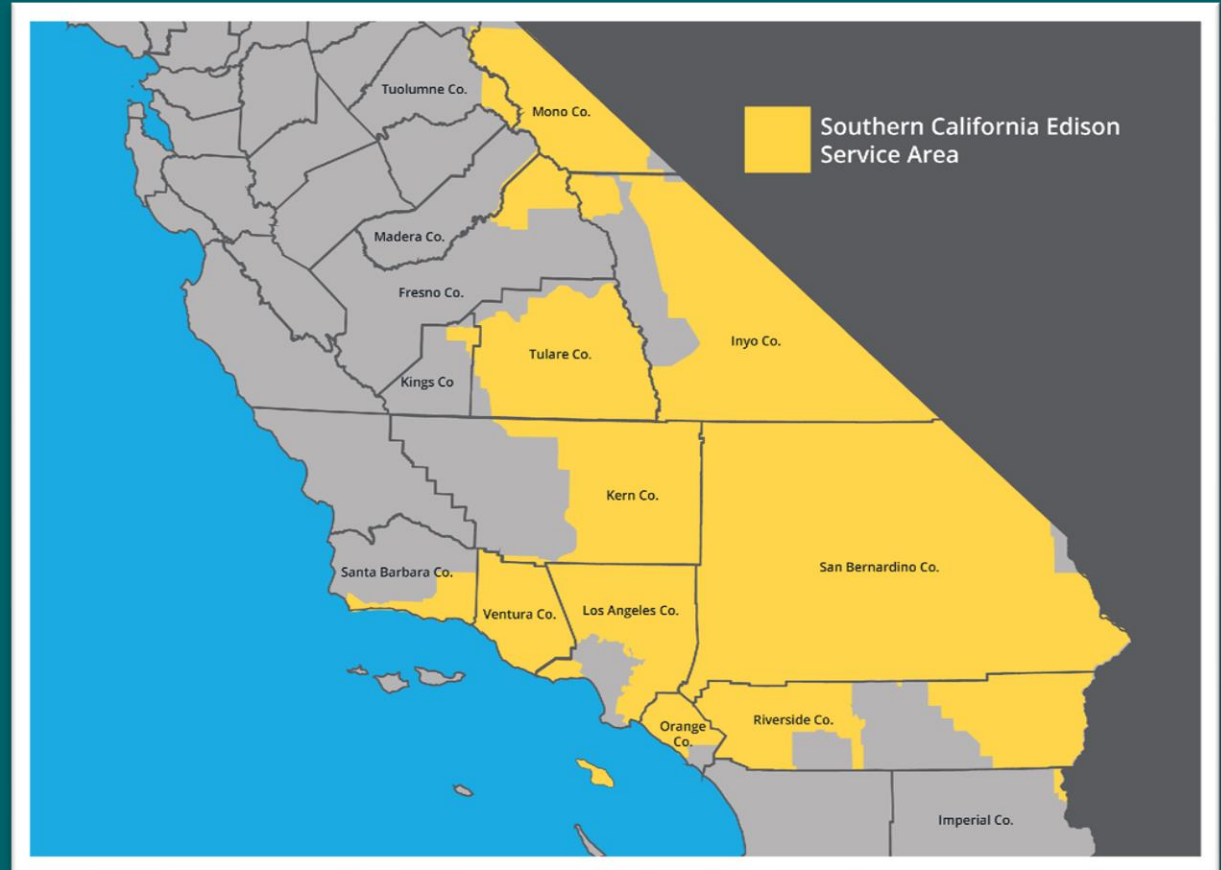
Circuit Reliability Review

Bishop Paiute Tribe

2023

Who We Are

- Southern California Edison (SCE) is an Edison International company
- One of the nation's largest electric utilities
- More than 130 years of history
- Headquartered in Rosemead, California
- Regulated by the California Public Utilities Commission (CPUC) and the Federal Energy Regulatory Commission (FERC)
- 50,000 square miles of SCE service area across Central, Coastal, and Southern California
- 15 million residents through 5 million customer accounts
- 15 counties, 185 cities and 13 Native American tribes



Our Grid

To deliver safe, reliable, and affordable power, we monitor and maintain a vast electricity system

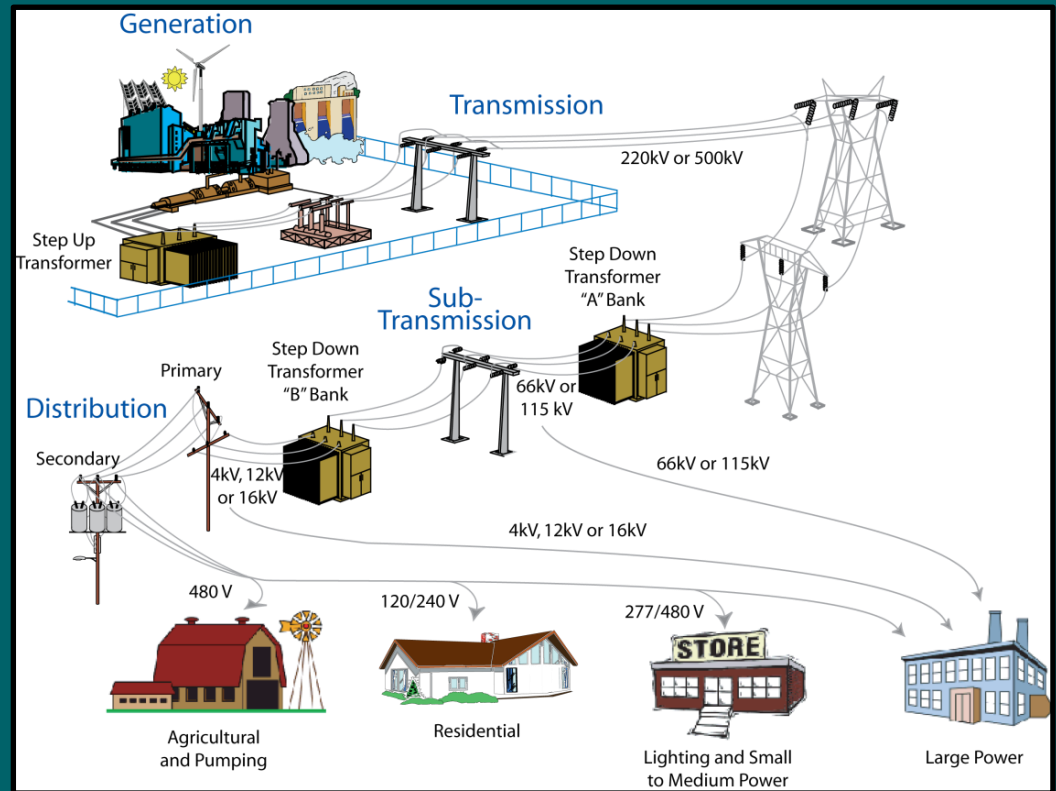
50,000 Square Miles

5,900 Circuits

1.7 Million Poles

126,000 Miles of Transmission and Distribution Lines

753,000 Transformers



Strengthening and Modernizing the Grid

SCE plans to spend more than \$5B each year to maintain, improve, and harden its infrastructure

- **Infrastructure reliability** – updating underground cables, poles, switches, and transformers
- **Wildfire mitigation** – hardening infrastructure, bolstering situational awareness capabilities, and enhancing operational practices
- **Transmission** – connecting renewables, installing new substations, and updating lines
- **Grid readiness** – updating the grid for impacts from new technologies
- **Long-term energy policy** – supporting energy storage, electric vehicles, and renewables

2022 Capital Investments

36 miles of underground cable replaced

119 miles of overhead conductor replaced for public safety

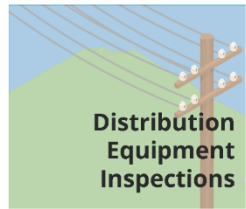
24.5k distribution poles replaced

4.3k transmission poles replaced

24 underground structure replacements

SCE's investments support safe, reliable, affordable, and clean energy for our customers

Protecting Public Safety: Wildfire Mitigation Activities



Distribution Equipment Inspections

2022 Completed/Target
162,721/150,000
inspections

✓ **108%**
completed

Completed Since 2018
926,700+
inspections

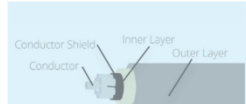


Transmission Equipment Inspections

2022 Completed/Target
17,225/16,000
inspections

✓ **108%**
completed

Completed Since 2018
124,100+
inspections

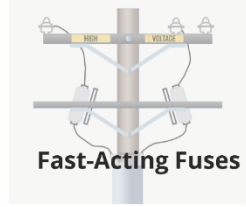


Covered Conductor

2022 Completed/Target
1,399/1,100
circuit miles installed

✓ **127%**
completed

Completed Since 2018
4,380
circuit miles installed



Fast-Acting Fuses

2022 Completed/Target
369/350
fuses installed or replaced

✓ **105%**
completed

Completed Since 2018
13,700+
fuses installed or replaced



Hazard Tree Management

2022 Completed/Target
467/330
circuits assessed

✓ **142%**
completed

Completed Since 2018
1,320+
circuits assessed



Weather Stations

2022 Completed/Target
160/150
weather stations installed

✓ **107%**
completed

Completed Since 2018
1,620+
weather stations installed



High-Definition Wildfire Cameras

2022 Completed/Target
16/10
cameras installed

✓ **160%**
completed

Completed Since 2018
180+
cameras installed



Aerial Fire Suppression Resources

Contributed \$18 million in 2022 to lease the quick reaction force of aerial firefighting assets to local fire agencies in SCE's service area to coordinate and reach wildfires in their early stages. These unique water and fire retardant dropping tankers have the capability to operate day and night.



Critical Care Backup Battery

2022 Completed
3,466
batteries provided to eligible customers

Completed Since July 2020
10,200+
batteries provided to eligible customers



Community Resource Centers

64
sites available



Community Crew Vehicles

8
vehicles available

Protecting Public Safety: Public Safety Power Shutoffs

- SCE implements **Public Safety Power Shutoffs (PSPS)** to temporarily shut off power to some communities when there is a high risk for wildfire to **prevent the electric system from becoming the source of ignition**
- PSPS is **used as a measure of last resort to protect public safety under dangerous fire weather conditions**, including high winds, low humidity, and dry vegetation
- Multiple methods are used to notify customers and stakeholders in impacted areas before, during and after a PSPS event
- SCE provides resources to support customers during PSPS and offers several **programs and rebates to help customers be prepared and more resilient** during emergencies
- SCE is working to **reduce the impact of PSPS** and is continuing to **strengthen the electric grid to become more resilient** in the face of extreme weather events
- To learn more, visit [sce.com/psps](https://www.sce.com/psps)



SCE's System Planning Process

- Southern California Edison (SCE) performs annual system evaluations to address the changing power needs throughout its service territory
- System capacity plans are developed on a 10-year forecast based on information provided by customers and load forecasting methodologies
- Accurate and timely customer information is crucial to system planning evaluations
- **Developers should contact SCE as early as possible to initiate discussions with planning on power service needs.**



SCE's Forecasting Process

- SCE's forecasting team is actively engaged with internal and external stakeholders to make sure that we build a forecast that reflects current program, policies, and development plans which impact the grid
- SCE's forecasting team uses different data sources for forecasting the future Distributed Energy Resource (DER) load such as:
 - Customer Data such as historical customer usage and DER adoption such as electric vehicles (EV)
 - Demographic and Socio-Economic Data
 - Customer program and survey participation results
 - Existing project development impact
 - Short and long-term customer plans on DER adoption such EV charging sites

When Should I Contact SCE Regarding Power Needs?

- *The Short Answer: As Soon As Possible.* For example, when you contact the city to initiate business permits, reach out to SCE as well to discuss your plans
- SCE will always provide the power our customers require to operate their business **but upgrades to our grid may be required.** Partnering with SCE early will help ensure that the level of power required is delivered in both a timely – and safe – manner
- Customers should contact SCE as early as possible, preferably 2 years, especially for large power requests
- Contact the appropriate planning department to discuss and review the scope of your project, including plans for phasing in power

Plan Ahead – Providing Energy Capacity

Did You Know? A new 12 kV circuit which provides about 10MW of power (roughly 12,000 amps @480 V) can take between 2 to 3 years to construct.

Did you Know? A new customer-owned substation can take between 3 to 5 years to construct.

The more project information a customer can provide and the earlier they can reach out to SCE concerning the energy requirements for a new building project (or for upgrading an existing building) the better.

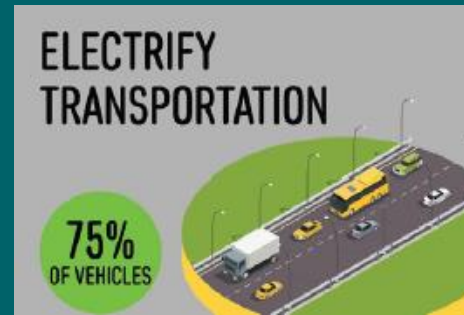
Creating a Clean Energy Future

Pathway 2045:

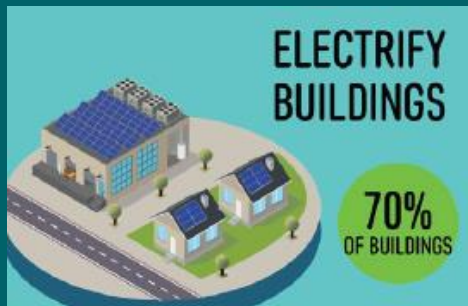
Key steps California must take to reach carbon neutrality



100% of grid sales with carbon-free electricity
80 GW of utility-scale clean generation
30 GW of utility-scale energy storage



26 million electric vehicles
Over 1 million electrified medium and heavy duty vehicles



70% of all buildings will use efficient electric space and water heating
90% fewer GHG emissions from all-electric homes



50% reduction in natural gas consumption
40% of the remaining natural gas is biomethane and hydrogen

Creating a Clean Energy Future: Mind the Gap

MIND THE GAP

POLICIES FOR CALIFORNIA'S COUNTDOWN TO 2030



4X

**RATE OF
REDUCTIONS
NEEDED TO CLOSE
CALIFORNIA'S GAP**



We can achieve this by **cleaning the power grid** and **efficiently electrifying** as much of the world as possible

Reliability Overview

Energy for What's AheadSM



What is Reliability?

- In simplest terms:
Having dependable electricity when you need it.
- Outages:
 - Maintenance outages (aka planned outages)
 - Repair outages (aka unplanned outages)
 - Sustained Outage = An outage lasting > **5 minutes**
 - Momentary Outage = An outage lasting \leq **5 minutes**
 - Public Safety Power Shutoff (PSPS)
 - Major Event Day (MED)



Major Event Day (MED) : A day in which the daily system SAIDI exceeds a threshold value. For the purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began. Statistically, days having a daily system SAIDI greater than a threshold value are days on which the energy delivery system experienced stresses beyond that normally expected (such as severe weather). MEDs are sometimes excluded in reporting; in those reports the exclusions will be noted.

Public Safety Power Shutoff (PSPS) : An operational protocol that SCE implements under extreme weather conditions in order to minimize the threat of wildfires and keep communities safe from potentially dangerous situations. These types of sustained outages are temporary and usually involve situations where high fire areas are experiencing adverse weather or public safety is at risk.

How Do We Measure Reliability?



What's the average amount of time my power service will be unexpectedly interrupted?



What's the average number of times my power service will be unexpectedly interrupted?



What's the average number of times my power service will be momentarily (< 5 minutes) interrupted?

Overview of Bishop Paiute Tribe

Note: The number of customers listed represents the total number of customers on each circuit (not the local jurisdiction).

There are 2 circuits that serve Bishop Paiute Tribe

1

Circuit Type	Customers	Circuit Type	Customers	Circuit Type	Customers	Circuit Type	Customers
INYO LUMBER(12KV)	2,413						
UNDERWOOD(12KV)	1,638						

Grand Total 4,051

SAIDI & SAIFI Cause Definitions

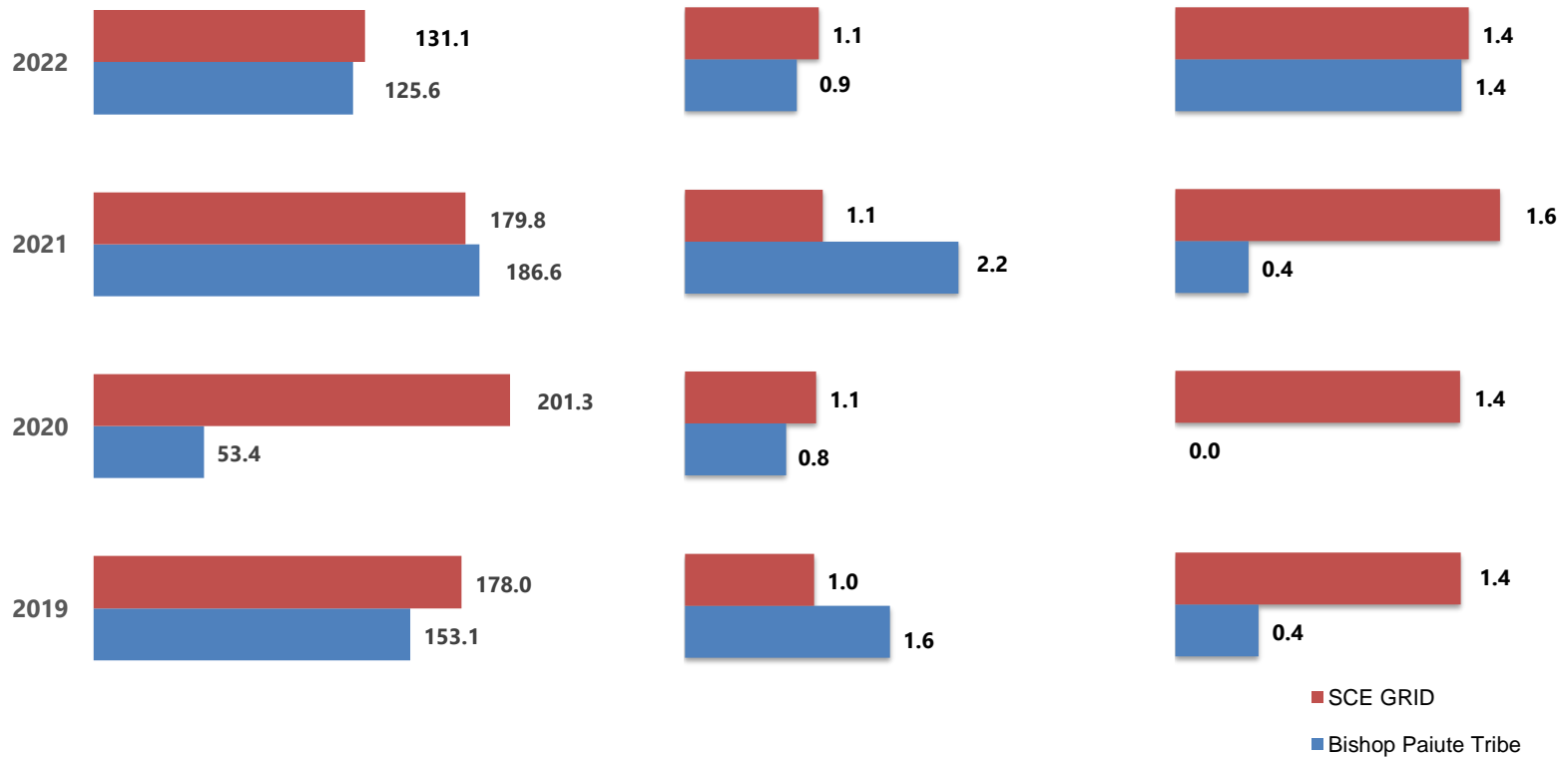
Equipment Failure	In-service failure of transformer, switch, or conductors
Vegetation/Animal	A tree branch, rodent, or bird causing a short circuit between conductors
Other	The circuit was patrolled but no cause found
Operations	SCE performed urgent maintenance without the standard 3-day notice
3rd Party	Outage caused by a balloon, car hit pole or dig-in
PSPS	Public Safety Power Shutoff sce.com/psps

Historical Reliability of Circuits Serving Bishop Paiute Tribe

SAIDI
(the average minutes of sustained interruptions)

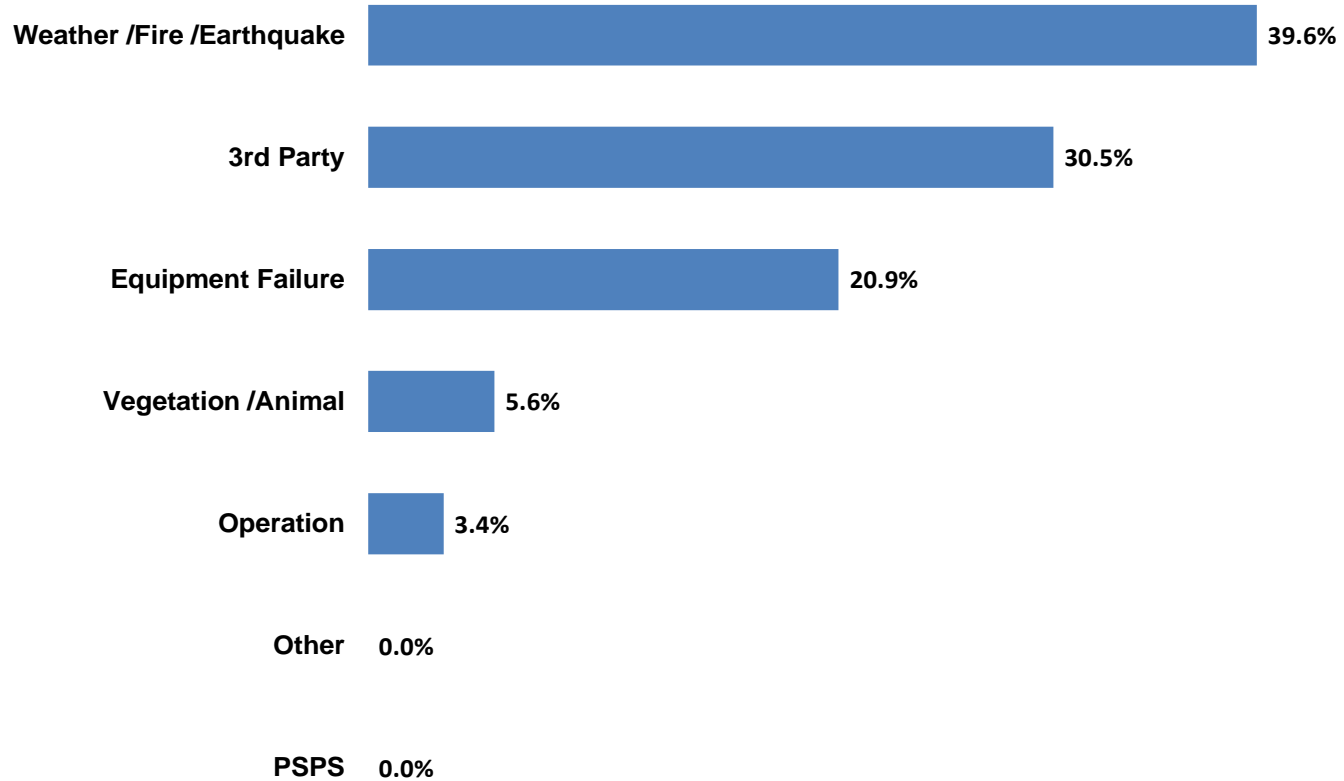
SAIFI
(the average frequency of sustained interruptions)

MAIFI
(the average frequency of momentary interruptions)



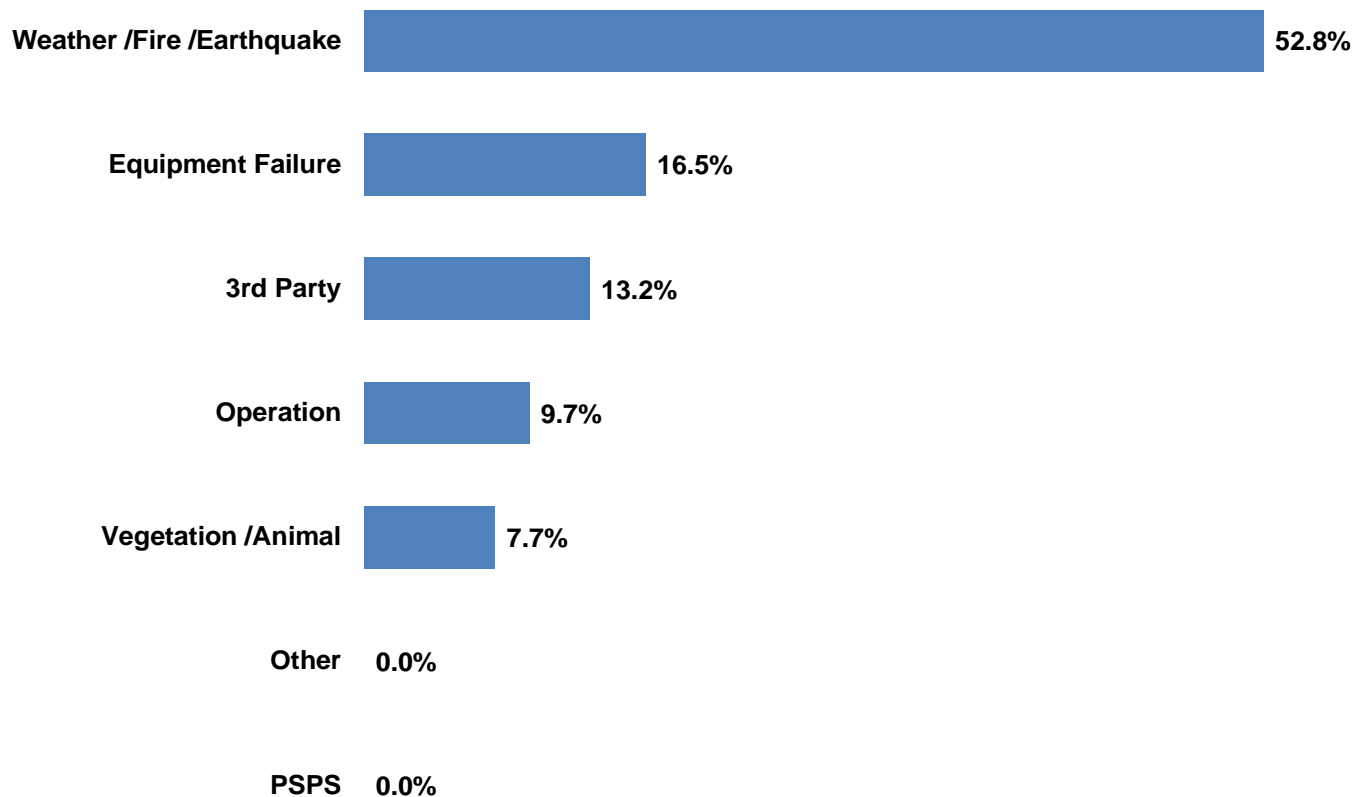
* NO EXCLUSIONS **Data is as of 03/12/2023, data can be slightly different due to outage data validation process

2022 SAIDI Outage Causes for Bishop Paiute Tribe



SAIDI = the cumulative amount of time the average customer is interrupted by “sustained” outages each year.

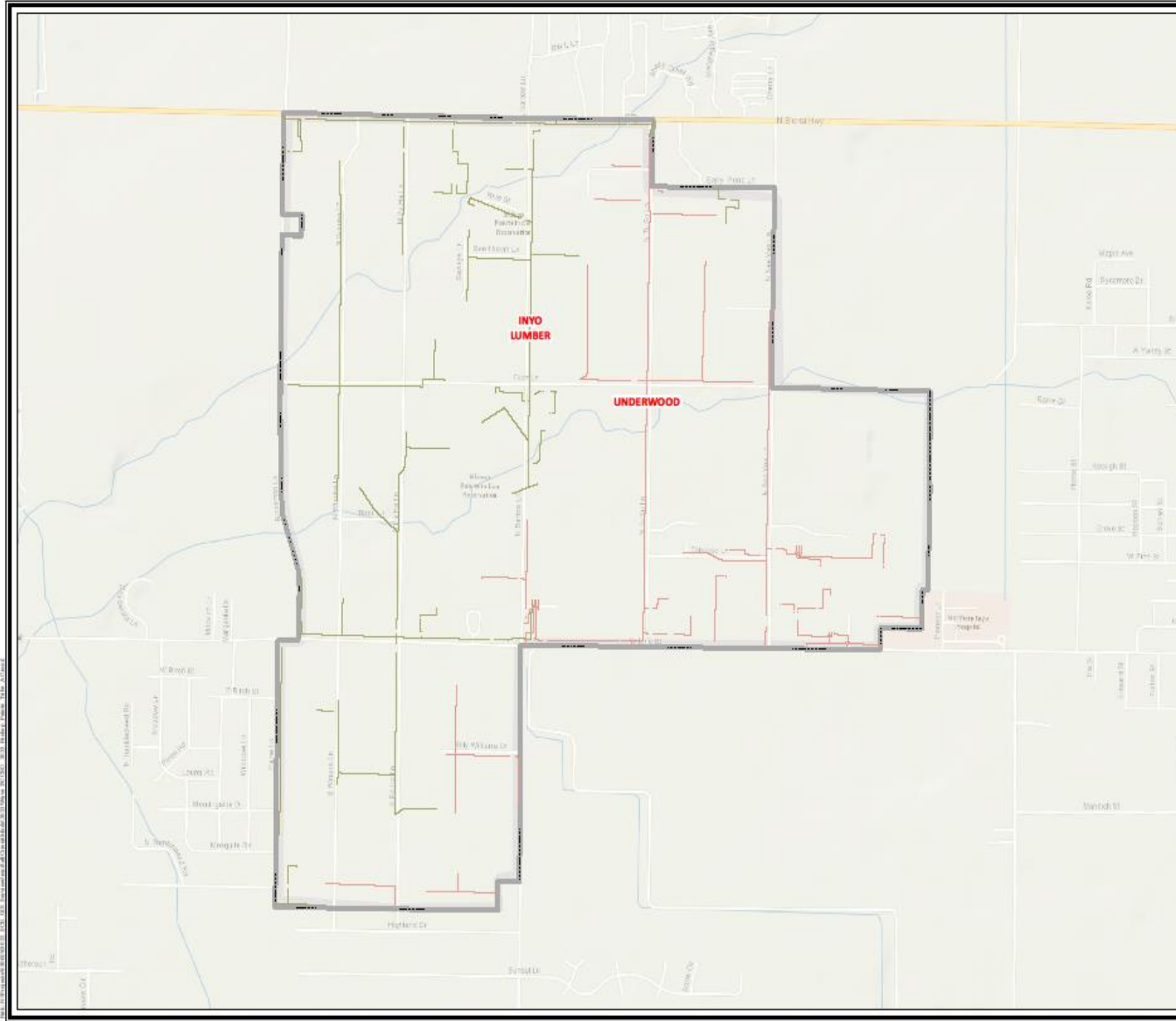
2022 SAIFI Outage Causes for Bishop Paiute Tribe



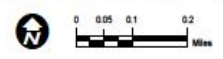
SAIFI = the number of times the average customer is interrupted by “sustained” outages each year.

**Bishop Paiute Tribe
2023
All Distribution Circuits**

PSPS Circuit
 — INYO LUMBER
 — UNDERWOOD



Disclaimer: This report is intended solely for informational purposes. The information included is reflective as of March 1, 2023 and is subject to change without further notice.

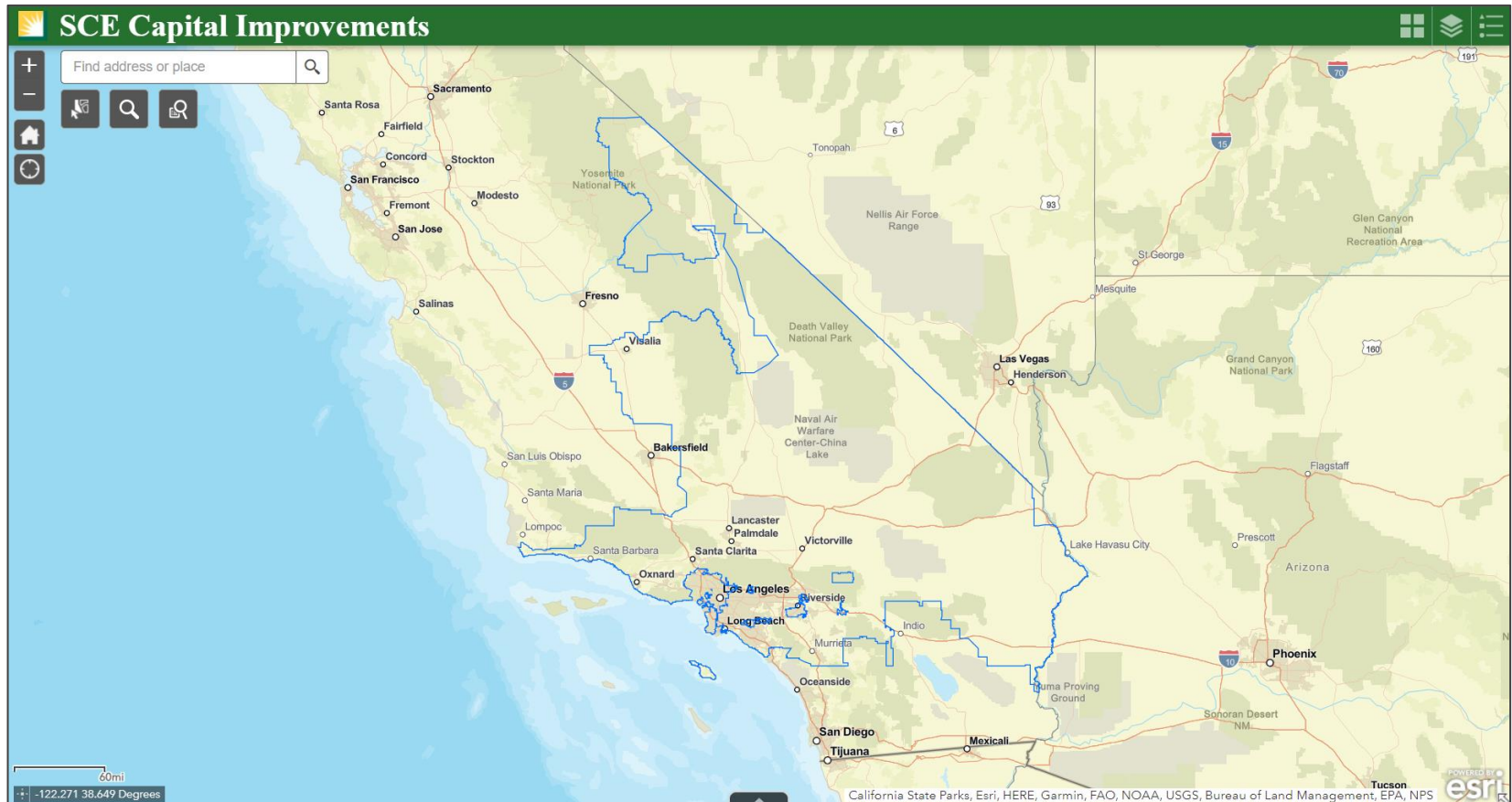


Date: 3/9/23
 File Name: CGRO_2023_Bishop_Paiute_Tribal_AC.mxd
 Created By:
 Geospatial Analysis | Central Field Service
Information presented on this map is for informational purposes only. It is not intended to be used for legal or financial purposes. The user assumes all responsibility for any use of this information. Bishop Paiute Tribe, 1500 N. Highway 150, Bishop, CA 93514. Bishop Paiute Tribe, 1500 N. Highway 150, Bishop, CA 93514. Bishop Paiute Tribe, 1500 N. Highway 150, Bishop, CA 93514.



Capital Improvement Map

The capital improvement map has transitioned to a virtual format via [SCE Capital Improvements](https://www.sce.com/CapitalImprovements) and can be accessed using the link provided or [sce.com/CapitalImprovements](https://www.sce.com/CapitalImprovements).



Back-up Slides

Reliability Histories of Circuits Serving Bishop Paiute Tribe

Updated through Dec 2022

Average Reliability of 2 Circuits Serving Bishop Paiute Tribe

	2019			2020			2021			1st Qtr 2022			2nd Qtr 2022			3rd Qtr 2022			4th Qtr 2022			2022		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
2 Circuits Serving Bishop Paiute Tribe -- Total																								
Customers: 4,051	153.1	1.6	0.4	53.4	0.8	-	186.6	2.2	0.4	28.7	0.2	1.3	32.3	0.4	0.1	63.7	0.2	-	0.8	0.0	-	125.6	0.9	1.4
3rd Party	25%	7%	-	14%	47%	-	0%	0%	0%	-	-	-	-	-	-	60%	51%	-	-	-	-	31%	13%	-
Equipment Failure	67%	32%	100%	26%	6%	-	16%	6%	38%	90%	65%	9%	1%	0%	100%	0%	1%	-	-	-	-	21%	17%	14%
Operation	6%	60%	-	0%	0%	-	0%	0%	-	10%	35%	3%	2%	1%	-	-	-	-	100%	100%	-	3%	10%	3%
Other	1%	0%	-	-	-	-	84%	94%	42%	-	-	11%	-	-	-	-	-	-	-	-	-	-	-	11%
Vegetation/Animal	0%	0%	-	-	-	-	-	-	-	-	-	77%	-	-	-	11%	30%	-	-	-	-	6%	8%	72%
Weather/Fire/Earthquake	0%	0%	-	59%	47%	-	-	-	19%	-	-	-	98%	99%	-	28%	19%	-	-	-	-	40%	53%	-
PSPS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SCE SYSTEMWIDE	178.0	1.0	1.4	201.3	1.1	1.4	179.8	1.1	1.6	33.6	0.2	0.4	31.2	0.3	0.4	40.0	0.3	0.3	26.4	0.3	0.3	131.1	1.1	1.4

Notes:

No outages are excluded from the metrics.

Outage Causes:

Other: e.g., patrolled but no cause could be found

Operations: e.g., urgent maintenance w/o 3-day notice to customers

3rd Party: e.g., balloons, car hit pole, dig-in

Vegetation/Animal: e.g., tree branch, rodent, or bird causing short circuit across conductors

PSPS: e.g., Public Safety Power Shutoff

SAIDI (minutes) = the cumulative amount of time the average customer is interrupted by “sustained” (longer than 5 minutes) outages.

SAIFI (interruptions) = the number of times the average customer is interrupted by “sustained” outages.

MAIFI (interruptions) = the number of times the average customer is interrupted by “momentary” (lasting 5 minutes or less) outages.

APPENDIX

Energy for What's AheadSM



Optional Capacity Study

- Customers may request a "**Load Capacity Study**" to determine if power is available at the requested location in an area as well as a timeframe for building new infrastructure, if needed, to meet the customers power needs.
- The cost for this study is **\$2,000**. SCE strives to complete these studies in 30 business days
- This study does **NOT** reserve power but is intended to provide direction to the customer for planning their projects
- Prior to requesting a Load Capacity Study, customer should use the GNA Layer in SCE's DRPEP- <https://drpep.sce.com/drpep/>
- Additional Fees may apply for projects deemed to be speculative