



29-01-2002

29-06-2023

Total Event

3947

Event Where Loss Countable



2228

56.45%

Event Where Loss None



1719

43.55%

Total Demand Loss(MV)



1.80M

Total Customer Affected



363.76M

Avg Hours of shortage per Event



37.58

Page



Home



NERC Region Analysis



Area Affected Analysis



Event Reason Analysis



Time Series Analysis



Advance Analysis

Filters

NERC Region

All

Event Type

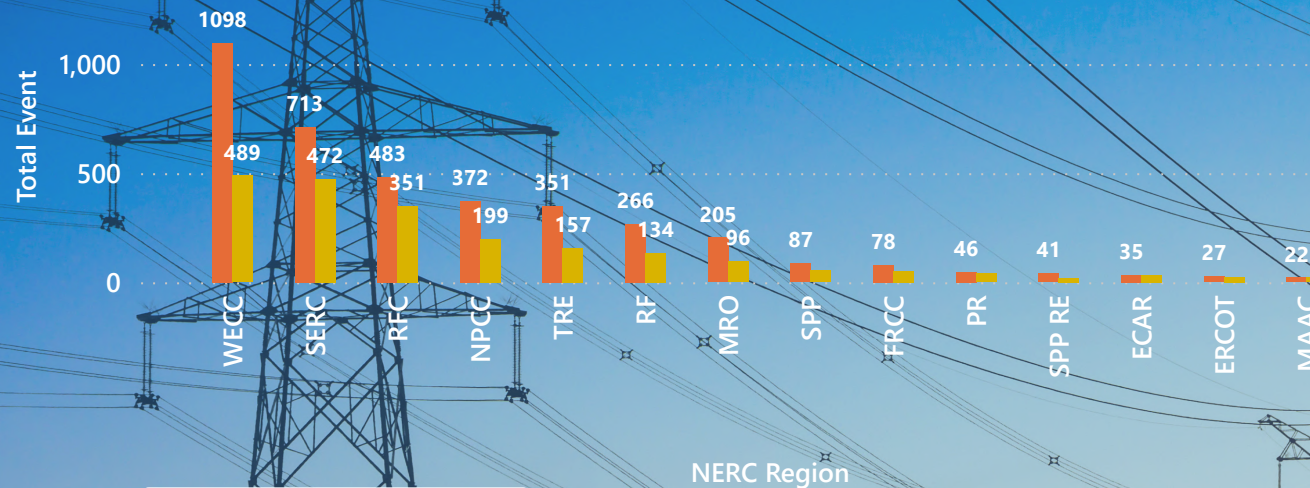
All

Area Affected

All

#Total Event and Event Where Loss Countable by NERC Region

● Total Event ● Event Where Loss Countable



The North American Electric Reliability Corporation (NERC) is a nonprofit corporation based in Atlanta, Georgia, and formed on March 28, 2006, as the successor to the North American Electric Reliability Council (also known as NERC). The original NERC was formed on June 1, 1968, by the electric utility industry to promote the reliability and adequacy of bulk power transmission in the electric utility systems of North America. NERC's mission states that it "is to assure the effective and efficient reduction of risks to the reliability and security of the grid".

- 1: Total events: The total number of events that occurred in the power grid from 2002 to 2023.
- 2: #Events where loss countable: The total number of events that resulted in a loss. This represents 56.45% of all events where loss happening.
- 3: #Events where loss none: The total number of events that resulted in no loss. This represents 43.55% of all events where loss none.

Total Event by Area Affected

Bubble Size Depends on Number Of Event





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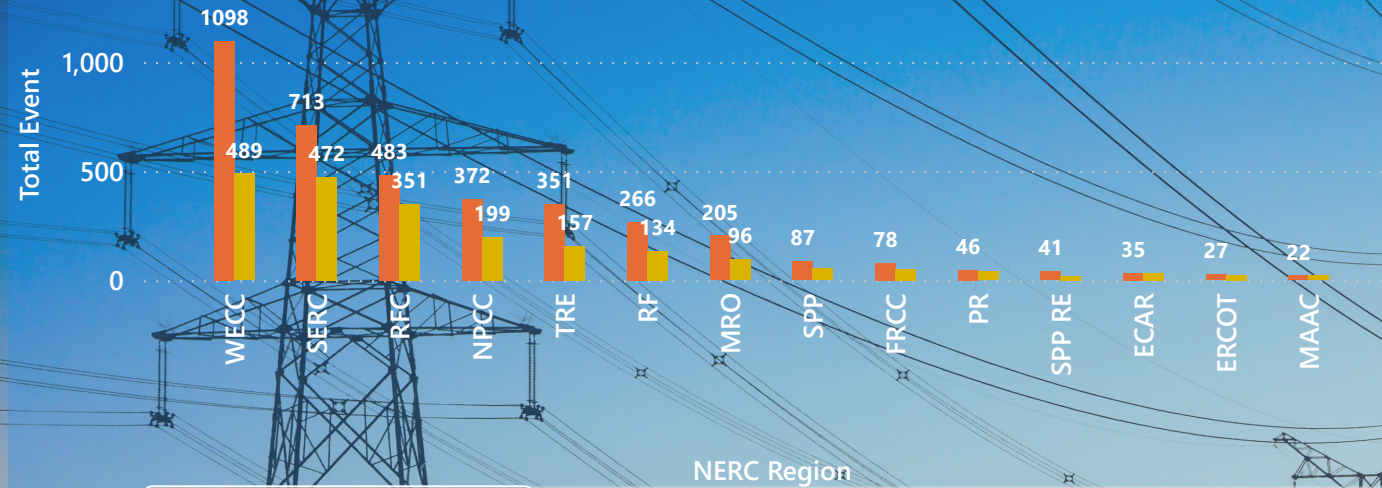
All

Area Affected

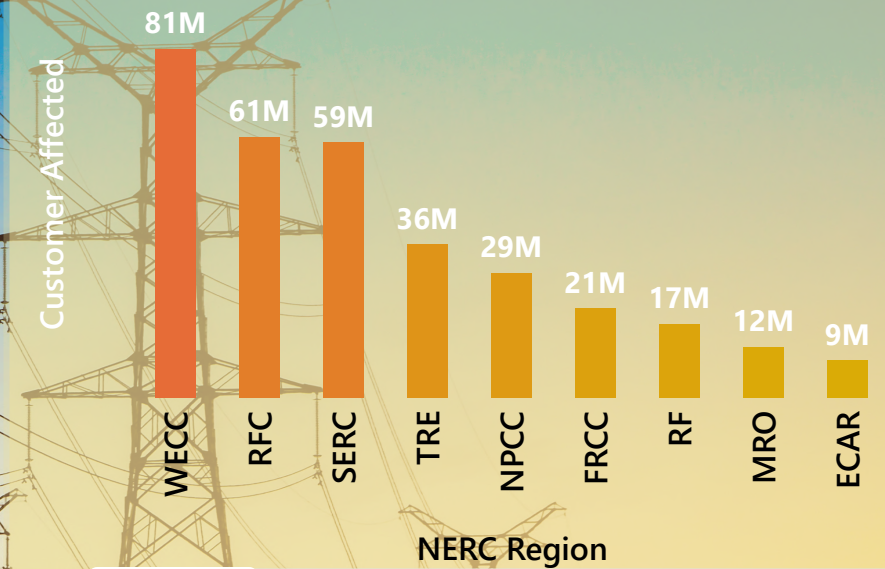
All

#Total Event and Event Where Loss Countable by NERC Region

● Total Event ● Event Where Loss Countable



#Total Customer Affected by NERC Region



#Total Demand Loss by NERC Region



NERC Region Analysis Summary

Insight 1: WECC Region has the most events

- The WECC region had the most events, with 1,098 events occurring between 2002 and 2023. This represents 22% of all events. Of these events, 489 resulted in a loss, which also represents 22% of all events with a loss.
- The WECC region also had the most customers affected, with around 81 million people affected. This represents 22.3% of all customers affected.

Insight 2: SERC Region has the most demand loss

- The SERC region had the most demand loss, with 495,000 megawatts lost. This represents 27% of all demand loss.



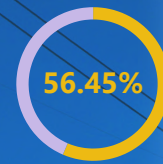
Total Event

3947

Event Where Loss Countable



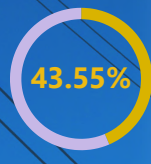
2228



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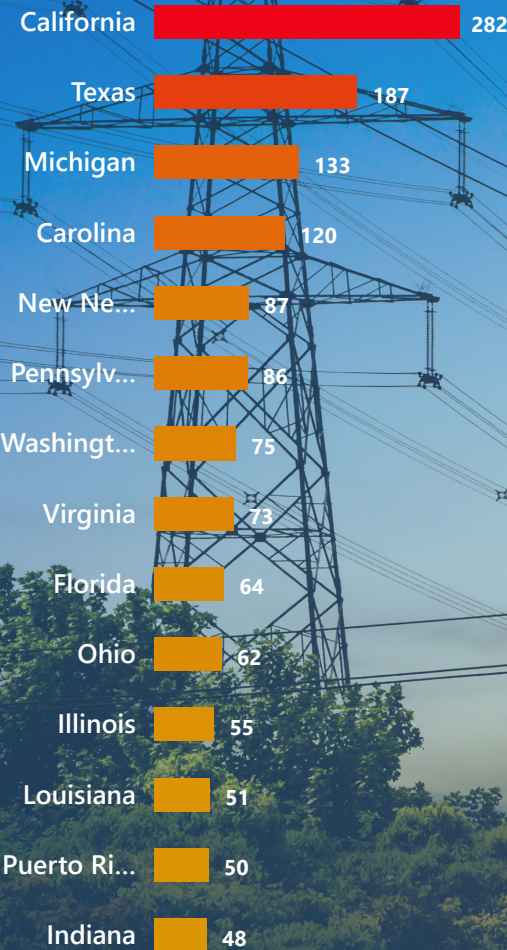
All

Area Affected

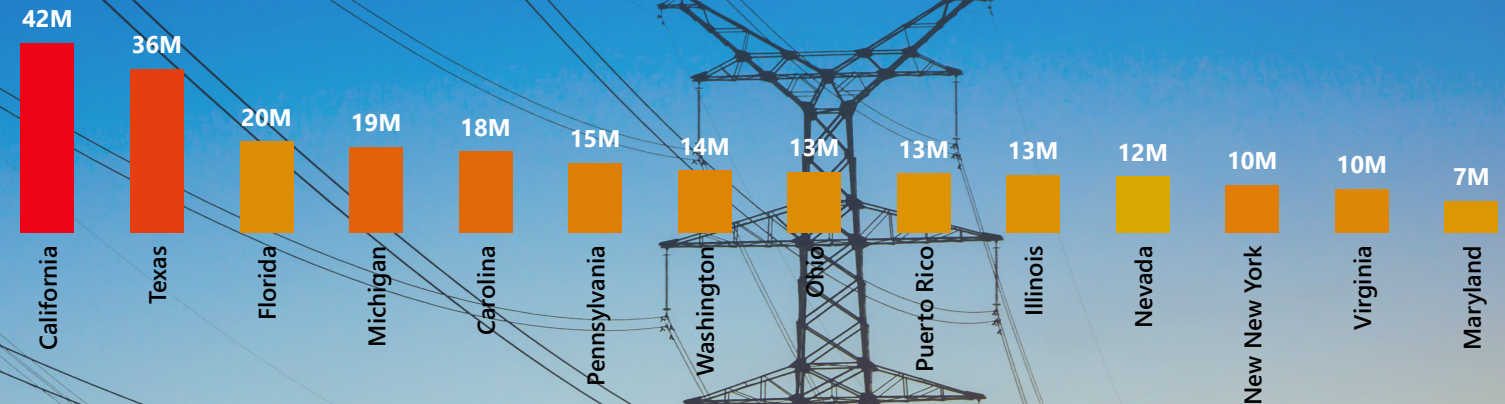
All

#Total Event by Area Affected

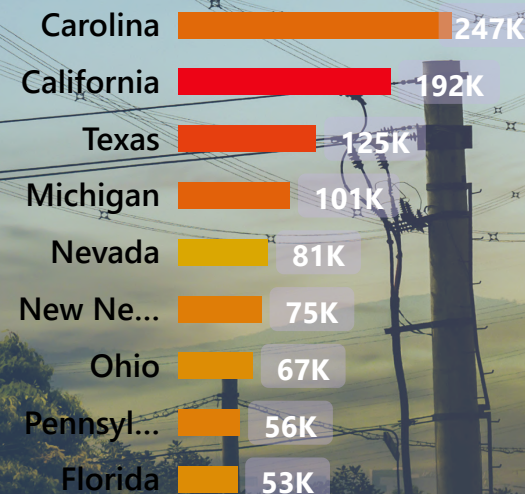
Only Area Where Loss Countable



#Total Customer Affected by Area



#Total Demand Loss by Area Affected



Area Affected Analysis Summary

Insight 1: California has the most events

- California had the most events, with 282 events occurring between 2002 and 2023. This represents 13% of all events with a loss.

- California also had the most customers affected, with around 42 million people affected. This represents 11% of all customers affected.

Insight 2: Carolinas has the most demand loss

- The Carolinas had the most demand loss, with 247,000 megawatts lost. This represents 14% of all demand loss.



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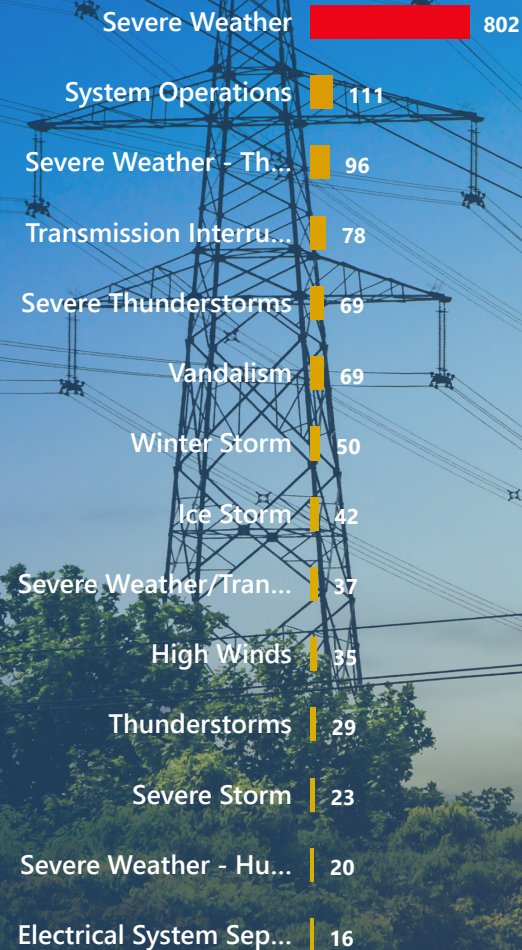
Area Affected

All

#Total Event by Event Reason

Only Area Where Loss Countable

Event Type



Total Event

#Total Customer Affected by Event Reason



#Total Demand Loss by Event Reason



Area Affected Analysis Summary

Insight 1: Severe weather is the leading cause of events

- Severe weather is the leading cause of events, accounting for 36% of all events with a loss. This includes events such as hurricanes, tornadoes, floods, and wildfires. These events can cause widespread damage to infrastructure leading to outages.



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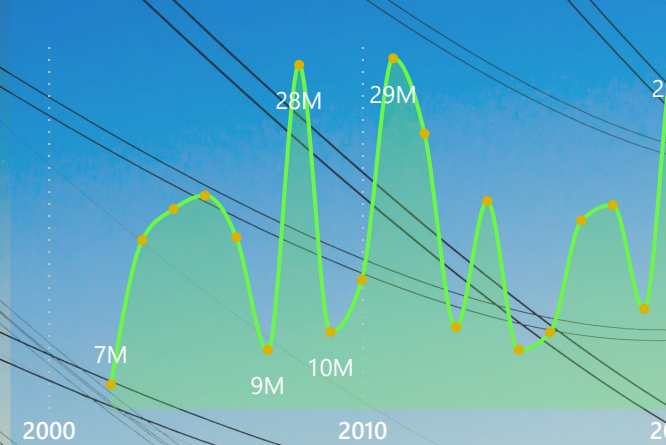
Area Affected

All

#Total Event by Year



#Total Customer Affected by Year



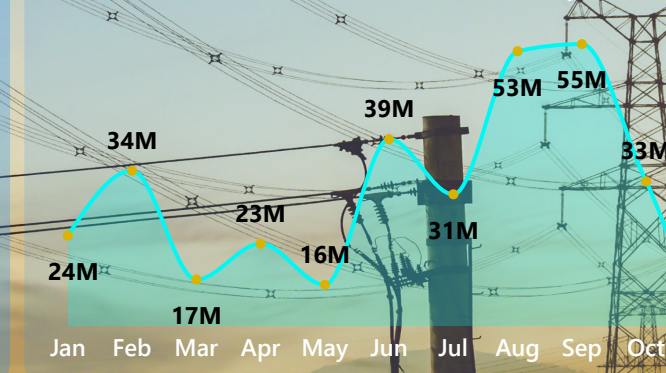
#Total Demand Loss by Year



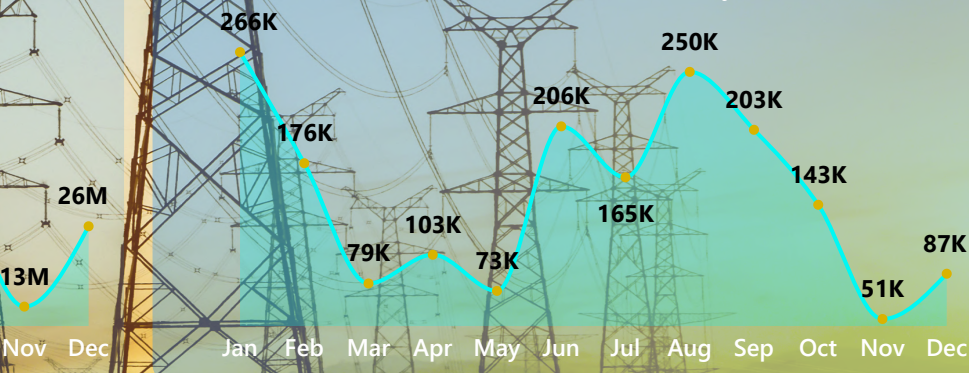
#Total Event by Month



#Total Customer Affected by Month



#Total Demand Loss by Month



Time Series Analysis Summary

Insight 1: Year-based analysis

- The years 2020, 2011, and 2008 had the most events, with 200, 169, and 139 events, respectively. These years also had the most customers affected, with around 29 million, 29 million, and 28 million people affected, respectively. The years 2019, 2011, and 2003 had the most demand loss, with 198 thousand, 115 thousand, and 110 thousand megawatts lost, respectively.

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#Total Event by Year & Forecasting for next 4 Years



Correlation between Number of Event & Total Demand Loss by Year



NERC Region

WECC

State Affected

California

Year

2020

Event Where Loss C...
2228

WECC
489

SERC
472

RFC
351

NPCC
199

TRE
157

California
273

Washington
73

Oregon
26

Nevada
21

Utah
14

2020
32

2022
28

2021
25

2017
20

2010
18

Advance Analysis Summary

Insight 1: Event Forecasting for Next 4 Years

- A line chart is a good choice for forecasting because it is easy to see trends over time. The line chart shows that the number of events is expected to continue to increase in the next four years.
- This information can be used to develop plans to mitigate the impact of events.