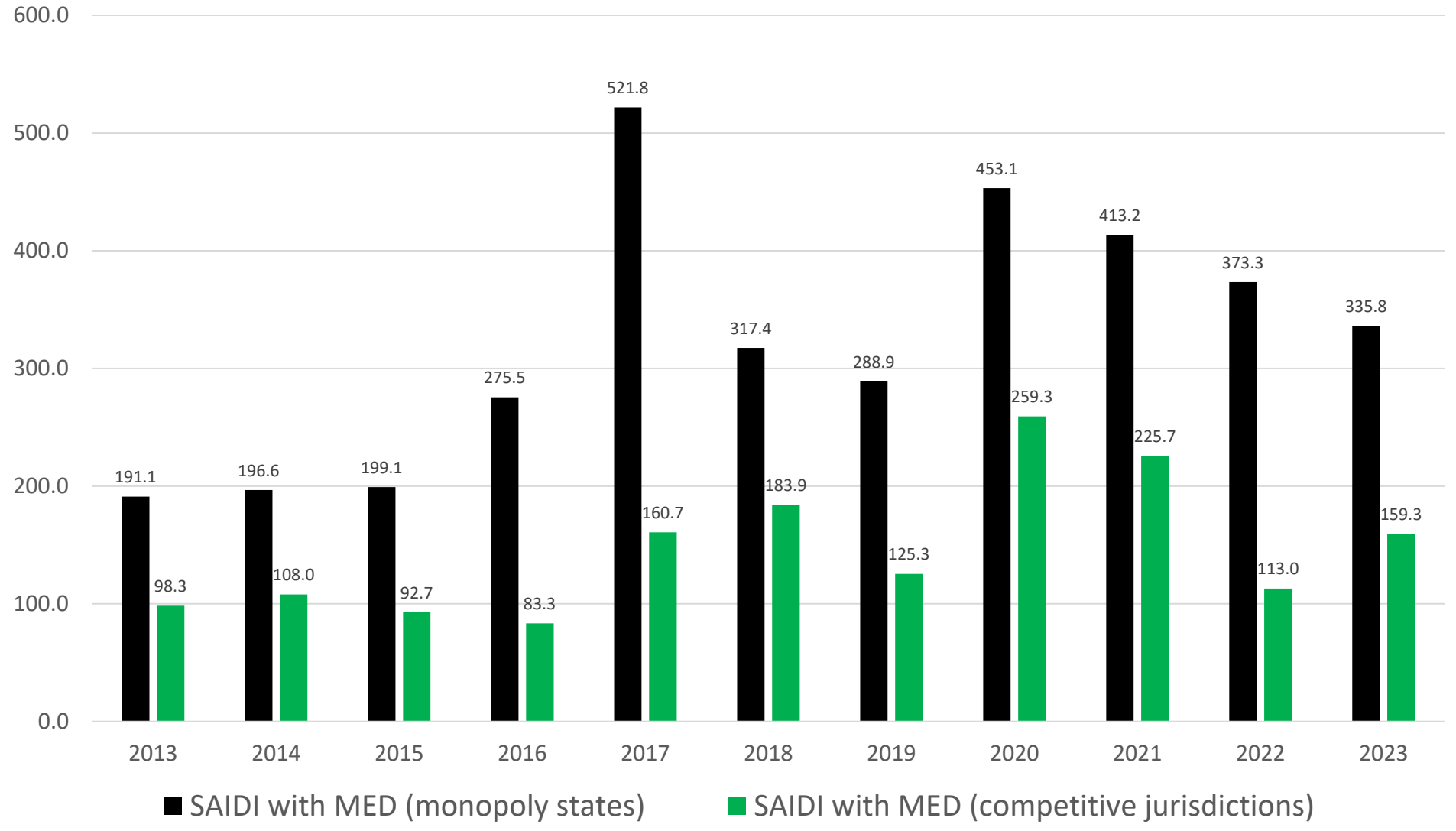
Customer Reliability Analysis

These graphs compare the duration (minutes), frequency (count), and average duration (minutes per year) of outages (with and without major event days) to measure the electricity reliability in the traditional vertically-integrated (i.e. monopoly) states and the restructured (i.e. competitive) states/jurisdictions. The metrics show that the 35 monopoly states do not demonstrate superior reliability metrics than those in 14 competitive states/jurisdictions, and that enabling retail choice over traditional regulated monopoly service has not resulted in a reduction in power service reliability*.

*These comparisons utilize data from the EIA, using the standard EIA metrics for reliability (SAIDI, SAIFI, and CAIDI with and without MED).

SAIDI with MED Comparison

Average yearly duration of outages, in minutes, including major event days



Retail Energy Supply Association

General Definitions:

SAIDI - System Average Interruption Duration Index. SAIDI is the average number of minutes a customer is interrupted in a year.

MED – Major Event Days. When the data talks about with or without MED, it means counting or not counting the outage events associated with major events.

Glossary of terms:

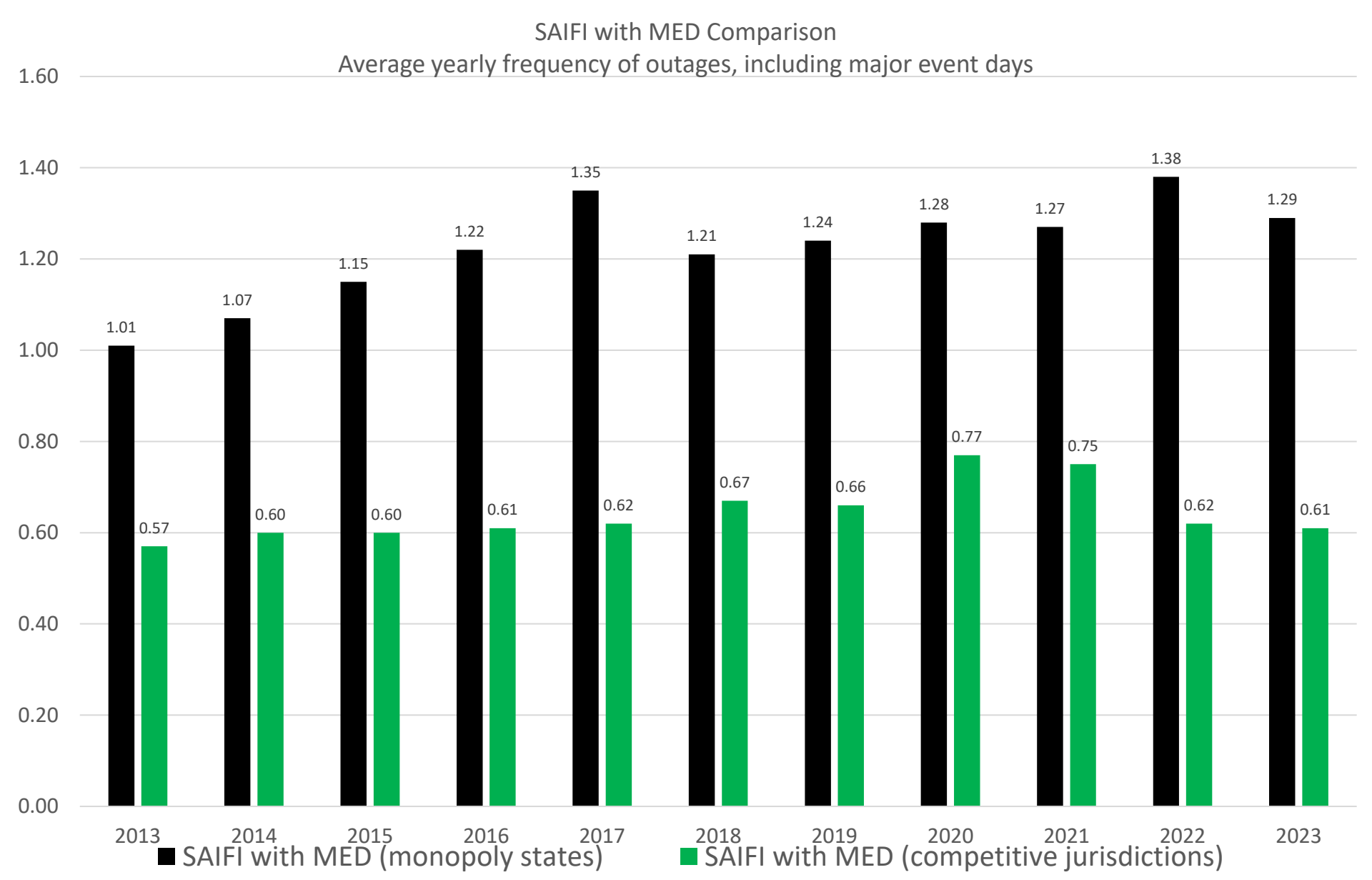
SAIDI with MED - Average yearly duration of outages, in minutes, including major event days.

Additional information on the three metrics: (source: WIKI)

The **System Average Interruption Duration Index** (SAIDI) is commonly used as a reliability indicator by electric power utilities. SAIDI is the average outage duration for each customer served. SAIDI is measured in units of time, often minutes or hours. It is usually measured over a year, and according to IEEE Standard 1366-1998, the median value for North American utilities is approximately 1.50 hours

Conclusion:

Enabling retail choice over traditional regulated monopoly service has **not** resulted in a reduction in power service reliability. The reliability metrics show that the 35 monopoly states do not demonstrate superior reliability metrics than those in 14 competitive states/jurisdictions.



RESA
Retail Energy Supply Association

General Definitions:

SAIFI - System Average Interruption Frequency Index. SAIFI is the average number of interruptions that a customer experiences.

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Glossary of terms:

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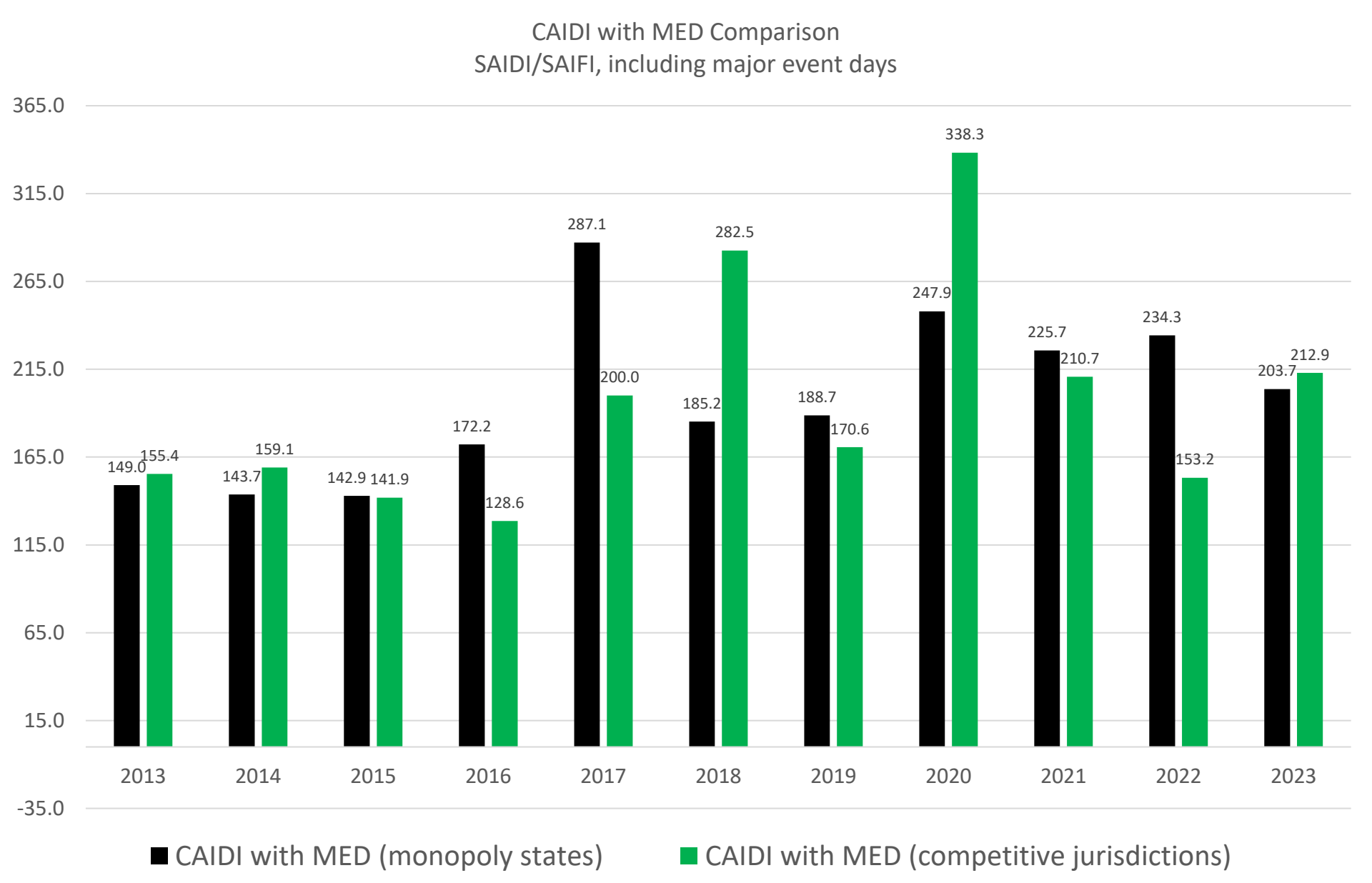
Enabling retail choice over traditional regulated monopoly service will **not** result in a reduction in power service reliability. The reliability metrics show that the 35 monopoly states do not demonstrate superior reliability metrics than those in 14 competitive states/ jurisdictions.



Retail Energy Supply Association

General Definitions:

CAIDI - Customer Average Interruption Duration Index. CAIDI indicates the average outage duration that a customer experiences. If CAIDI is improved, there will be fewer outages and for a shorter time, which means the customers will be happier for a longer time.

MED – Major Event Days. When the data talks about with or without MED, it means counting or not counting the outage events associated with major events.

Glossary of terms:

CAIDI with MED - SAIDI/SAIFI, including major event days.

Additional information on the three metrics: (source: WIKI)

The **Customer Average Interruption Duration Index** (CAIDI) is a reliability index commonly used by electric power utilities. It is related to SAIDI and SAIFI. In other words, CAIDI gives the average outage duration that any given customer would experience. CAIDI can also be viewed as the average restoration time. CAIDI is measured in units of time, often minutes or hours. It is usually measured over a year, and according to IEEE Standard 1366-1998, the median value for North American utilities is approximately 1.36 hours.

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In The Case of 2020:

In 2020, the CAIDI with MED was much higher in the competitive states than the monopoly states. CAIDI indicates the average amount of time a state experienced an outage (Average yearly duration of outages, in minutes, including major event days of the outage divided by the average yearly frequency of outages, including major event days). For this ratio to be large, the average duration of the outages must be a lot greater than the average frequency. The SAIFI of competitive states did not change materially from 2013 to 2023, staying between 0.6 and 0.8. This means the anomaly lies in the SAIDI. States such as New York, New Jersey, Illinois, and Connecticut experienced a high average duration of outages relative to the number of outages that occurred. New York's CAIDI was 14% of all the competitive states' CAIDI in 2020, followed by New Jersey and Connecticut, each represented 6% of the competitive states' CAIDI in 2020. These states experienced Tropical Storm Isaias in August of 2020. New York was hit the hardest, especially New York City, Long Island, and Westchester County, and the area was left without power for 4 days. Illinois also represents 6% of the CAIDI of competitive states in 2020, and Chicago also experienced a significant outage in 2020.

Large cities like New York and Chicago rarely experience outages, but when they do, they take time to fix. In 2020, the 2 largest cities in competitive states experienced outages, and compared to their low frequency, created a large competitive state CAIDI in 2020.

Northeast Articles:

Power outage leaves large swaths of Manhattan in the dark | AP News

Power outage hits large portions of Manhattan in New York City - ABC News

Isaias Aftermath: Hundreds of thousands still without power across New York area - ABC7 New York

More than 300K in NYC area still without power after Isaias

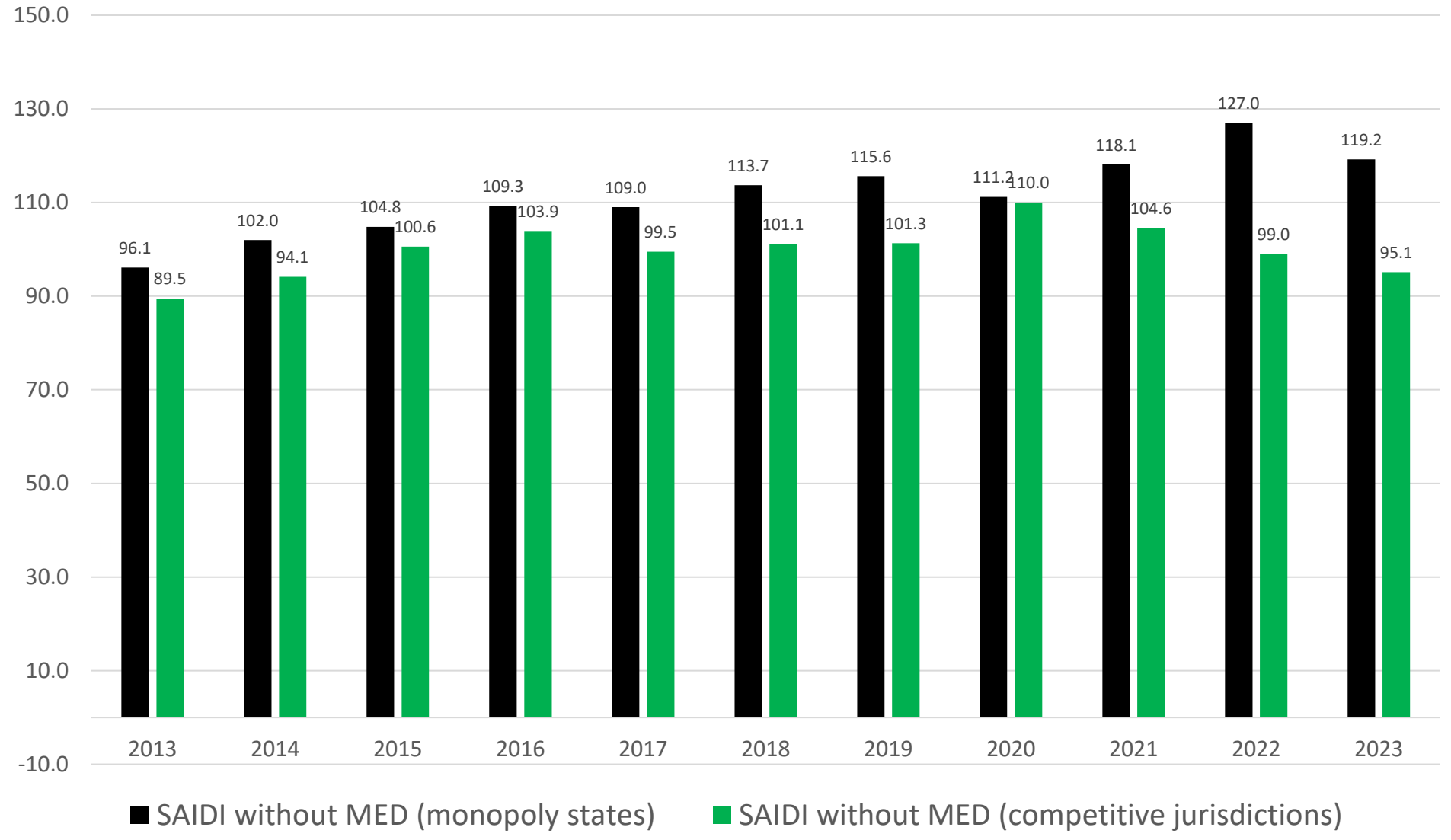
2020 Was Worst For USA Power Outages | the Blackout report

Midwest Articles:

Chicago Power Cut Hits 800,000 | the Blackout report

SAIDI without MED Comparison

Average yearly duration of outages, in minutes, excluding major event days



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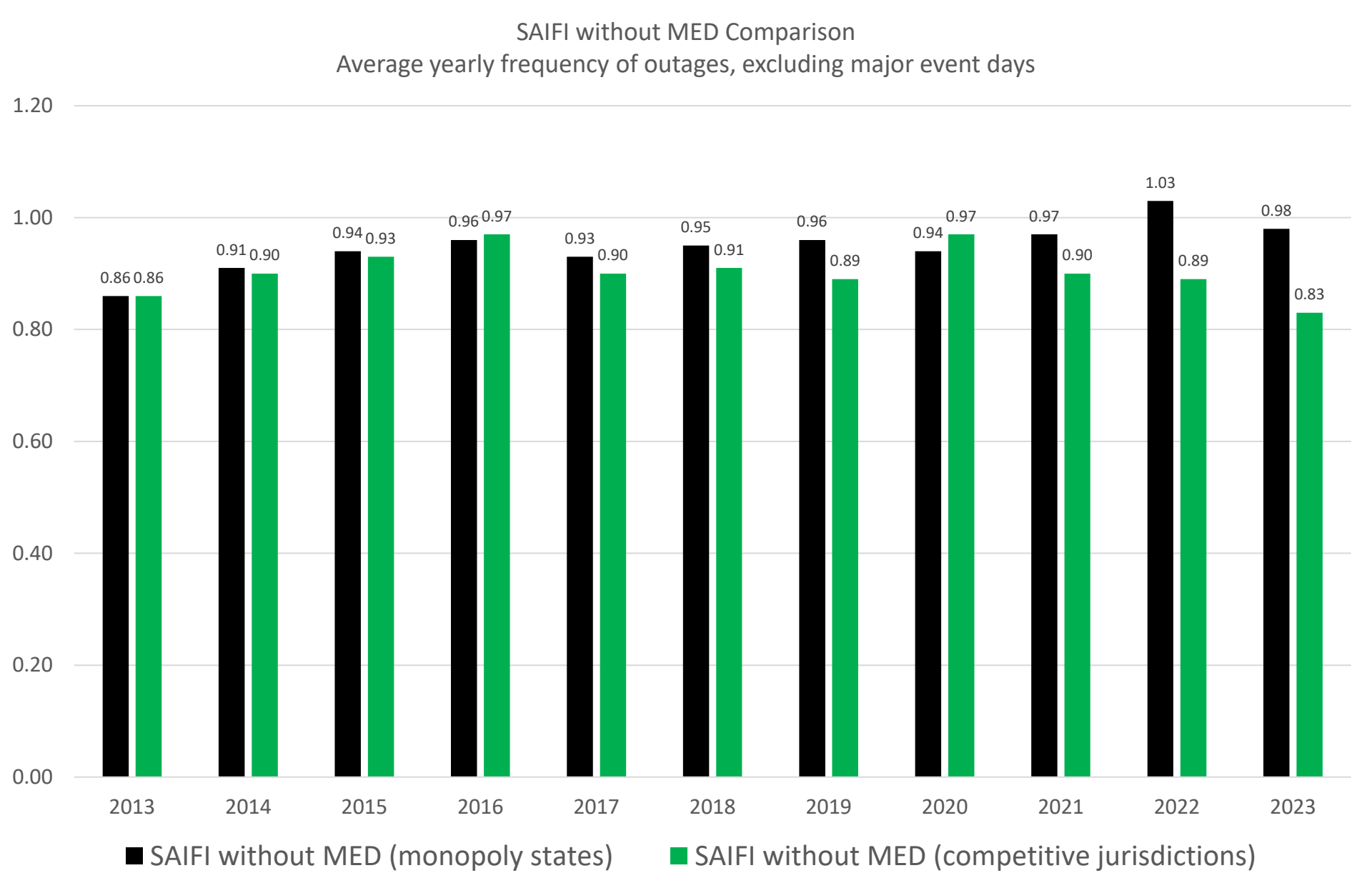

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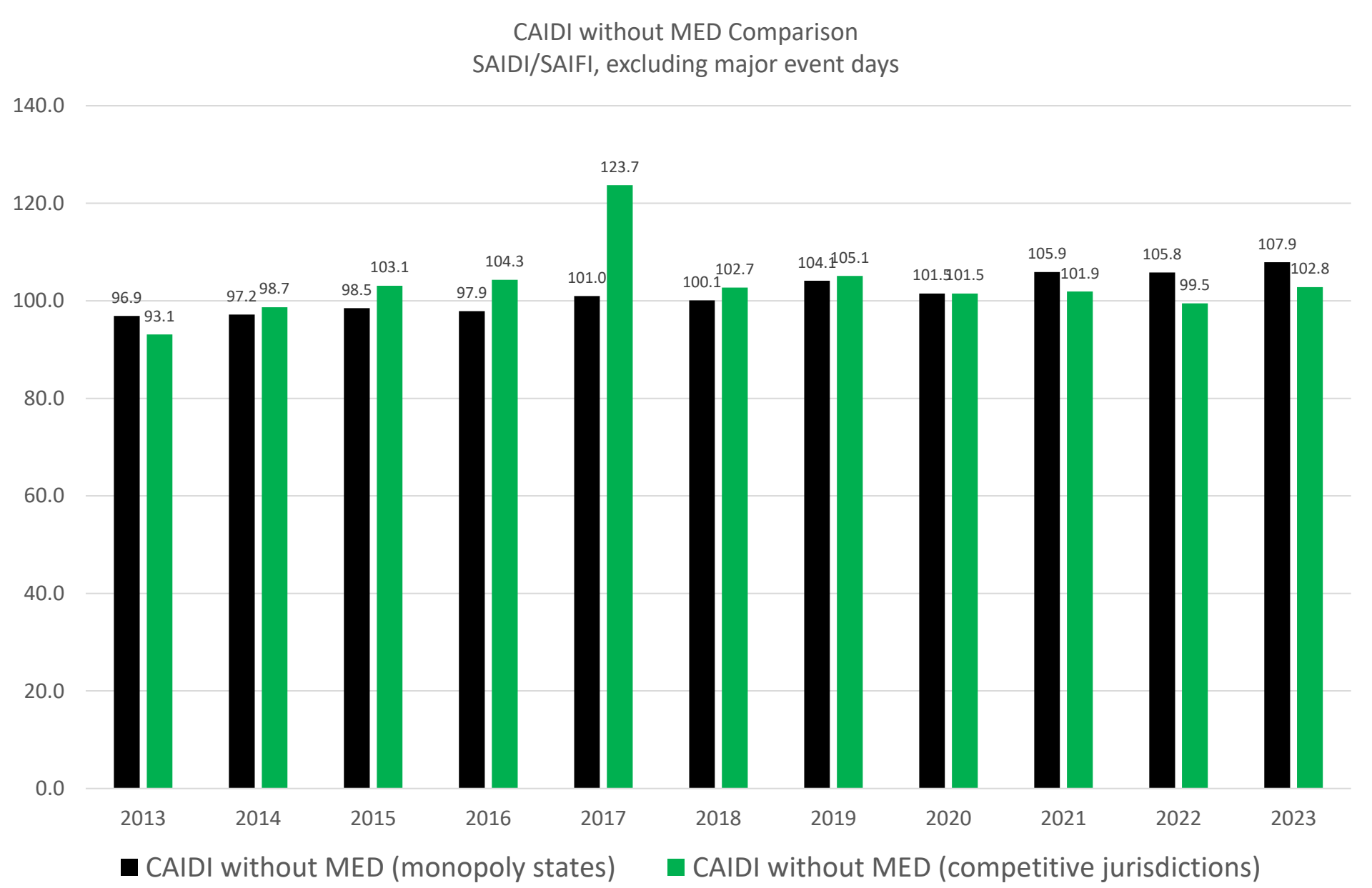

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