



2024 Annual Electric Reliability Results

November 17, 2025

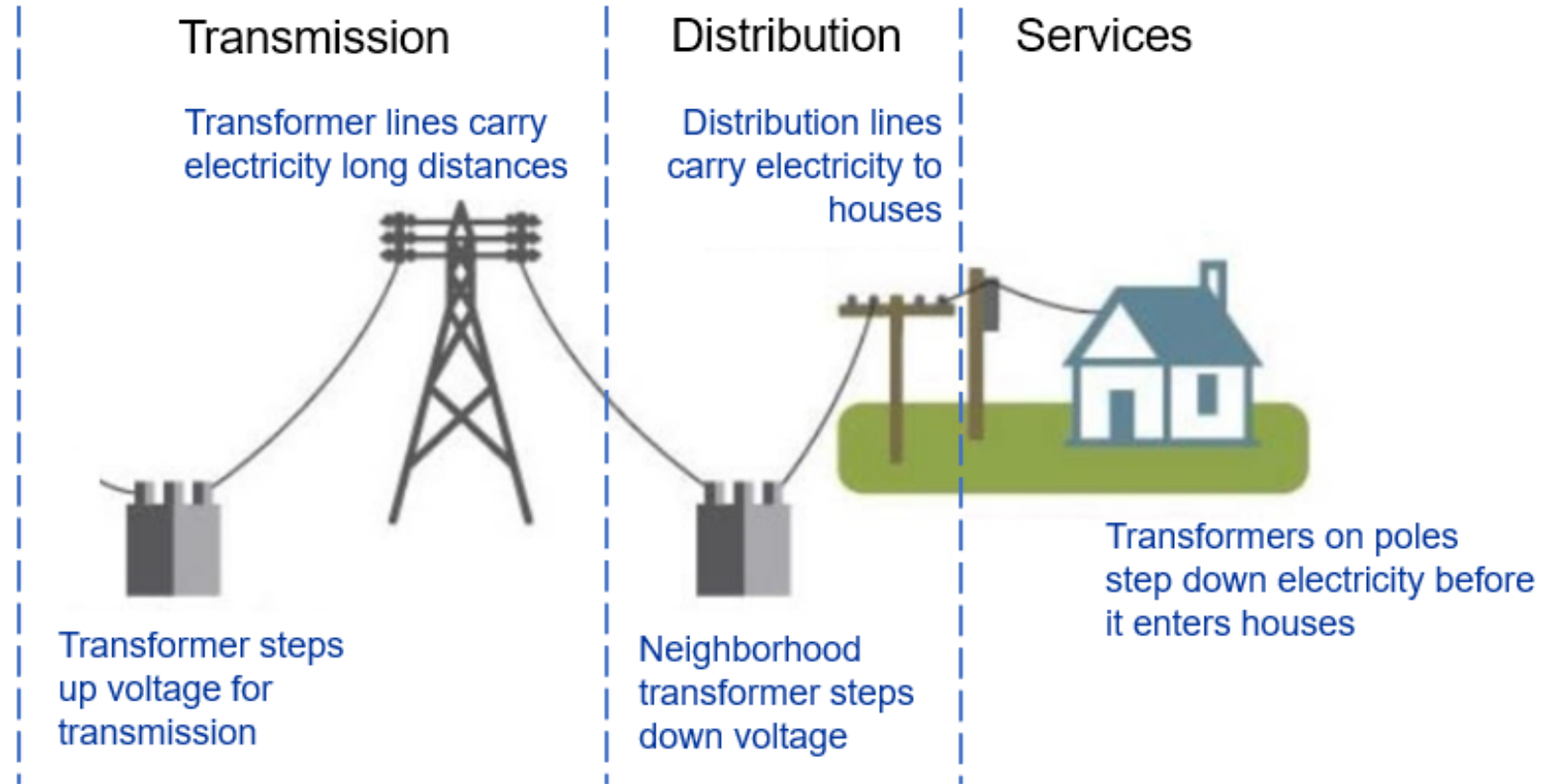


Agenda



- Background
 - Asset Classification
 - Reliability Goals
 - Reliability Metrics
 - Major Event Day
- Industry Leading Achievements
- Reliability Metric Comparison vs. Other California Utilities
- **SDG&E Annual Report Review**
- SDG&E Meteorology
- Public Safety Power Shutoff (PSPS) Protocols

Asset Classification



Source: Adapted from National Energy Education Development Project (public domain)

Reliability statistics are broken down by Transmission, Substation and Distribution

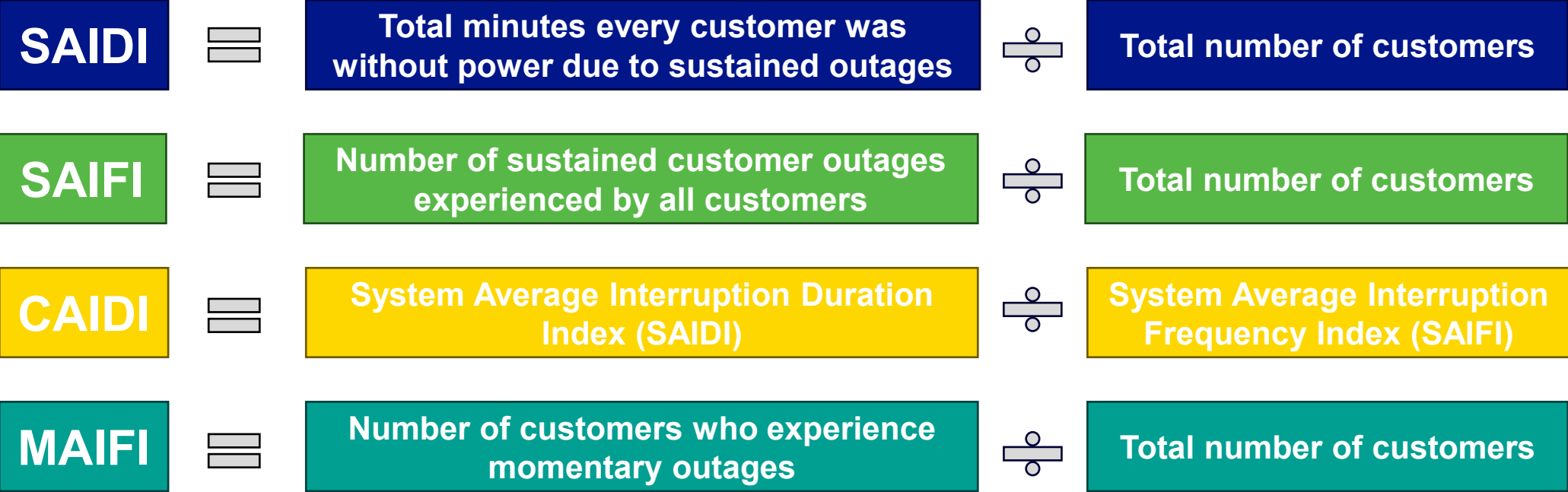
Reliability Goals

- Review all outages and causes, validate trends and develop mitigation plans for any new issues
- Improve reliability by:
 - Modernizing our infrastructure through strategic equipment upgrades, reducing:
 - ▶ Frequency
 - ▶ Scope
 - Enhancing our operational practices to reduce restoration times



Reliability Metrics

Four most common metrics in the electric utility industry as defined by IEEE 1366



Major Event Day

As defined in IEEE 1366

- A **Major Event Day** is a day in which the daily SAIDI exceeds a pre-determined threshold
- Days exceeding the Major Event Day threshold are days on which the energy delivery system experiences stresses beyond what is normally expected (such as severe weather)
- Activities on Major Event Days are separately analyzed



Awards and Recognition



- **PA Consulting ReliabilityOne® Awards**
 - Outstanding Reliability “Best in the West” for 20 consecutive years
 - “Best in the Nation” for 2018
 - “Best in the Nation” for 2020 (Shared with Florida Power & Light)
 - Outstanding Technology and Innovation for 2016, 2017 and 2019
 - Outstanding Grid Sustainability for 2020, 2022 and 2023

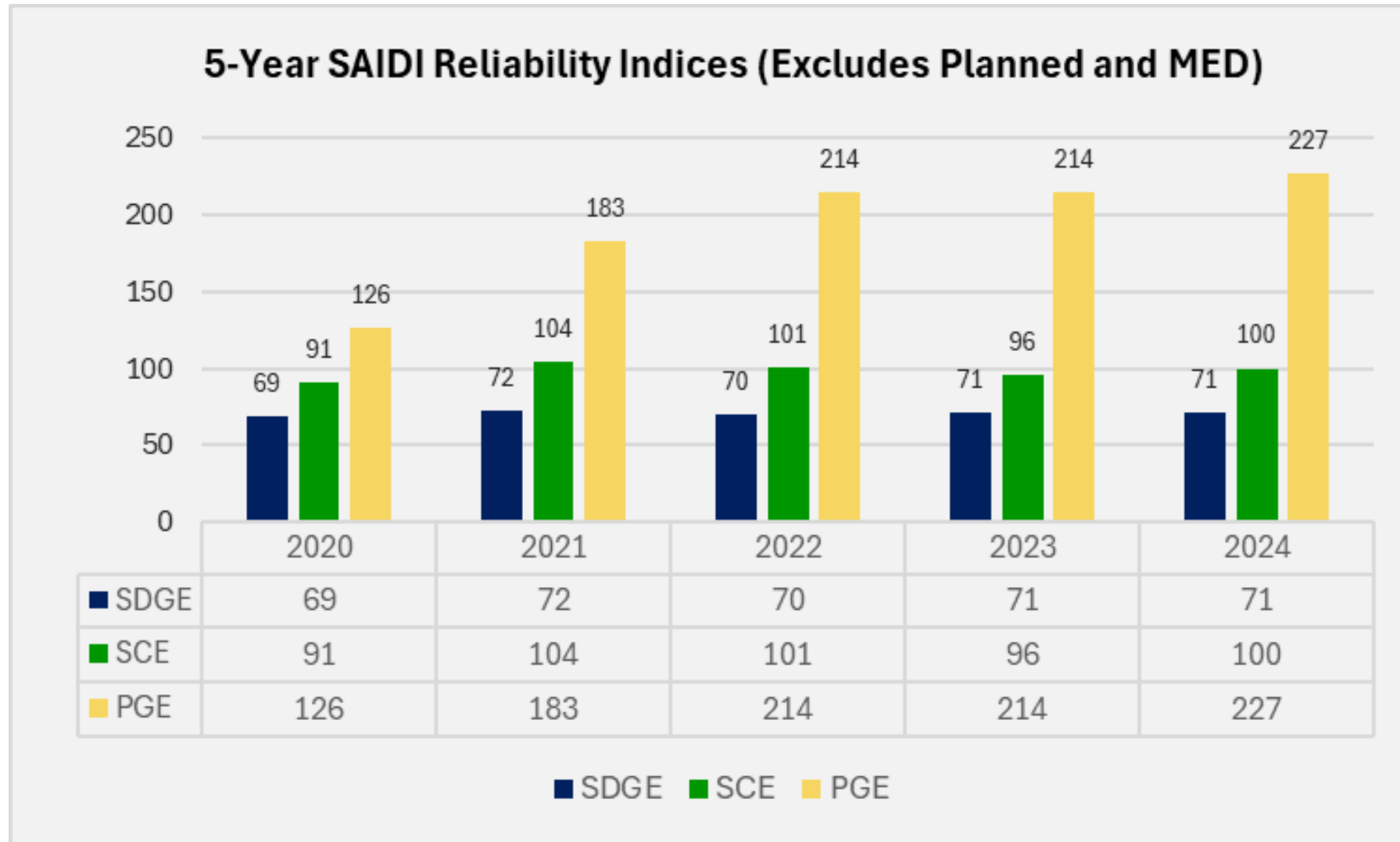


- **Edison Electric Institute – 2018 Edison Award**

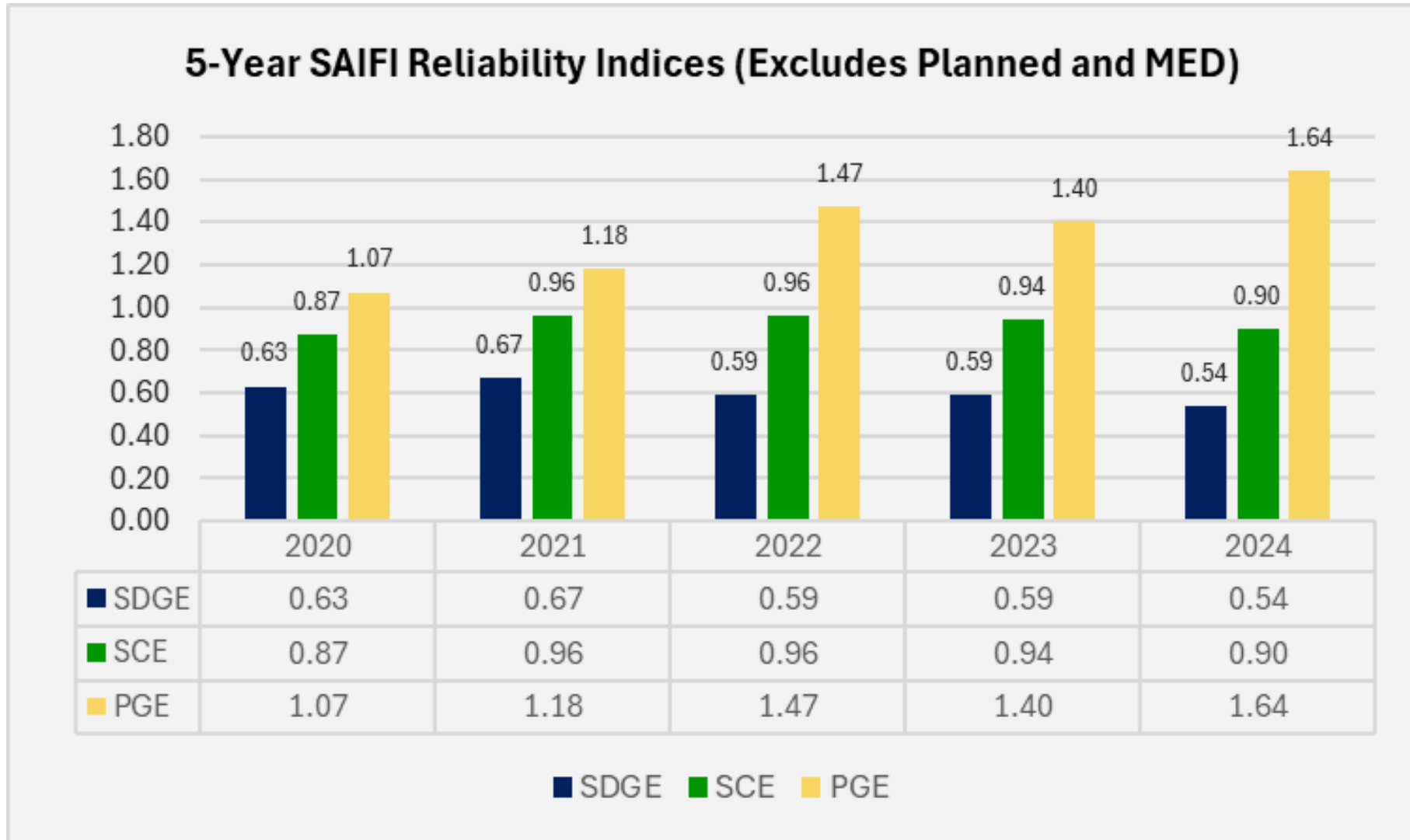
A blue-tinted landscape photograph showing a coastal area. In the foreground, there are dense, low-lying bushes and trees. In the middle ground, a wide river or estuary flows through a valley. To the right, a hillside is covered with residential buildings. In the background, the ocean is visible under a sky with scattered clouds. The overall scene is serene and scenic.

**How does SDG&E compare with
the other large California utilities?**

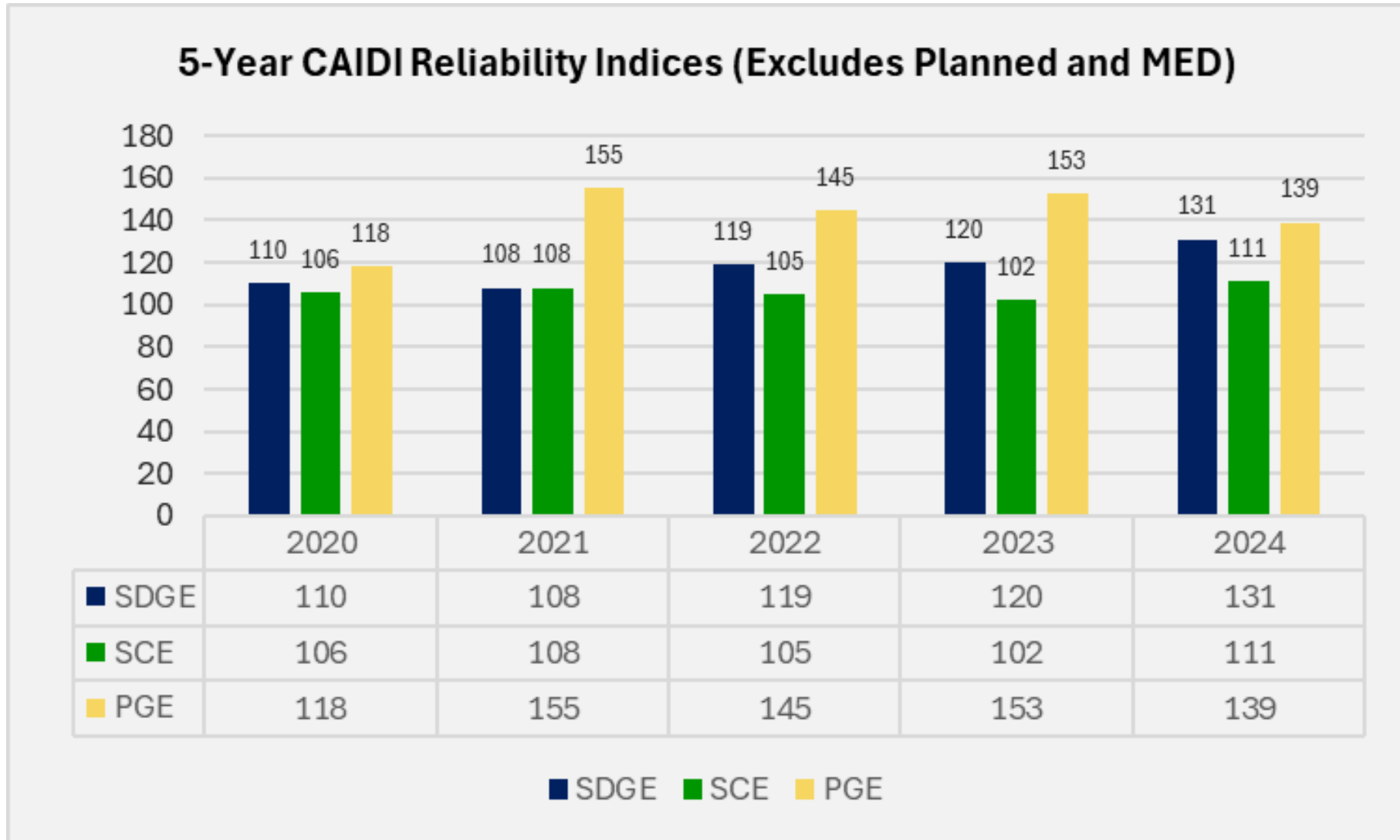
SAIDI Comparison



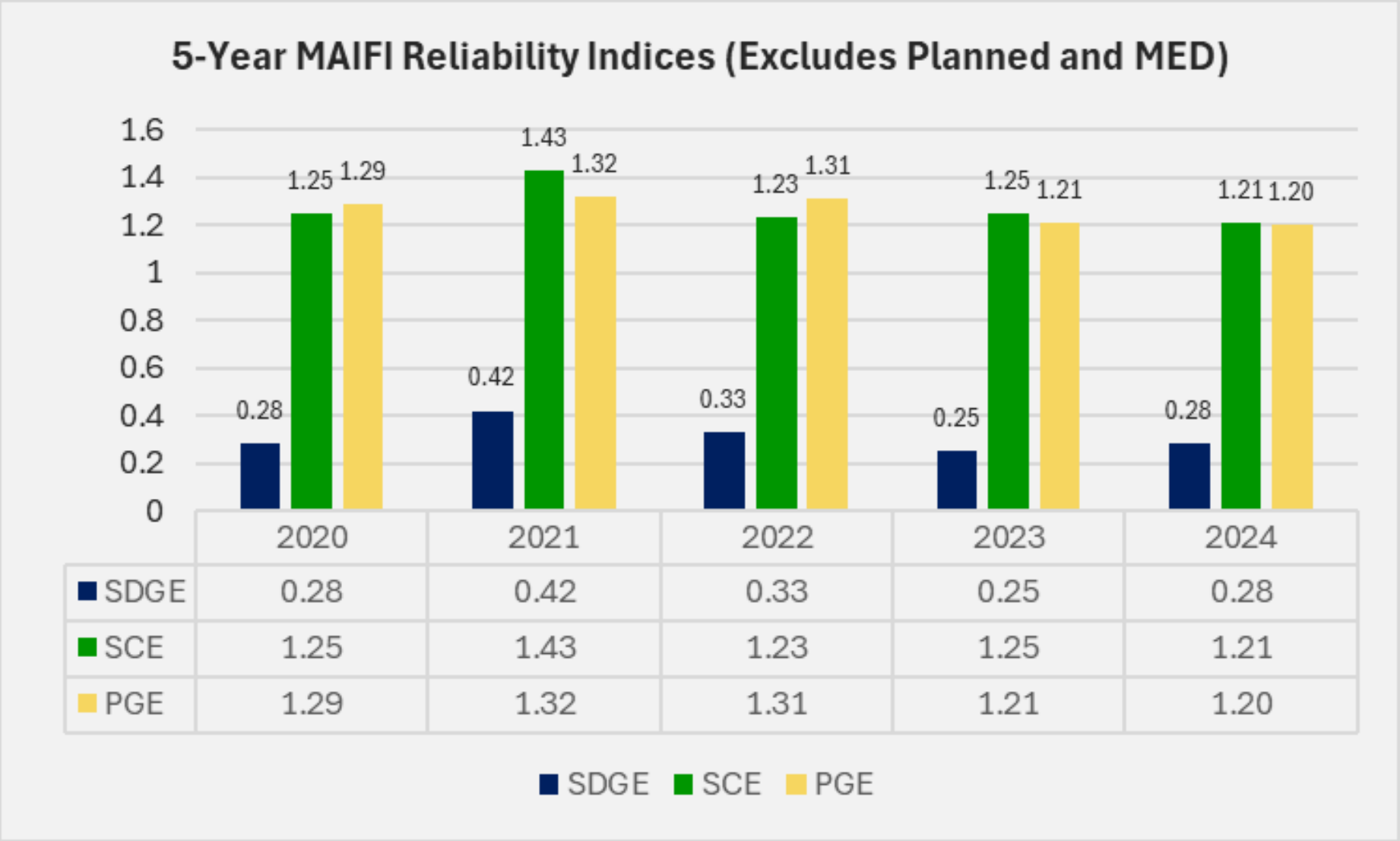
SAIFI Comparison



CAIDI Comparison



MAIFI Comparison



SDG&E's Annual Electric Reliability Report



- **Section 1** – System indices for the last 10 years
- **Section 2** – District reliability indices for the past 10 years including and excluding MED
- **Section 3** – System and District indices based on IEEE 1366 for the past 10 years including planned outages and including / excluding MED
- **Section 4** – Service territory map including divisions of districts
- **Section 5** – Top 1% of Worst Performing Circuits (WPC) excluding MED
- **Section 6** – Top 10 major unplanned power outage events within a reporting year
- **Section 7** – Summary List of MED per IEEE 1366
- **Section 8** – Historical 10 largest unplanned outage events for the past 10 years
- **Section 9** – Number of customer inquiries on reliability data and the number of days per response

Section 1 – System Indices for the Past 10 Years (Unplanned)

Tabular summaries and graphs for each of the 4 major indices; with and without MED exclusions

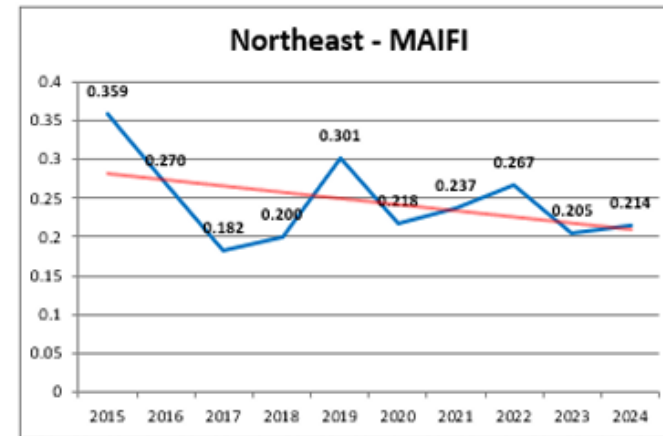
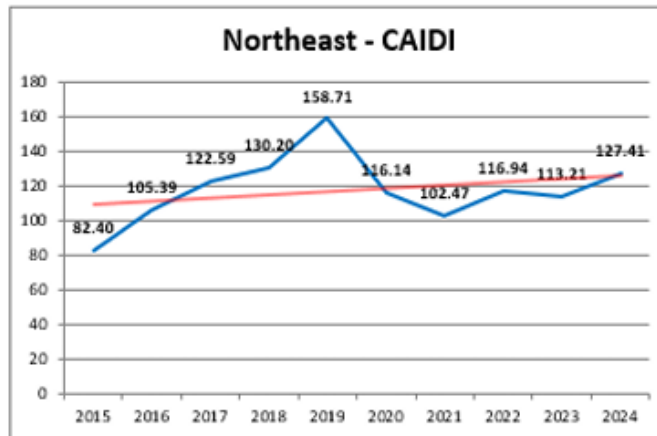
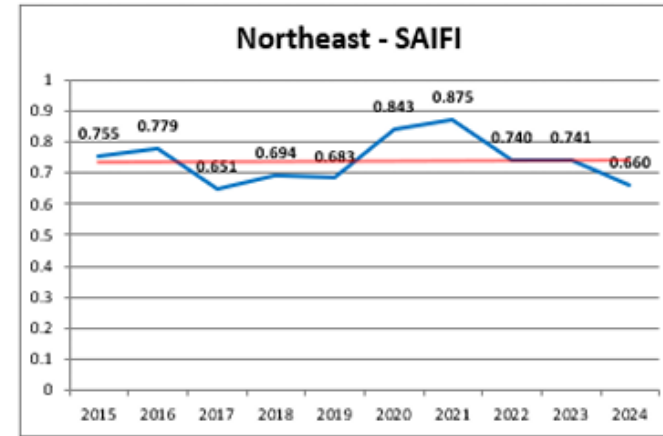
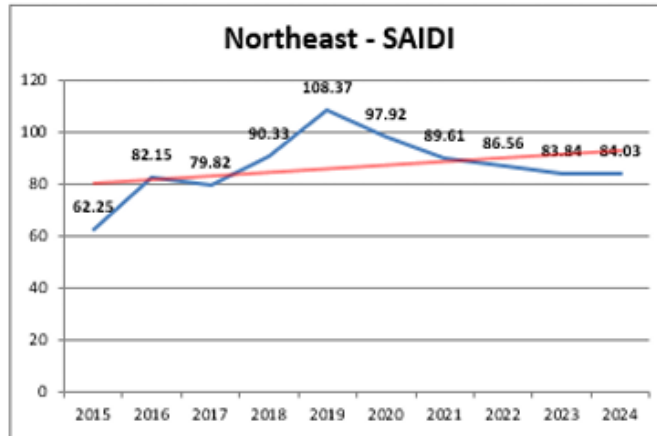
Table 1-1: System Indices

San Diego Gas & Electric Company System Reliability Data 2015 - 2024								
MED Included				MED Excluded				
Year	SAIDI	SAIFI	CAIDI	MAIFI	SAIDI	SAIFI	CAIDI	MAIFI
2015	58.11	0.530	109.68	0.347	57.92	0.526	110.09	0.347
2016	86.01	0.677	126.99	0.443	72.75	0.620	117.43	0.386
2017	117.49	0.585	200.87	0.344	64.51	0.512	125.92	0.311
2018	121.02	0.658	183.88	0.319	77.76	0.628	123.84	0.319
2019	122.96	0.639	192.38	0.299	68.64	0.596	115.23	0.299
2020	198.63	0.745	266.52	0.289	68.95	0.627	109.92	0.275
2021	76.93	0.670	114.84	0.421	71.64	0.665	107.66	0.421
2022	70.39	0.591	119.06	0.327	70.39	0.591	119.06	0.327
2023	70.59	0.587	120.18	0.252	70.59	0.587	120.18	0.252
2024	157.23	0.611	257.27	0.287	71.13	0.542	131.26	0.276

Section 2 – District Indices for the Past 10 Years (Unplanned)

Tabular summaries and graphs for each of the 4 major indices *by District*

District Reliability Indices (Excludes Planned, ISO and MED)

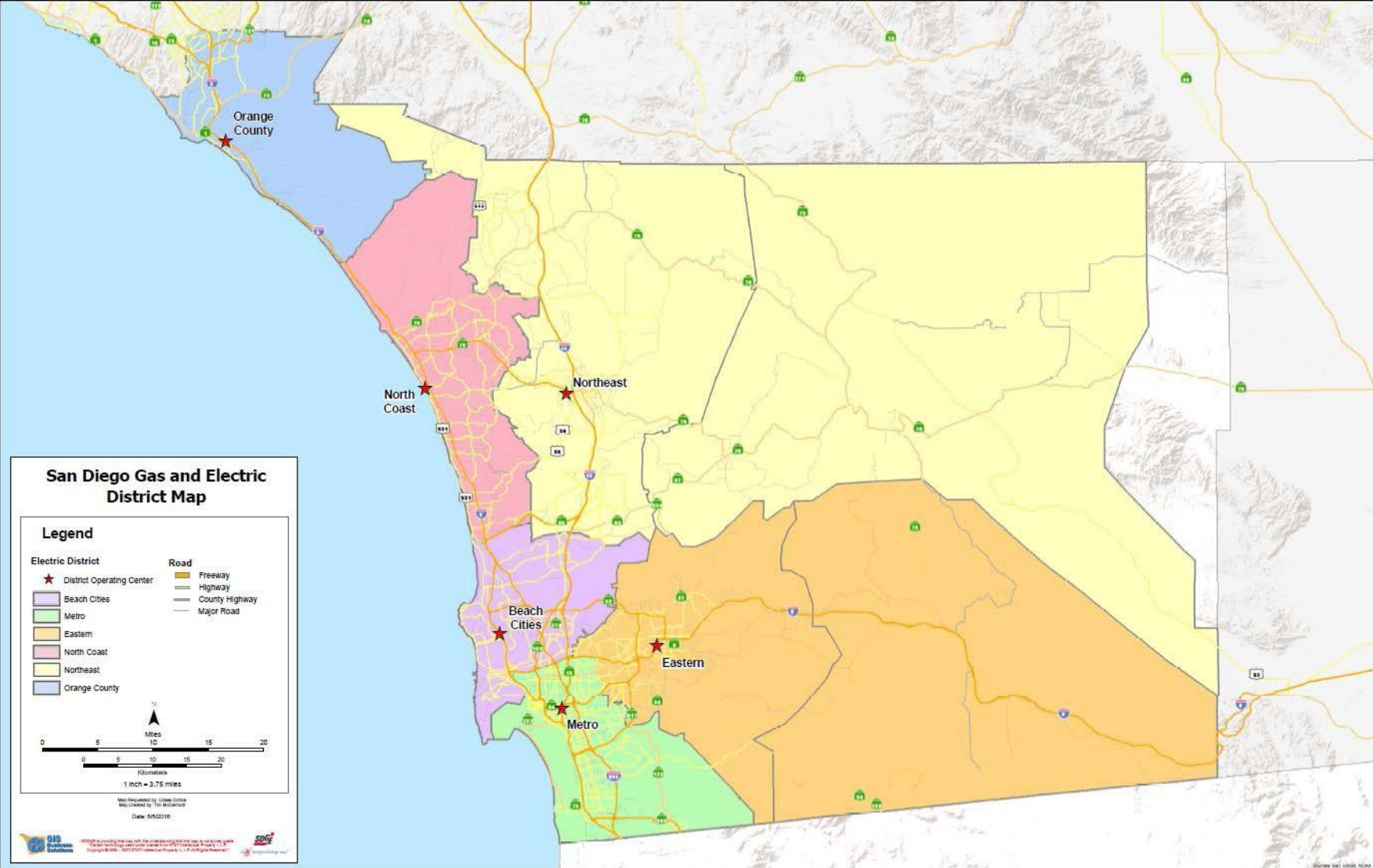


Section 3 – System & District Indices for the Past 10 Years

Indices represent combined Transmission, Substation and Distribution outage impacts at the system level for both unplanned and planned outages.

System Indices (2015 – 2024) Planned and Unplanned								
MED Included					MED Excluded			
Year	SAIDI	SAIFI	CAIDI	MAIFI	SAIDI	SAIFI	CAIDI	MAIFI
2015	100.59	0.661	152.16	0.370	100.40	0.657	152.72	0.370
2016	122.06	0.802	152.18	0.467	108.78	0.744	146.21	0.409
2017	164.71	0.744	221.32	0.368	111.57	0.671	166.22	0.335
2018	167.13	0.827	202.15	0.344	123.87	0.796	155.52	0.344
2019	166.42	0.805	206.71	0.343	111.72	0.760	146.99	0.343
2020	244.05	0.917	266.09	0.326	114.19	0.798	143.02	0.312
2021	149.14	0.918	162.39	0.445	143.85	0.914	157.40	0.445
2022	137.61	0.806	170.73	0.339	137.61	0.806	170.73	0.339
2023	132.30	0.789	167.59	0.257	132.30	0.789	167.59	0.257
2024	221.84	0.813	272.77	0.294	135.72	0.744	182.44	0.283

Section 4 – Service Area Map



Section 5 – Top 1% of Worst Performing Circuits

Ranked by *Circuit SAIDI*

Table 5.1: 2024 Worst SAIDI Circuits List base upon 2023-2024 data (Excludes Planned, MED, and Load Curtailment)

Circuit	District	Circuit Customers	Substation Name	Circuit Miles	% OH	% UG	Annualized Feeder Outage Count	Annualized Total Circuit SAIDI **
*CTL1	Northeast	194	CRESTLINE	5.8	69%	31%	5	1629
171	Northeast	1,201	BORREGO	46.0	64%	36%	2	1494
441	Eastern	113	GLENCLIFF	30.6	84%	16%	4	1277
172	Northeast	994	BORREGO	58.5	67%	33%	4	1159
1215	Eastern	154	CRESTWOOD	23.9	97%	3%	3	1118
170	Northeast	605	BORREGO	52.1	68%	32%	2	1059
445	Eastern	959	BOULEVARD EAST	119.5	77%	23%	5	778
DV1	Eastern	171	DEHESA VALLEY	8.6	70%	30%	2	648
558	Orange County	1,251	TRABUCO	17.5	19%	81%	2	640
757	North Coast	807	BATIQUITOS	7.9	0%	100%	1	607

* *Circuit appeared for three consecutive years in the Worst Performance list*

** *Circuit SAIDI represents the two-year average (2023-2024) of all outages: Mainline, Feeder, Backbone, and Branch*

Section 6 – Top 10 Major Unplanned Outages in 2024

Ranked by the number of customers impacted

Top 10 Major Unplanned Power Outage Events						
Rank	Outage Date	Cause	Location	Customer Impact	SAIDI	SAIFI
1	12/9/2024	Severe Weather / High Winds	EA, NE	40625	64.51	0.027
2	9/8/2024	Severe Heat	All Districts	37336	3.26	0.024
3	1/22/2024	Severe Weather / Rain Storm	BC, CM, NE	25992	5.22	0.017
4	10/13/2024	Vehicle Contact	BC, OC	21616	2.91	0.014
5	9/5/2024	Severe Heat	All Districts	18002	1.42	0.012
6	12/10/2024	Severe Weather / High Winds	EA, NE	11570	13.58	0.008
7	1/2/2024	Switch	NE	11559	0.64	0.008
8	2/8/2024	Tee Connector	CM, EA, NC, NE, OC	11554	2.44	0.008
9	1/22/2024	Vehicle Contact	CM	6537	0.61	0.004
10	10/19/2024	Lightning Arrestor	CM	5310	0.47	0.003

Section 7 – 2024 Major Event Days

Three Major Event Days in 2024

Date	Description	Location (District)	Number of Customers Out of Service
January 22	Severe Weather – Rainstorm	All Districts	45,663
December 9	Severe Weather – High Winds	CM, EA, NE	47,375
December 10	Severe Weather – High Winds	BC, EA, NC, NE	12,778

Section 8 – Historical 10 Largest Unplanned Outage Events

Largest unplanned outage events (by SAIDI) for 2015-2024

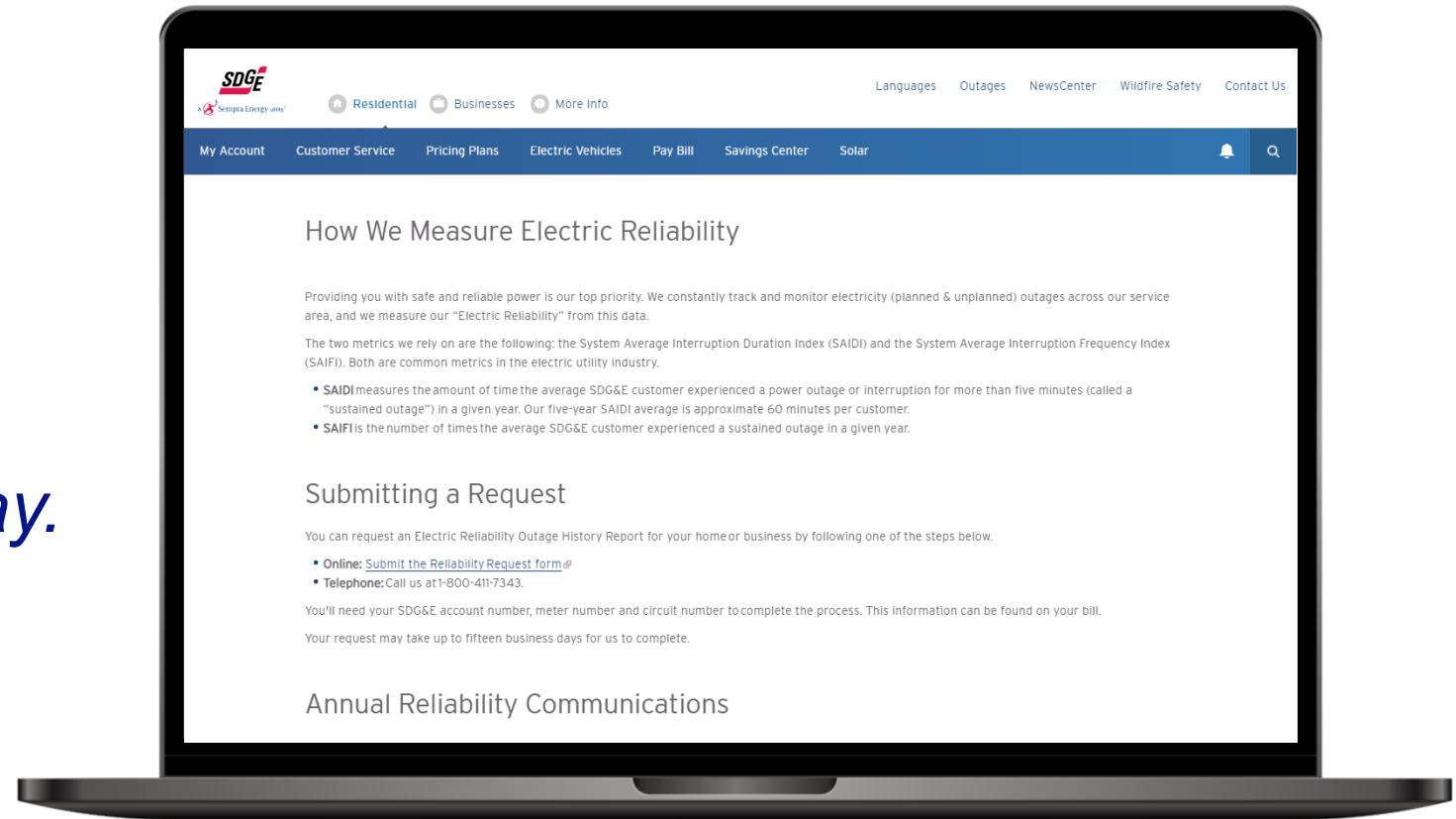
Rank	Date	SAIDI	SAIFI	Description
1	12/2/2020	81.94	0.047	High Winds / Red Flag Warning spanning multiple days
2	12/9/2024	64.51	0.027	Severe Weather / High Winds
3	10/20/2019	47.09	0.028	High Winds / Red Flag Warning spanning multiple days
4	11/11/2018	43.98	0.024	High Winds / Red Flag Warning spanning multiple days
5	12/7/2017	18.32	0.023	High Wind Event
6	12/7/2020	16.05	0.047	High Winds / Red Flag Warning spanning multiple days
7	12/10/2024	13.58	0.008	Severe Weather / High Winds
8	1/31/2016	13.35	0.061	El Nino Storm (1/31 – 2/1)
9	9/3/2020	13.35	0.006	Valley Fire
10	1/20/2017	11.48	0.030	Rainstorm Event

Section 9 – Website – Outage Inquiries

Find information or submit a request:

sdge.com/system-reliability

In 2024, the average response time was approximately 1 business day.



Summary

- Goals and metric definitions
- Reliability metric comparison vs. CA IOUs
- SDG&E's 2024 Annual Report available on
 - cpuc.ca.gov
 - sdge.com/system-reliability





SDG&E Meteorology



<https://sdgeweather.com/>

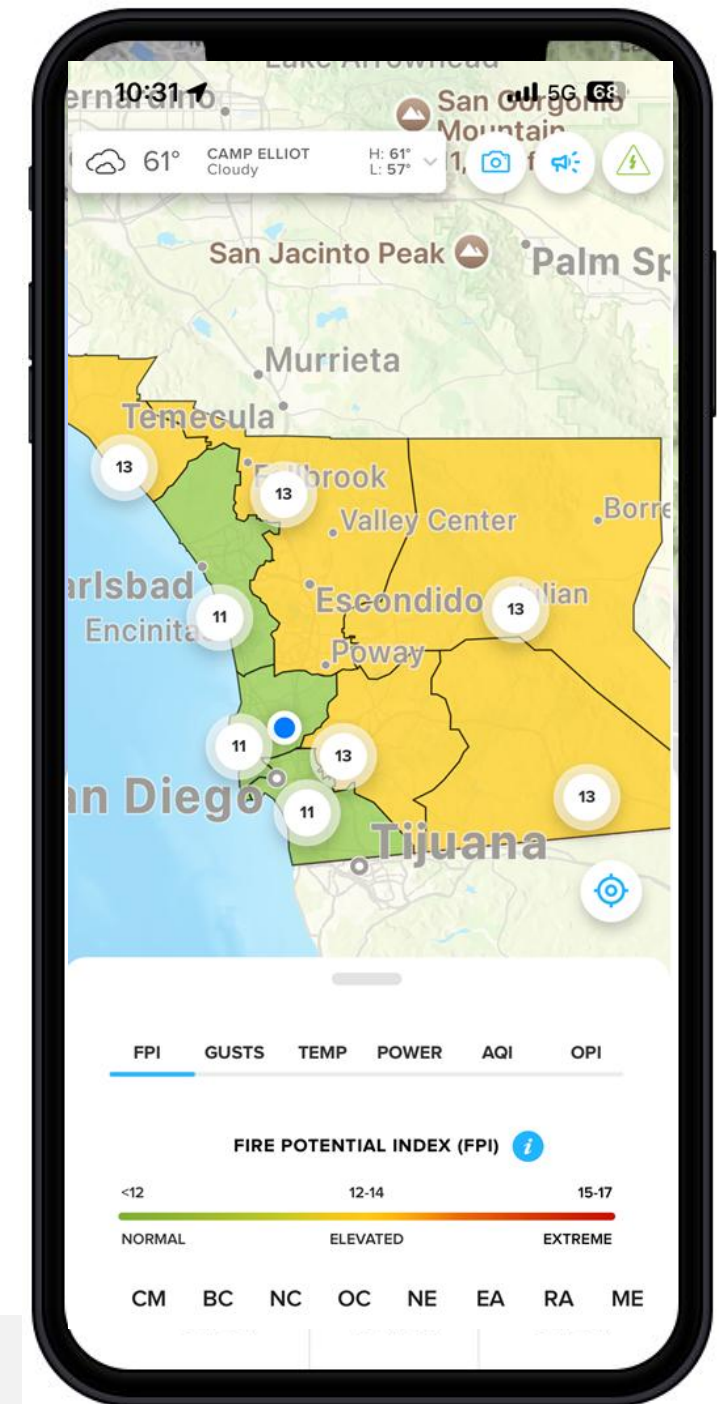
[WIFIRE Firemap](#)

SDG&E Weather App

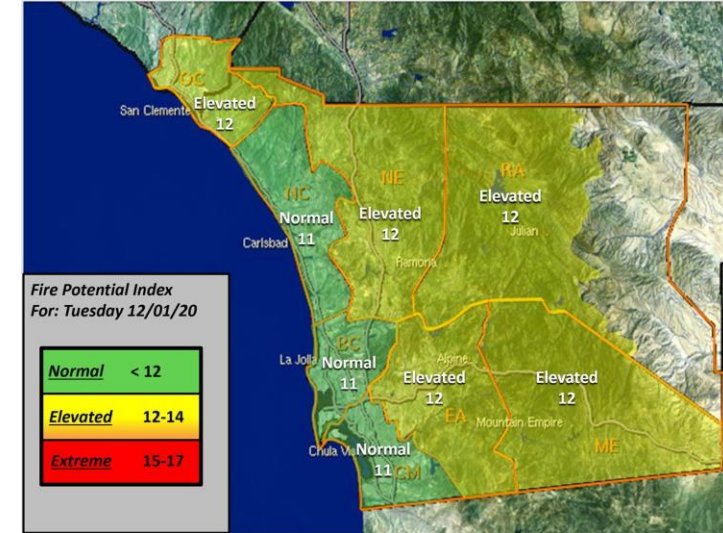
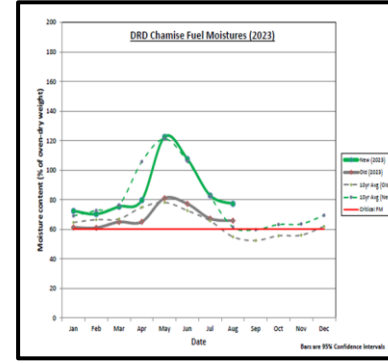
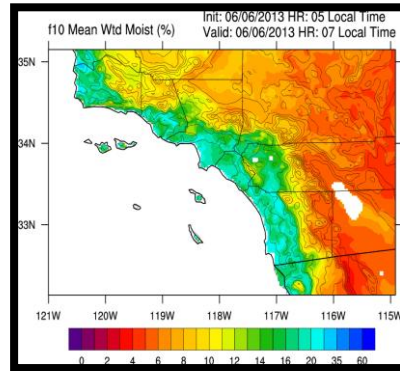
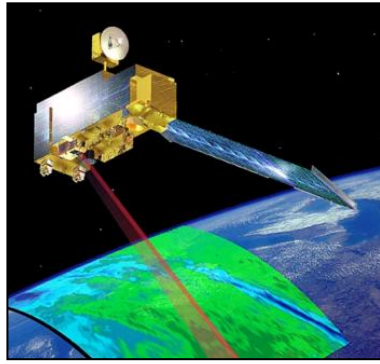
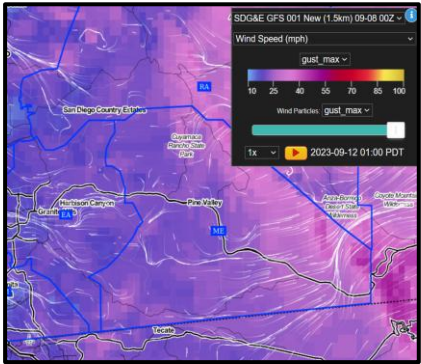


Publicly available situational awareness app with updated geo-location features and map-based visualizations:

- Follow-Me weather observation and forecast
- Map-based and tabular display of:
 - Potential Index (FPI)
 - Air Quality Index (AQI)
 - Outage Potential Index (OPI)
 - Wind gusts
 - Temperatures
 - Outages
 - AlertCA cameras
- Push notifications for hazardous weather
 - Red Flag Warnings (RFW)
 - Winter storm warnings
 - Thunderstorms, etc.



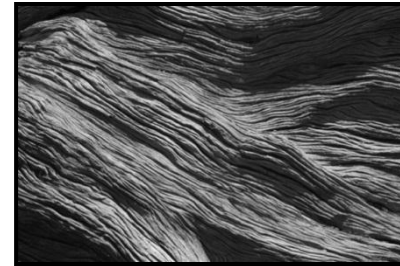
Fire Potential Index (FPI)



Weather
(wind speed & humidity)



Grasses



Dead Fuels



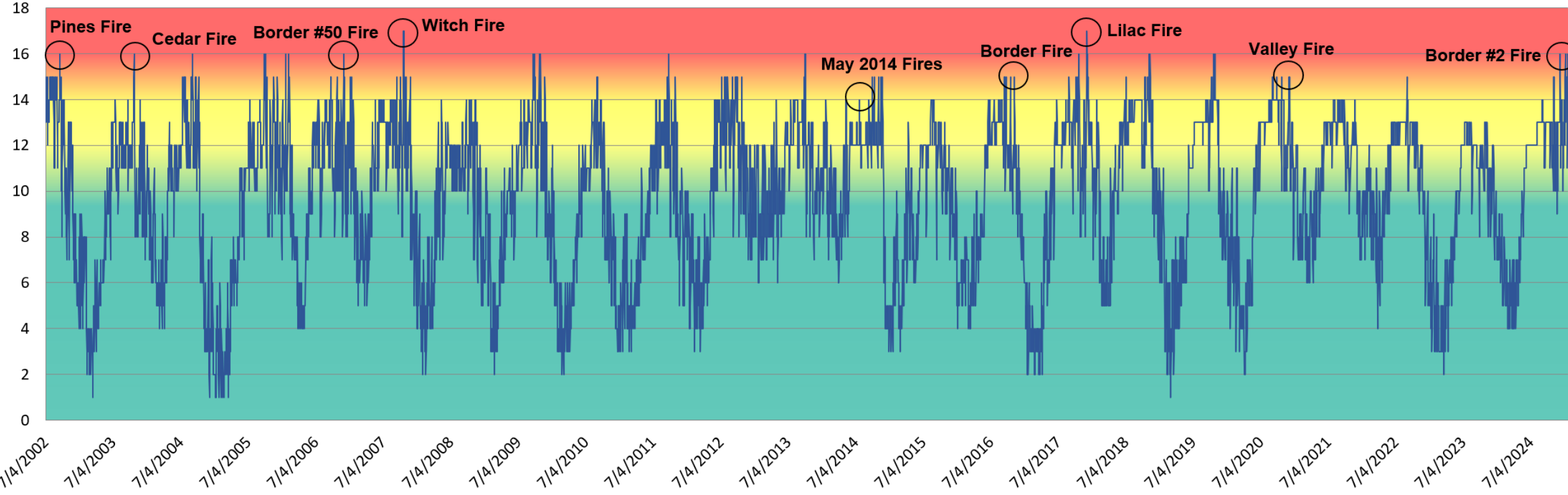
Live Fuels

Fuel Moisture

	Mon 11/30	Tue 12/01	Wed 12/02	Thu 12/03	Fri 12/04	Sat 12/05	Sun 12/06	Mon 12/07
ME	Elevated 12	Elevated 12	Elevated 14	Extreme 15	Extreme 15	Elevated 14	Elevated 14	Elevated 14
RA	Elevated 12	Elevated 12	Elevated 14	Extreme 15	Extreme 15	Elevated 14	Elevated 14	Elevated 14
EA	Elevated 12	Elevated 12	Elevated 14	Extreme 15	Extreme 15	Elevated 14	Elevated 14	Elevated 14
NE	Elevated 12	Elevated 12	Elevated 14	Extreme 15	Extreme 15	Elevated 14	Elevated 14	Elevated 14
OC	Elevated 12	Elevated 12	Elevated 13	Elevated 14	Elevated 14	Elevated 13	Elevated 13	Elevated 13
NC	Normal 11	Normal 11	Elevated 12	Elevated 14	Elevated 14	Elevated 13	Elevated 13	Elevated 13
BC	Normal 11	Normal 11	Elevated 12	Elevated 12	Elevated 12	Elevated 12	Elevated 12	Elevated 12
CM	Normal 11	Normal 11	Elevated 12	Elevated 12	Elevated 12	Elevated 12	Elevated 12	Elevated 12

Scale: 1 - 17

Fire Potential Index (2002-Present)



January 2025 RFWs & PSPSs

The driest start to the water year in San Diego's 174 history coupled with multiple high wind events resulted in extreme wildfire conditions on 11 separate days spread over 2½ weeks

Date	Mon 1/06	Tue 1/07	Wed 1/08	Thu 1/09	Fri 1/10	Sat 1/11	Sun 1/12	Mon 1/13	Tue 1/14	Wed 1/15	Thu 1/16	Fri 1/17	Sat 1/18	Sun 1/19	Mon 1/20	Tue 1/21	Wed 1/22	Thu 1/23	Fri 1/24	
RFW		[Red Box]					[Red Box]									[Red Box]				
Extrm FPI*		[Red Box]					[Red Box]		[Red Box]							[Red Box]				

Extreme FPI Red Flag Warning High Wind Warning 1/07-1/08

- Top 20 Avg Gusts: 57 mph
- Wind Records: 13
- Peak Gust: 71 mph
- 95% Stations: 172
- 99% Stations: 83
- PSPS Cust Scope: 65,475
- PSPS Cust off: 7,267

Extreme FPI Red Flag Warning 1/09-1/10

- Top 20 Avg Gusts: 62 mph
- Wind Records: 3
- Peak Gust: 85 mph
- 95% Stations: 125
- 99% Stations: 49
- PSPS Cust Scope : 74,652
- PSPS Cust off: 10,274

Extreme FPI Red Flag Warning 1/11-1/12

- Top 20 Avg Gusts: 38 mph
- Wind Records: 0
- Peak Gust: 52 mph
- 95% Stations: 14
- 99% Stations: 0
- PSPS Cust Scope : 4,561
- PSPS Cust off: 0

Extreme FPI Red Flag Warning 1/13-1/15

- Top 20 Avg Gusts: 55 mph
- Wind Records: 0
- Peak Gust: 74 mph
- 95% Stations: 133
- 99% Stations: 24
- PSPS Cust Scope : 54,937
- PSPS Cust off: 5,938

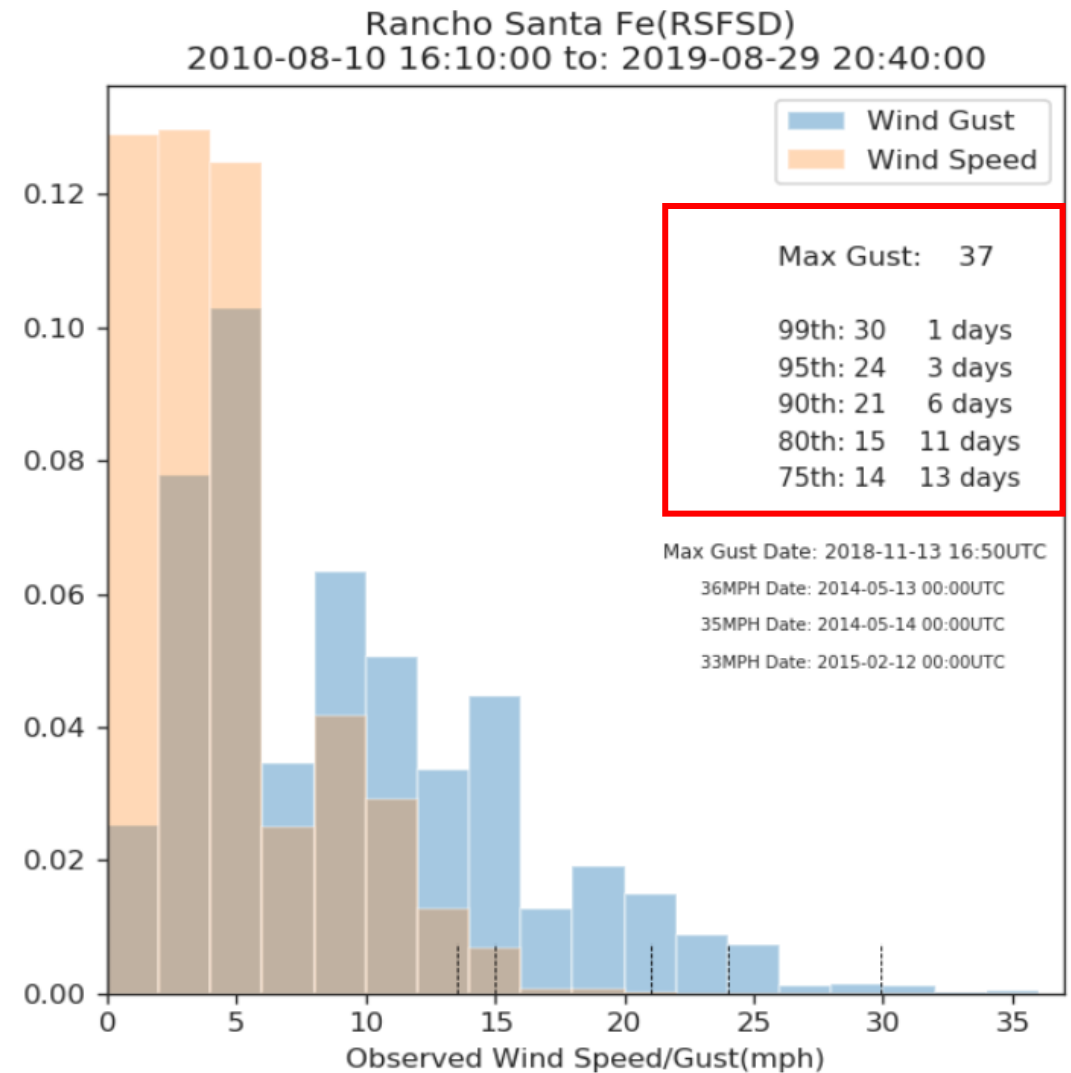
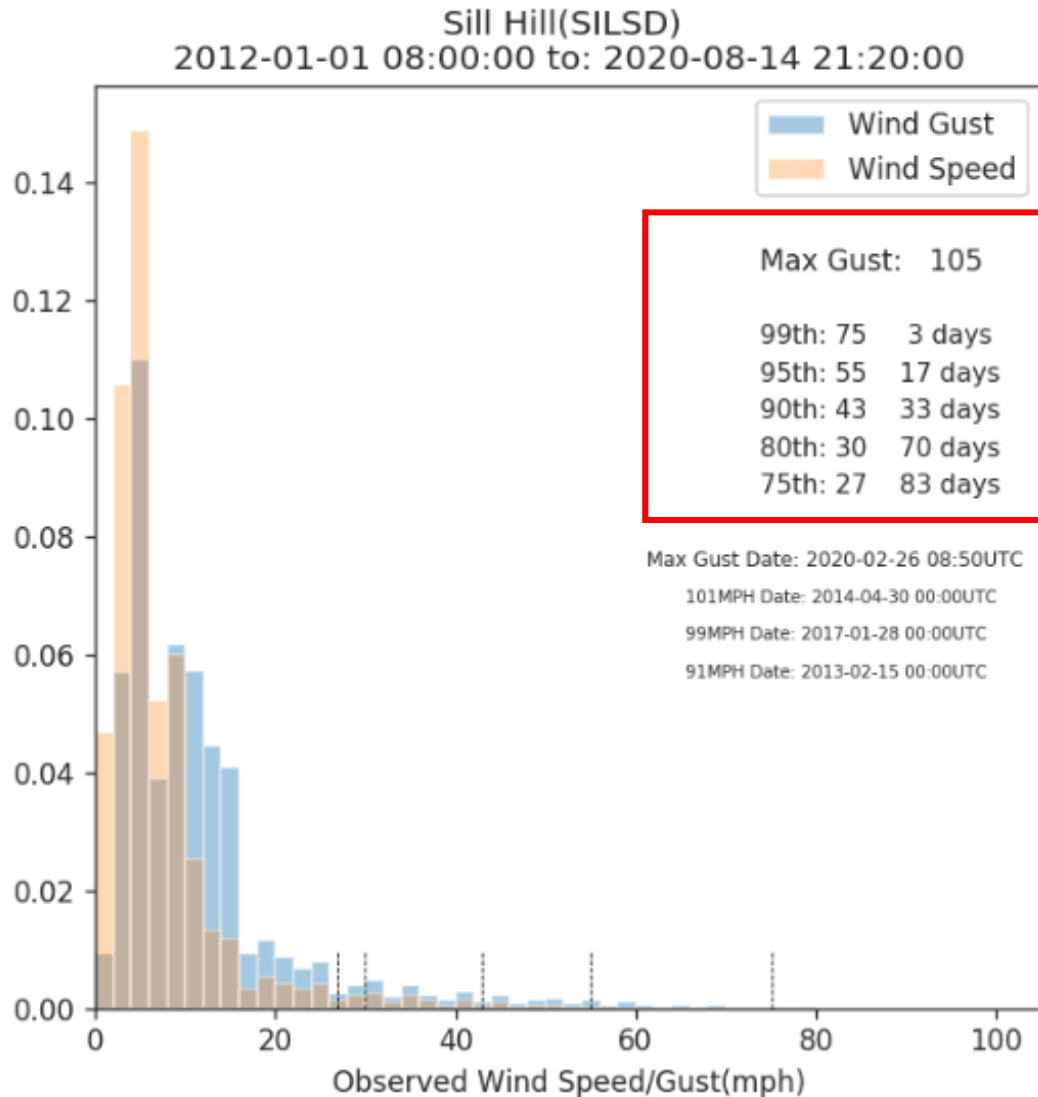
Extreme FPI Red Flag Warning High Wind Warning 1/20-1/21

- Top 20 Avg Gusts: 70 mph
- Wind Records: 30
- Peak Gust: 102 mph
- 95% Stations: 195
- 99% Stations: 116
- PSPS Cust Scope : 83,609
- PSPS Cust off: 16,733

Extreme FPI Red Flag Warning High Wind Warning 1/22-1/23

- Top 20 Avg Gusts: 69 mph
- Wind Records: 16
- Peak Gust: 97 mph
- 95% Stations: 182
- 99% Stations: 127
- PSPS Cust Scope : 83,625
- PSPS Cust off: 20,460

Weather Station Statistics → De-Energization Thresholds



Automated Circuit Forecast → Areas Exceeding Thresholds

	A	B	C	D	E	F	G	H	I	J
1	SILSD	Sill Hill	66	23:00	84	23:00	79	0:00	35	23:00
2	CWSD	Crestwood	40	23:00	64	23:00	63	0:00	30	23:00
3	EWRSD	East Willows Rd	46	23:00	63	10:00	50	0:00	26	21:00
4	NDCSD	North Descanso	44	23:00	63	9:00	48	1:00	23	23:00
5	BMSSD	Buckman Springs	36	21:00	62	10:00	58	1:00	23	23:00
6	LPTSD	La Posta	34	23:00	62	22:00	55	0:00	28	23:00
7	SRHSD	Sunrise Hwy	35	22:00	61	10:00	49	0:00	17	22:00
8	BOCSD	Boulder Creek	48	23:00	61	23:00	59	0:00	23	23:00
9	LFRSD	Lucky Five Ranch	36	23:00	61	10:00	62	1:00	23	23:00
10	HOSSD	Hoskings Ranch	30	23:00	58	10:00	49	0:00	21	20:00
11	VGSD	Viejas Grade	45	23:00	57	11:00	45	0:00	23	23:00
12	CMNSD	Cameron	34	23:00	57	12:00	47	0:00	23	23:00
13	POTSD	Potrero	30	10:00	57	10:00	46	5:00	25	23:00
14	SHCSD	School House Canyon	36	22:00	57	10:00	58	1:00	27	22:00
15	AVYSD	Anderson Valley	31	23:00	56	10:00	44	0:00	23	22:00
16	SHVSD	Sherilton Valley	45	23:00	56	13:00	56	0:00	27	23:00
17	DYESD	Dye Mountain	36	22:00	56	10:00	47	5:00	23	21:00
18	RHSSD	Rancho Heights	42	21:00	55	11:00	42	0:00	14	21:00
19	CHHSD	Chihuahua Valley	27	22:00	55	12:00	19	8:00	23	23:00

station_level_daily_gusts_20221

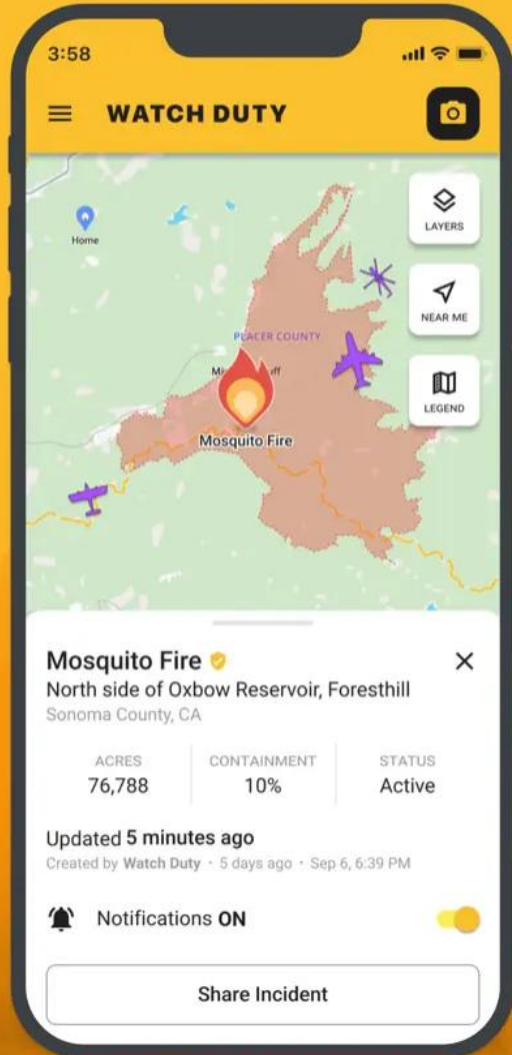




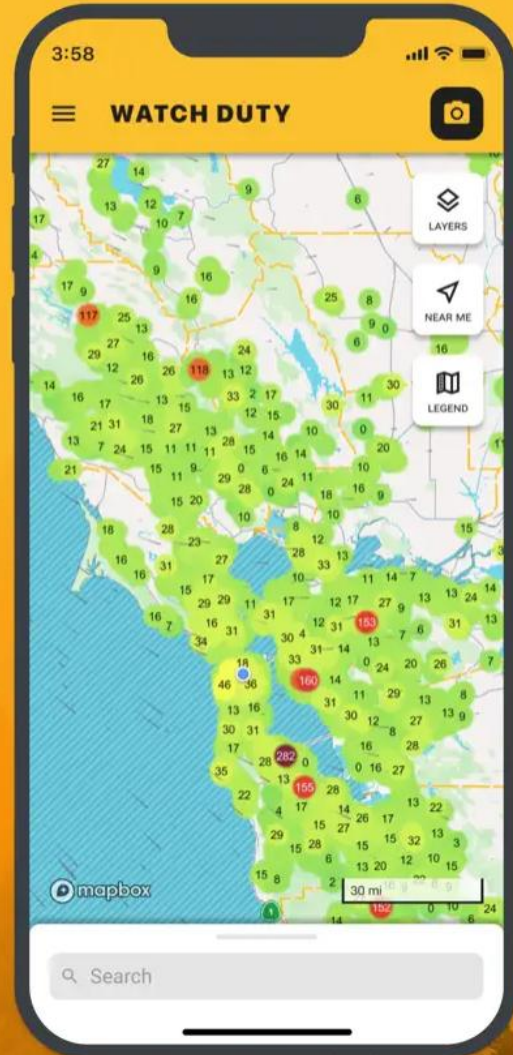
Alert California Camera Network

WATCH DUTY APP

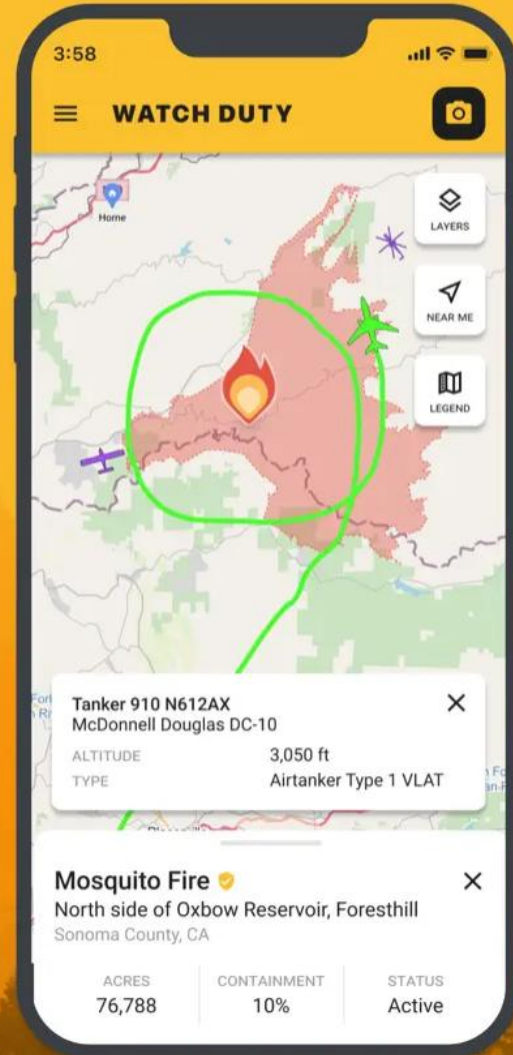
Active Fire Perimeters and Evacuation Orders



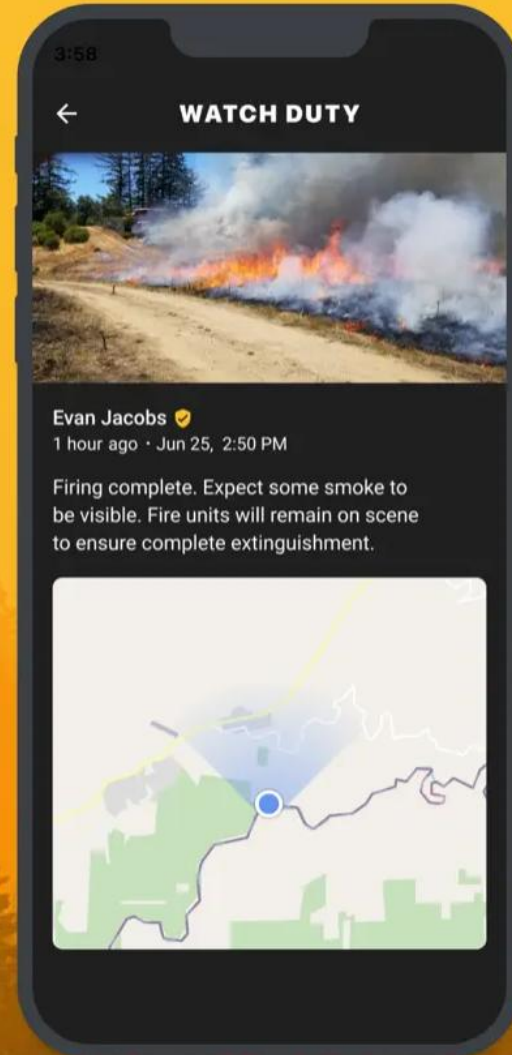
Wind Direction & Air Quality in One Place



Real-Time Fire Fighting Flight Tracker



Photos of Fire Conditions and Other Hazards





Public Safety Power Shutoff Protocols



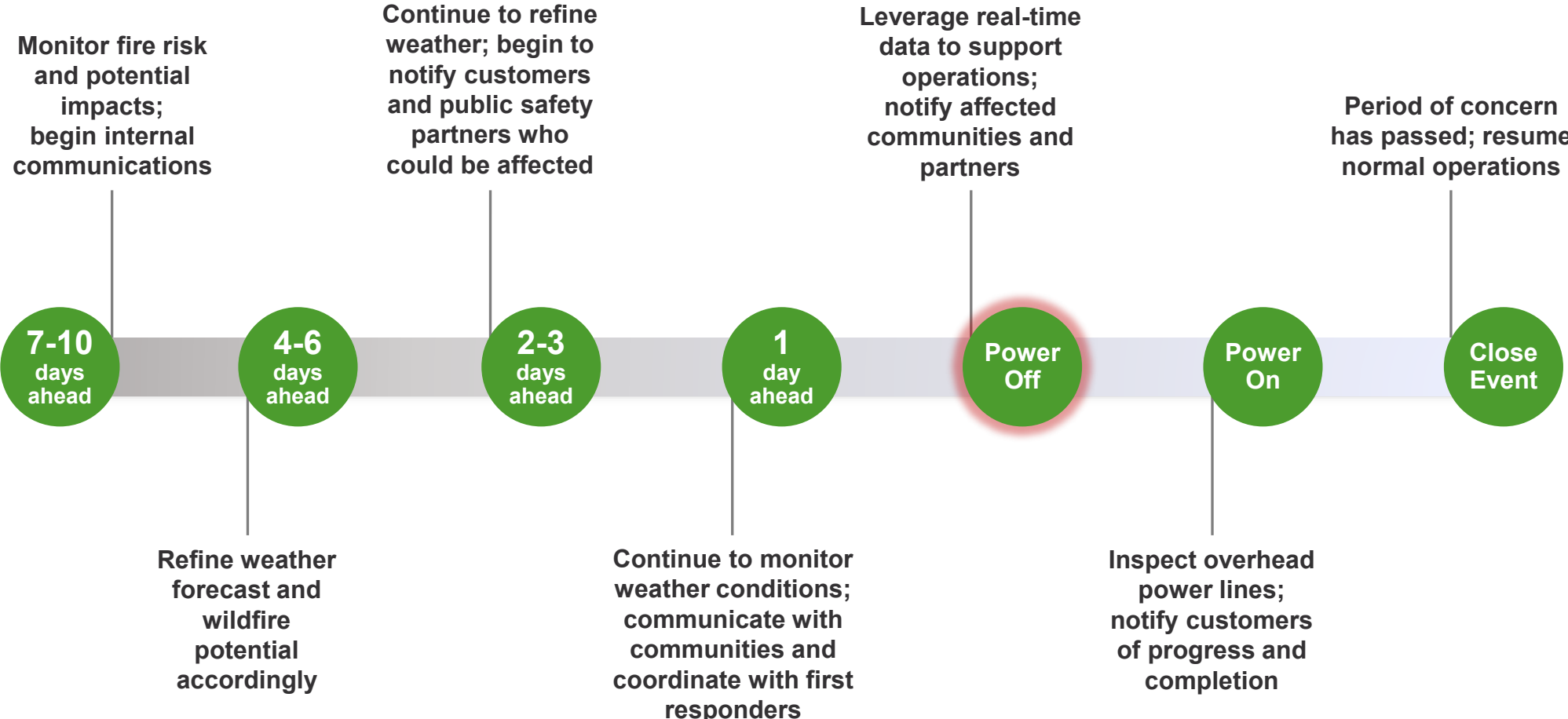
PSPS Program Activation Criteria

- Officer-in-Charge makes decision based on:
- Fire conditions
- Weather conditions
- Wildfire activity in the region
- Availability of firefighting resources
- Reports from emergency responders

	Mon 11/12	Tue 11/13	Wed 11/14	Thu 11/15	Fri 11/16	Sat 11/17	Sun 11/18
ME	Extreme 16	Extreme 16	Extreme 15	Elevated 14	Elevated 14	Elevated 13	Elevated 13
RA	Extreme 16	Extreme 16	Extreme 15	Elevated 14	Elevated 14	Elevated 13	Elevated 13
EA	Extreme 16	Extreme 16	Extreme 15	Elevated 14	Elevated 13	Elevated 13	Elevated 13
NE	Extreme 16	Extreme 16	Extreme 15	Elevated 14	Elevated 13	Elevated 13	Elevated 13
OC	Extreme 15	Extreme 15	Elevated 14	Elevated 14	Elevated 13	Elevated 12	Elevated 12
NC	Extreme 15	Extreme 15	Elevated 14	Elevated 13	Elevated 13	Elevated 12	Elevated 12
BC	Extreme 15	Extreme 15	Elevated 14	Elevated 13	Elevated 13	Elevated 12	Elevated 12
CM	Elevated 14	Elevated 14	Elevated 14	Elevated 13	Elevated 13	Elevated 12	Elevated 12

NO RATING	Winds are either not expected, will not contribute to significant fire activity.
MARGINAL	Upon ignition, fires may grow rapidly.
MODERATE	Upon ignition, fires will grow rapidly and will be difficult to control.
HIGH	Upon ignition, fires will grow very rapidly, will burn intensely, and will be very difficult to control.
EXTREME	Upon ignition, fires will have extreme growth, will burn very intensely, and will be uncontrollable.









PSPS Process



Notification Timeline



PUBLIC SAFETY POWER SHUTOFF PROCESS

7-10 days ahead	3-6 days ahead	2 days ahead	1 day ahead	Day of power shutoff	CRC open	Safety inspections	Power restored
 <p>When forecasts indicate the potential for fire weather, SDG&E monitors weather to assess potential impact.</p>	 <p>Fire weather forecasts are refined accordingly.</p>	 <p>Communication starts with customers affected by a possible Public Safety Power Shutoff including State, County, City, Critical Customers and Medical Baseline Customers.</p>	 <p>Continued monitoring, communications and coordination with Public Safety Partners and communities impacted by weather conditions.</p>	 <p>Notify all affected customers, including State, County, City, Critical Customers and Medical Baseline Customers.</p>	 <p>Inform customers and the public when Community Resource Centers are open.</p>	 <p>Power line safety inspections begin. Crews inspect power lines and equipment to confirm they are safe prior to restoring power.</p>	 <p>Once the high fire risk conditions have passed, SDG&E will start the restoration of power.</p>

TIMELINE OF NOTIFICATIONS (WHEN POSSIBLE)



Mobile Application



Functionality and Resources

Same functionality as web platform

Customizable push notifications

Follow communities

Subscribe to notifications for all hazards

Dark mode/light mode

Stay updated on all impacted communities



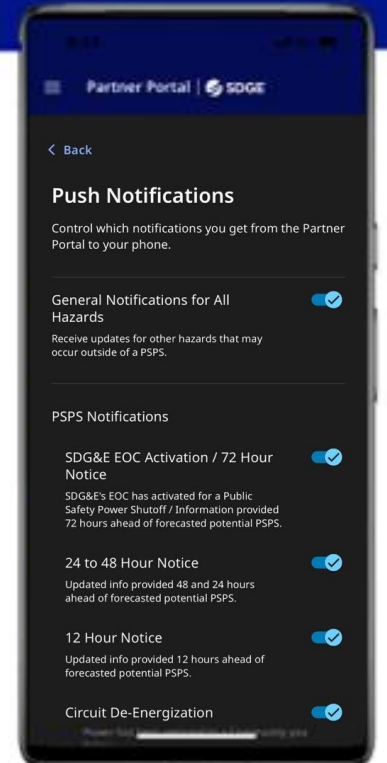
Track shutoff progress



Follow your communities for customized notifications



Modify your notification preferences





Thank You

Social Media

Connect with us on our social media channels



[X.com/sdge](https://x.com/sdge)



Facebook.com/SanDiegoGasandElectric



Instagram.com/sdge



YouTube.com/@SanDiegoGasElectric



LinkedIn.com/company/sdge