



## INDIANA UTILITY REGULATORY COMMISSION ELECTRIC UTILITY RELIABILITY REPORT 2023

Each investor-owned electric utility (IOU) in Indiana is required to file a reliability report annually with the Indiana Utility Regulatory Commission (Commission or IURC) in compliance with 170 IAC 4-1-23(e). This document serves as a compilation of the reports filed for 2023 and provides data beginning in 2010. This Report includes a graph for each IOU to illustrate the trends in these reliability metrics through 2023. Given that there have been changes to the reliability metrics, we have truncated the tables to primarily emphasize the information from 2010 to the present.

The utilities provide the following three reliability indices in their annual reports to the IURC.

- **System Average Interruption Frequency Index (SAIFI):** SAIFI is the average number of interruptions per customer. It is calculated by dividing the total number of customer interruptions by the total number of customers.
- **System Average Interruption Duration Index (SAIDI):** SAIDI is the average minutes of interruption per customer. It is calculated by dividing the sum of all customer interruption durations (in minutes) by the total number of customers.
- **Customer Average Interruption Duration Index (CAIDI):** CAIDI is the average duration of interruptions or the time to restore service to interrupted customers. It is calculated by dividing SAIDI by SAIFI.

Each utility reports its reliability indices with and without major events days (Major Event Days or MEDs). Major events are primarily storms or weather events that are more destructive than normal storm patterns. However, major events may also include ice storms, earthquakes, floods, fires, high winds / tornados, and other disasters. The Institute of Electrical and Electronics Engineers (IEEE) Standard 1366 involves the calculation of a threshold of SAIDI minutes based on data from the previous five years. A MED occurs when the threshold is exceeded on any day. The provision of indices that exclude major events normalizes the data by eliminating interruptions over which the utility has little or no control. In addition, there can be considerable variation in a wide range of major events that result in significant damage and require time to make needed repairs. The following table summarizes the number of MEDs and Major Events for each IOU in Indiana during 2023. *Note: a single event can carry over to additional days that result in multiple MEDs.*

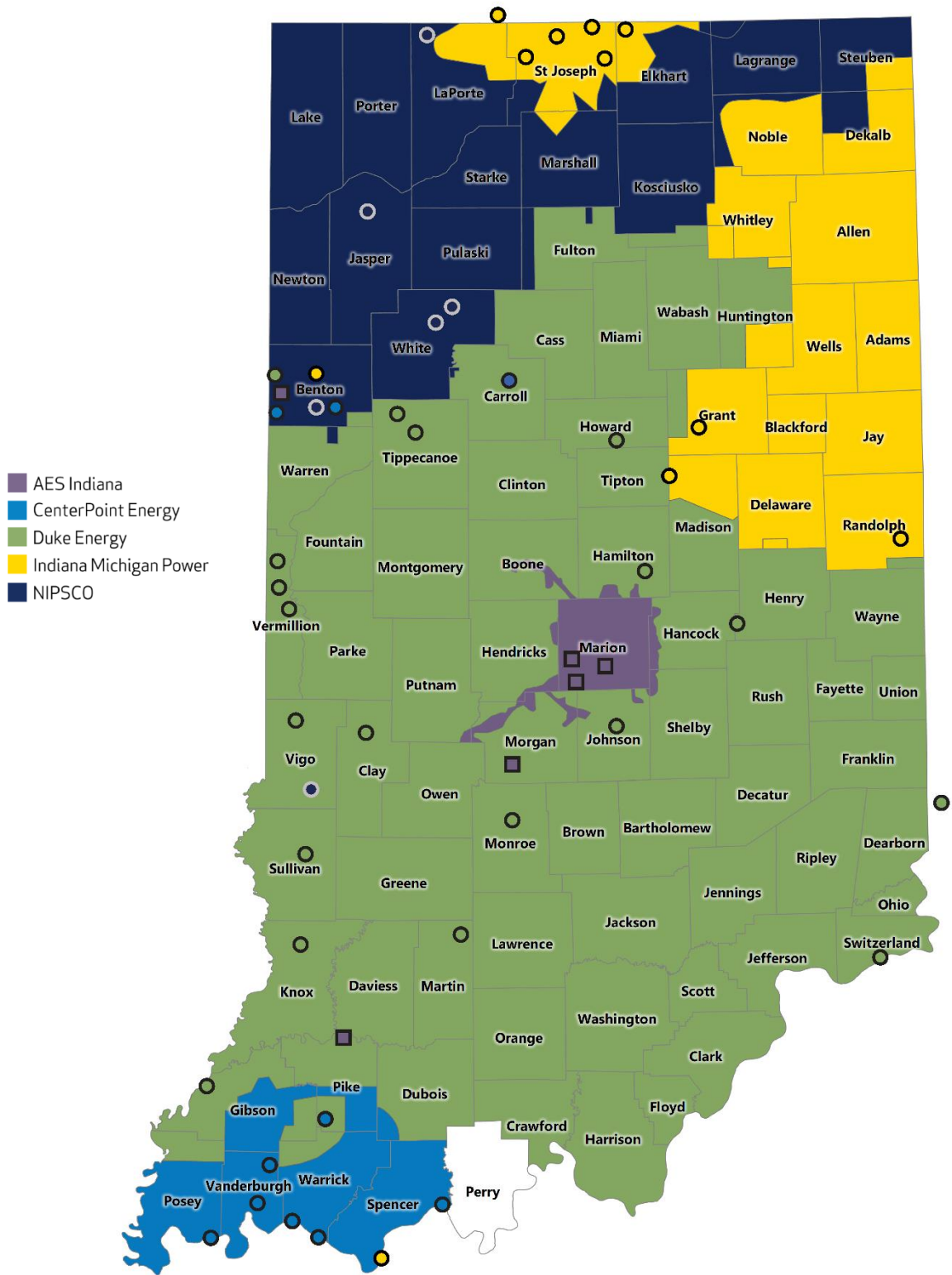
| Utility Company                                      | Major Event Days | Major Events |
|--|------------------|--------------|
| Indianapolis Power & Light Company (dba AES Indiana) | 7                | 7            |
| CenterPoint Energy Indiana (formerly Vectren)        | 10               | 3            |
| Duke Energy Indiana, LLC                             | 6                | 6            |
| Indiana Michigan Power Company                       | 5                | 5            |
| Northern Indiana Public Service Company, LLC         | 13               | 6            |

Reliability metrics, used appropriately, provide useful information on each utility’s distribution system, especially if the metrics are considered over several years to lessen the potential that a short series of information may be atypical. Care should be taken when making comparisons between utilities because they all experience different circumstances (e.g., some serve areas that are more densely populated, some serve multistory office buildings that may be counted as a single customer, heavily forested areas may pose a greater risk of outages, weather differences, age of infrastructure). In addition to the causes of outages that were mentioned previously and are beyond the control of electric utilities, the solutions for improving future reliability are likely to be different for each utility. It is also important to note that perfect reliability is not attainable and efforts to improve these metrics are often expensive.

Consistent with the legislative direction to the Commission for utilities to maintain and enhance system reliability, such as the transmission, distribution, and storage improvement charge (TDSIC) statute, the Commission encourages utilities to continue to look for ways to detect problems, expedite repairs, and recovery from major events. The Commission has also ordered the investor-owned utilities to work with their stakeholders in collaboratives that include discussions on how to improve system reliability.

This Report provides an opportunity for policymakers, utilities, and customers to better understand the evolution of reliability improvements. When compared to Commission ordered annual performance metric reports that cover a range of utility operations, the reliability statistics can be placed in a broader context of utility performance measured over time.

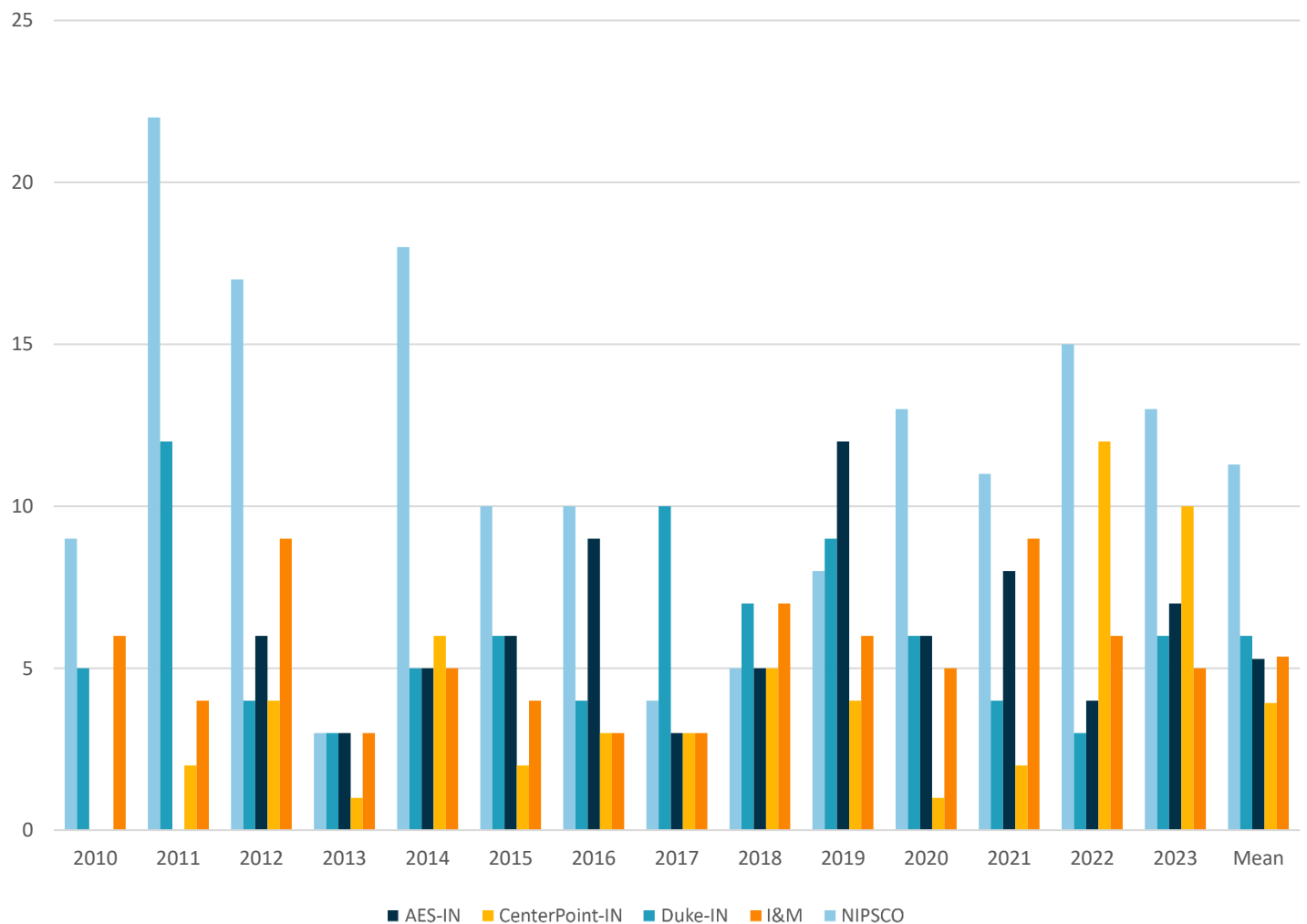
# Indiana Investor-owned Electric Service Territories



## History of Major Event Days for Investor-Owned Utilities in Indiana

| Major Event Days for Investor-Owned Utilities<br>(2010-2023) |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | Mean |
| AES-IN   | 0    | 0    | 6    | 3    | 5    | 6    | 9    | 3    | 5    | 12   | 6    | 8    | 4    | 7    | 5    |
| CenterPoint-IN   | 0    | 2    | 4    | 1    | 6    | 2    | 3    | 3    | 5    | 4    | 1    | 2    | 12   | 10   | 4    |
| Duke-IN  | 5    | 12   | 4    | 3    | 5    | 6    | 4    | 10   | 7    | 9    | 6    | 4    | 3    | 6    | 6    |
| I&M  | 6    | 4    | 9    | 3    | 5    | 4    | 3    | 3    | 7    | 6    | 5    | 9    | 6    | 5    | 5    |
| NIPSCO   | 9    | 22   | 17   | 3    | 18   | 10   | 10   | 4    | 5    | 8    | 13   | 11   | 15   | 13   | 11   |

**Major Event Days for Investor-Owned Utilities**  
(2010-2023)



| Electric Reliability Including Major Events<br>(2010-2023) |       |      |      |       |      |      |      |      |      |      |      |       |        |        |        |
|--|-------|------|------|-------|------|------|------|------|------|------|------|-------|--------|--------|--------|
|  | 2010  | 2011 | 2012 | 2013  | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021  | 2022   | 2023   |        |
| AES-IN   | SAIFI | 1.04 | 0.86 | 1.04  | 0.71 | 0.96 | 0.94 | 1.17 | 0.95 | 1.13 | 1.22 | 1.16  | 1.61   | 1.51   | 1.38   |
|  | SAIDI | 71   | 75   | 125   | 92   | 190  | 219  | 232  | 80   | 149  | 213  | 155   | 176.39 | 147.26 | 466.75 |
|  | CAIDI | 68   | 88   | 120   | 130  | 199  | 233  | 198  | 85   | 131  | 175  | 133   | 109.76 | 97.72  | 337.34 |
| CenterPoint-IN   | SAIFI | 1.02 | 2.16 | 1.24  | 0.78 | 1.47 | 0.9  | 1.26 | 0.8  | 1.09 | 1.37 | 1     | 0.87   | 1.82   | 1.57   |
|  | SAIDI | 90   | 711  | 117   | 60   | 314  | 81   | 261  | 86   | 140  | 174  | 122   | 78.6   | 454.3  | 450.5  |
|  | CAIDI | 88   | 330  | 95    | 77   | 214  | 91   | 207  | 107  | 129  | 127  | 121.4 | 89.9   | 249.9  | 286.3  |
| Duke-IN  | SAIFI | 1.58 | 2.07 | 1.52  | 1.38 | 1.31 | 1.27 | 1.34 | 1.33 | 1.45 | 1.38 | 1.25  | 1.1    | 1.32   | 1.48   |
|  | SAIDI | 195  | 630  | 216   | 257  | 186  | 211  | 290  | 261  | 366  | 221  | 279   | 203.1  | 215.7  | 645.40 |
|  | CAIDI | 124  | 304  | 143   | 187  | 142  | 166  | 217  | 196  | 253  | 160  | 223   | 182.3  | 163.9  | 434.70 |
| I&M  | SAIFI | 0.98 | 1.12 | 1.39  | 0.96 | 0.96 | 1.24 | 1.06 | 1.11 | 1.28 | 1.38 | 1.119 | 1.128  | 1.048  | 0.848  |
|  | SAIDI | 392  | 258  | 1,071 | 375  | 306  | 390  | 255  | 258  | 263  | 282  | 300.3 | 426.2  | 389.3  | 155.1  |
|  | CAIDI | 400  | 230  | 773   | 392  | 318  | 314  | 241  | 233  | 206  | 204  | 268.3 | 377.7  | 371.4  | 183    |
| NIPSCO   | SAIFI | 1.36 | 1.38 | 1.44  | 1.45 | 1.53 | 1.16 | 1.26 | 1.11 | 1.33 | 1.58 | 1.264 | 1.55   | 1.44   | 1.14   |
|  | SAIDI | 505  | 371  | 428   | 520  | 603  | 248  | 231  | 153  | 244  | 359  | 473   | 529    | 370    | 320    |
|  | CAIDI | 372  | 269  | 297   | 359  | 395  | 214  | 184  | 138  | 184  | 227  | 374   | 341    | 257    | 281    |

| Electric Reliability Not Including Major Events<br>(2010-2023) |       |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|--|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|  | 2010  | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   | 2023   |        |
| AES-IN   | SAIFI | 1.04   | 0.86   | 0.82   | 0.58   | 0.71   | 0.66   | 0.74   | 0.86   | 0.95   | 0.88   | 0.93   | 1.32   | 1.37   | 0.98   |
|  | SAIDI | 71.15  | 75.08  | 56.71  | 48.33  | 56.71  | 48.70  | 61.64  | 59.64  | 67.46  | 75.60  | 73.00  | 104.44 | 112.49 | 86.69  |
|  | CAIDI | 68.13  | 87.63  | 69.57  | 82.78  | 80.24  | 73.70  | 82.85  | 69.05  | 71.08  | 85.52  | 79.00  | 79.42  | 82.41  | 88.19  |
| CenterPoint-IN   | SAIFI | 1.02   | 1.43   | 1.07   | 0.73   | 0.92   | 0.85   | 0.82   | 0.64   | 0.80   | 1.08   | 0.86   | 0.82   | 1.01   | 0.83   |
|  | SAIDI | 89.70  | 137.00 | 83.00  | 47.50  | 67.20  | 70.90  | 61.30  | 58.80  | 78.30  | 100.40 | 78.00  | 69.70  | 103.40 | 79.80  |
|  | CAIDI | 88.30  | 95.70  | 77.50  | 65.10  | 73.00  | 82.90  | 74.40  | 91.60  | 97.60  | 92.80  | 91.00  | 85.30  | 102.10 | 96.60  |
| Duke-IN  | SAIFI | 1.32   | 1.27   | 1.29   | 1.17   | 1.16   | 1.03   | 1.10   | 0.99   | 1.06   | 1.07   | 0.95   | 0.94   | 1.16   | 0.89   |
|  | SAIDI | 138.00 | 146.00 | 149.00 | 138.00 | 140.00 | 121.00 | 142.49 | 138.30 | 156.20 | 140.40 | 121.00 | 127.10 | 160.40 | 98.00  |
|  | CAIDI | 104.00 | 115.00 | 115.00 | 118.00 | 121.00 | 117.50 | 129.60 | 139.60 | 148.00 | 131.60 | 127.20 | 135.90 | 138.40 | 109.90 |
| I&M  | SAIFI | 0.74   | 0.99   | 0.91   | 0.74   | 0.77   | 1.05   | 0.95   | 0.98   | 1.10   | 1.19   | 0.94   | 0.86   | 0.77   | 0.70   |
|  | SAIDI | 111.30 | 153.70 | 136.70 | 113.70 | 127.50 | 160.10 | 152.90 | 166.30 | 175.70 | 189.40 | 154.10 | 148.40 | 120.70 | 94.60  |
|  | CAIDI | 150.90 | 156.10 | 151.10 | 154.00 | 165.40 | 152.60 | 160.80 | 170.20 | 159.70 | 159.80 | 164.50 | 173.20 | 156.50 | 136.20 |
| NIPSCO   | SAIFI | 0.94   | 0.92   | 0.83   | 0.78   | 0.84   | 0.87   | 0.99   | 1.00   | 1.09   | 1.07   | 0.90   | 1.06   | 0.95   | 0.87   |
|  | SAIDI | 122.00 | 126.00 | 102.00 | 95.00  | 94.00  | 110.00 | 135.00 | 129.94 | 151.38 | 155.00 | 138.00 | 175.00 | 143.00 | 149.00 |
|  | CAIDI | 130.00 | 137.00 | 123.00 | 122.00 | 111.00 | 127.00 | 136.00 | 129.42 | 139.00 | 145.00 | 153.00 | 165.00 | 150.00 | 171.00 |

Notes

SAIFI: System Average Interruption Frequency Index; (# of customers who experience outage) / (total # of customers)

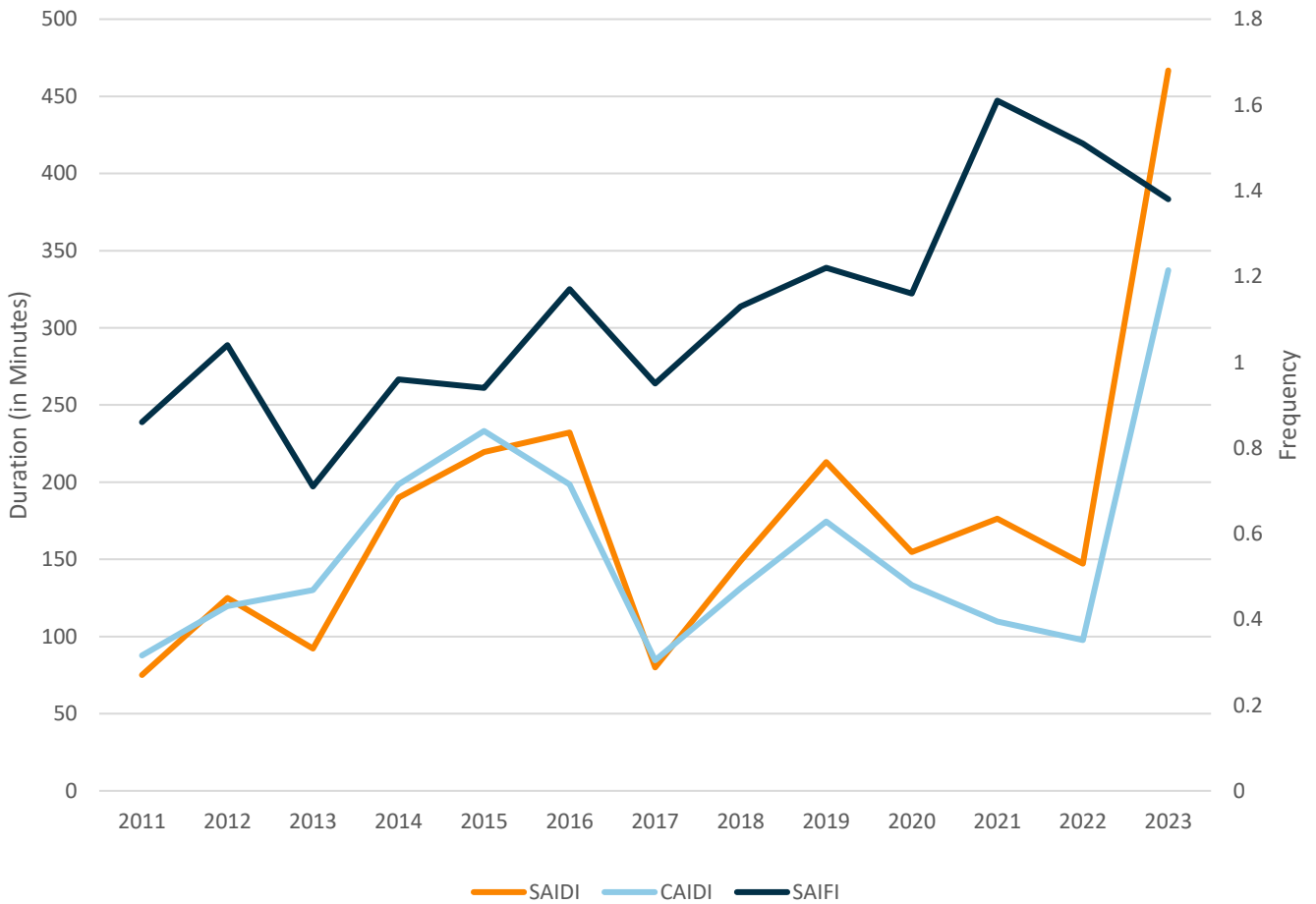
SAIDI: System Average Interruption Duration Index; (duration or time of service interruptions) / (total # of customers)

CAIDI: Customer Average Interruption Duration Index; (SAIDI) / (SAIFI)

# AES Indiana

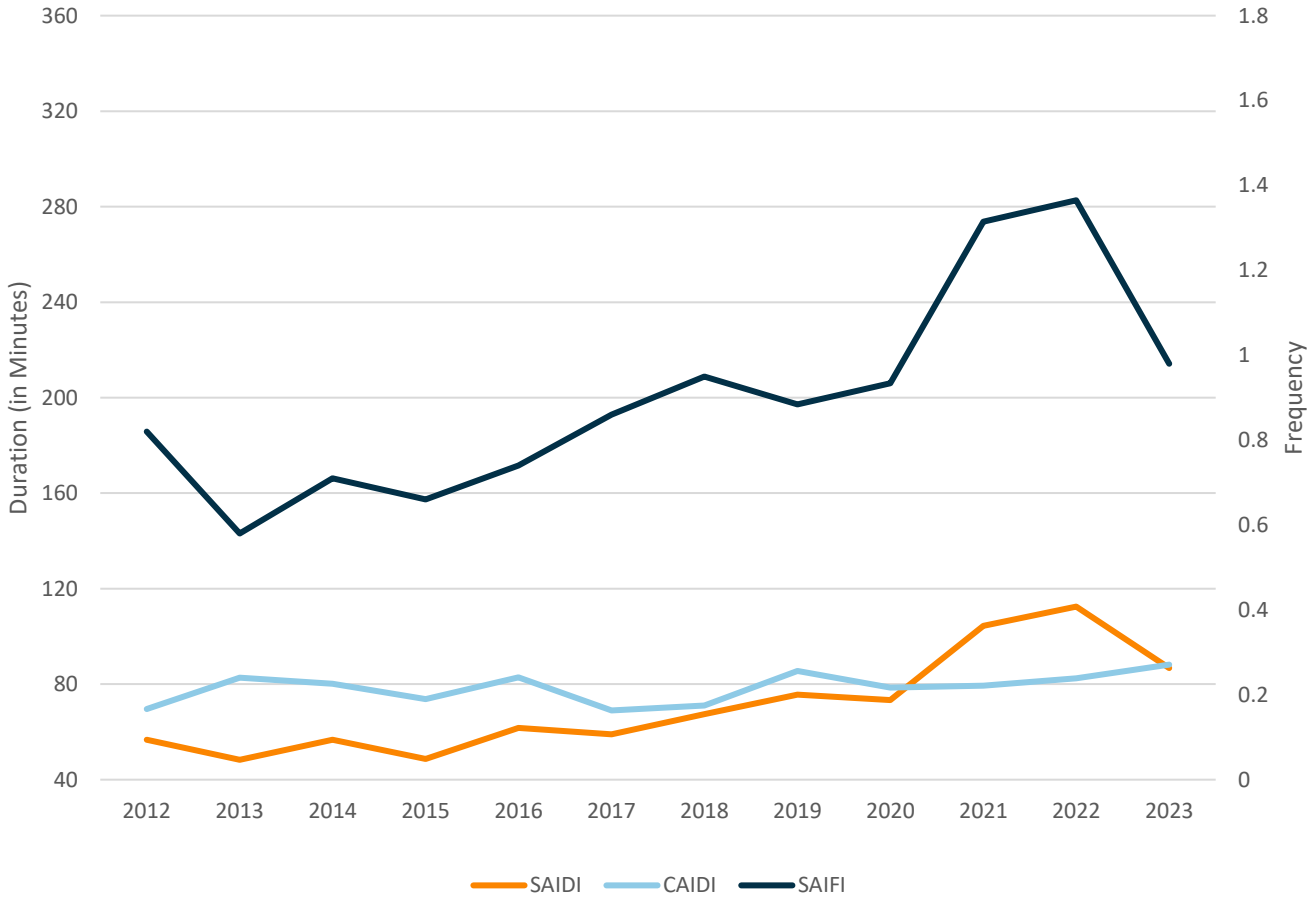
| Electric Reliability Including Major Events |       |      |      |      |      |      |      |      |      |      |      |        |        |        |
|---|-------|------|------|------|------|------|------|------|------|------|------|--------|--------|--------|
| AES-IN                                      | 2010  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021   | 2022   | 2023   |
|   | SAIFI | 1.04 | 0.86 | 1.04 | 0.71 | 0.96 | 0.94 | 1.17 | 0.95 | 1.13 | 1.22 | 1.16   | 1.61   | 1.51   |
| SAIDI                                       | 71    | 75   | 125  | 92   | 190  | 219  | 232  | 80   | 149  | 213  | 155  | 176.39 | 147.26 | 466.75 |
| CAIDI                                       | 68    | 88   | 120  | 130  | 199  | 233  | 198  | 85   | 131  | 175  | 133  | 109.76 | 97.72  | 337.34 |

**AES-IN Electric Reliability Measures**  
(Including Major Events)



| Electric Reliability Not Including Major Events |       |      |      |      |      |      |      |      |      |      |       |        |        |       |
|---|-------|------|------|------|------|------|------|------|------|------|-------|--------|--------|-------|
| AES-IN  | 2010  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020  | 2021   | 2022   | 2023  |
|   | SAIFI | 1.04 | 0.86 | 0.82 | 0.58 | 0.71 | 0.66 | 0.74 | 0.86 | 0.95 | 0.884 | 0.934  | 1.32   | 1.37  |
| SAIDI   | 71    | 75   | 57   | 48   | 57   | 49   | 62   | 59   | 68   | 76   | 73    | 104.44 | 112.49 | 86.69 |
| CAIDI   | 68    | 88   | 70   | 83   | 80   | 74   | 83   | 69   | 71   | 86   | 79    | 79.42  | 82.41  | 88.19 |

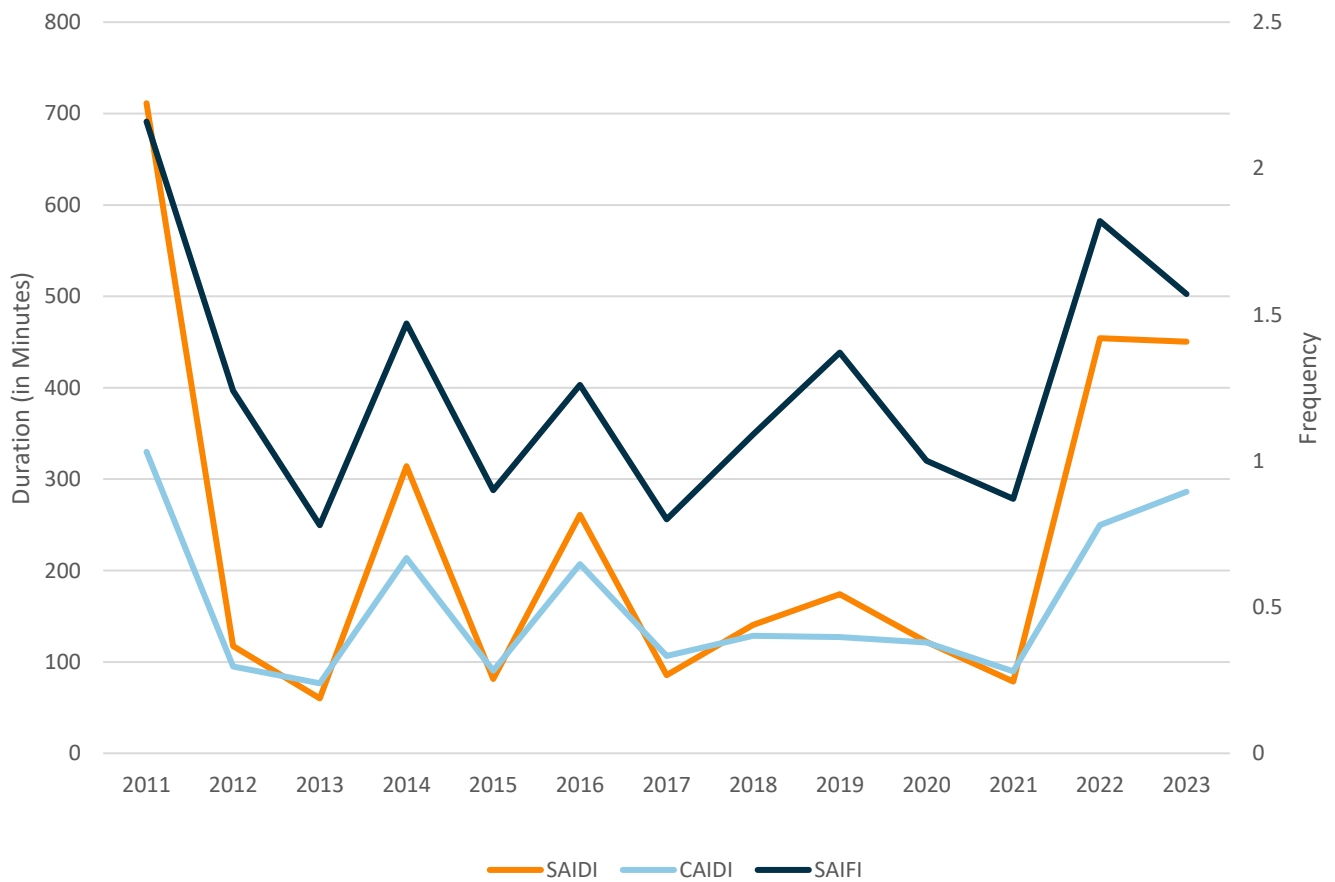
**AES-IN Electric Reliability Measures**  
(Not Including Major Events)



# CenterPoint Indiana

| Electric Reliability Including Major Events |       |      |      |      |      |      |      |      |      |      |      |       |      |       |       |
|---|-------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|-------|
|   |       | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020  | 2021 | 2022  | 2023  |
| CenterPoint-IN                              | SAIFI | 1.02 | 2.16 | 1.24 | 0.78 | 1.47 | 0.9  | 1.26 | 0.8  | 1.09 | 1.37 | 1     | 0.87 | 1.82  | 1.57  |
|   | SAIDI | 90   | 711  | 117  | 60   | 314  | 81   | 261  | 86   | 140  | 174  | 122   | 78.6 | 454.3 | 450.5 |
|   | CAIDI | 88   | 330  | 95   | 77   | 214  | 91   | 207  | 107  | 129  | 127  | 121.4 | 89.9 | 249.9 | 286.3 |
|   |       |      |      |      |      |      |      |      |      |      |      |       |      |       |       |

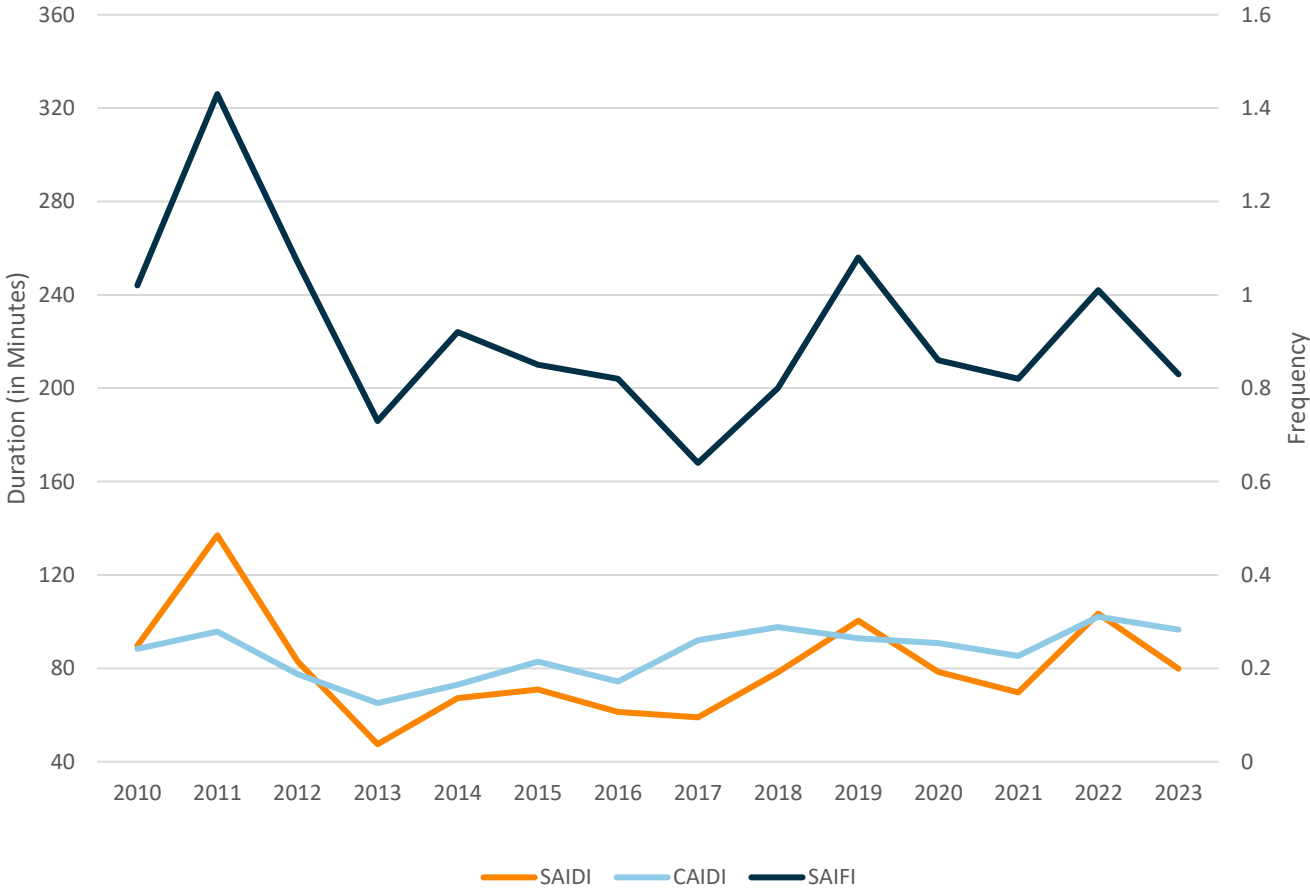
**CenterPoint-IN Electric Reliability Measures**  
(Including Major Events)





| Electric Reliability Not Including Major Events |      |      |      |      |      |      |      |      |      |      |      |       |        |      |
|---|------|------|------|------|------|------|------|------|------|------|------|-------|--------|------|
|   | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021  | 2022   | 2023 |
| <b>CenterPoint-IN</b>                           |      |      |      |      |      |      |      |      |      |      |      |       |        |      |
| SAIFI   | 1.02 | 1.43 | 1.07 | 0.73 | 0.92 | 0.85 | 0.82 | 0.64 | 0.8  | 1.08 | 0.86 | 0.82  | 1.01   | 0.83 |
| SAIDI   | 90   | 137  | 83   | 48   | 67   | 71   | 61   | 59   | 78   | 100  | 78   | 69.70 | 103.40 | 79.8 |
| CAIDI   | 88   | 96   | 78   | 65   | 73   | 83   | 74   | 92   | 98   | 93   | 91   | 85.30 | 102.10 | 96.6 |

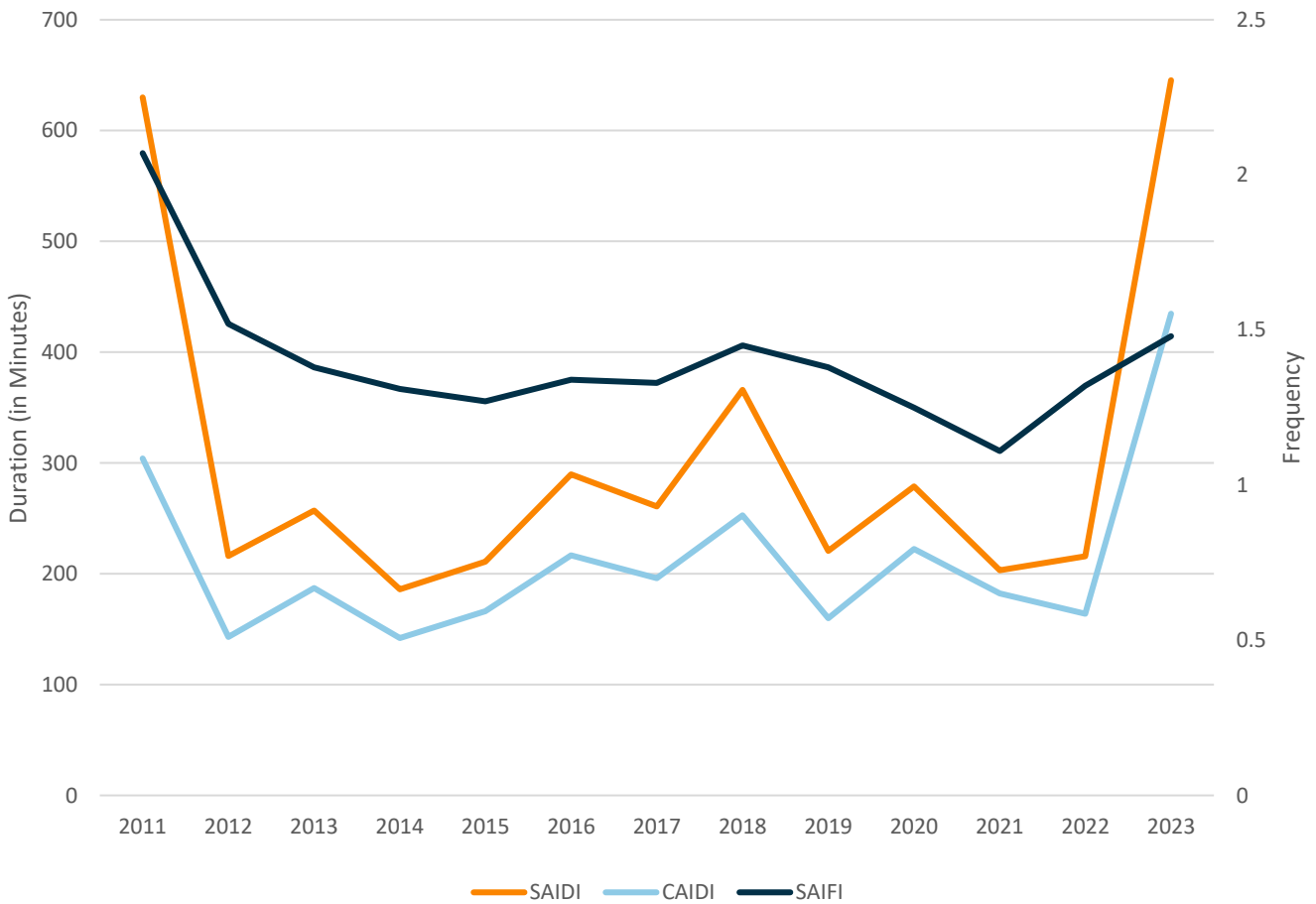
**CenterPoint-IN Electric Reliability Measures**  
(Not Including Major Events)



# Duke Energy Indiana

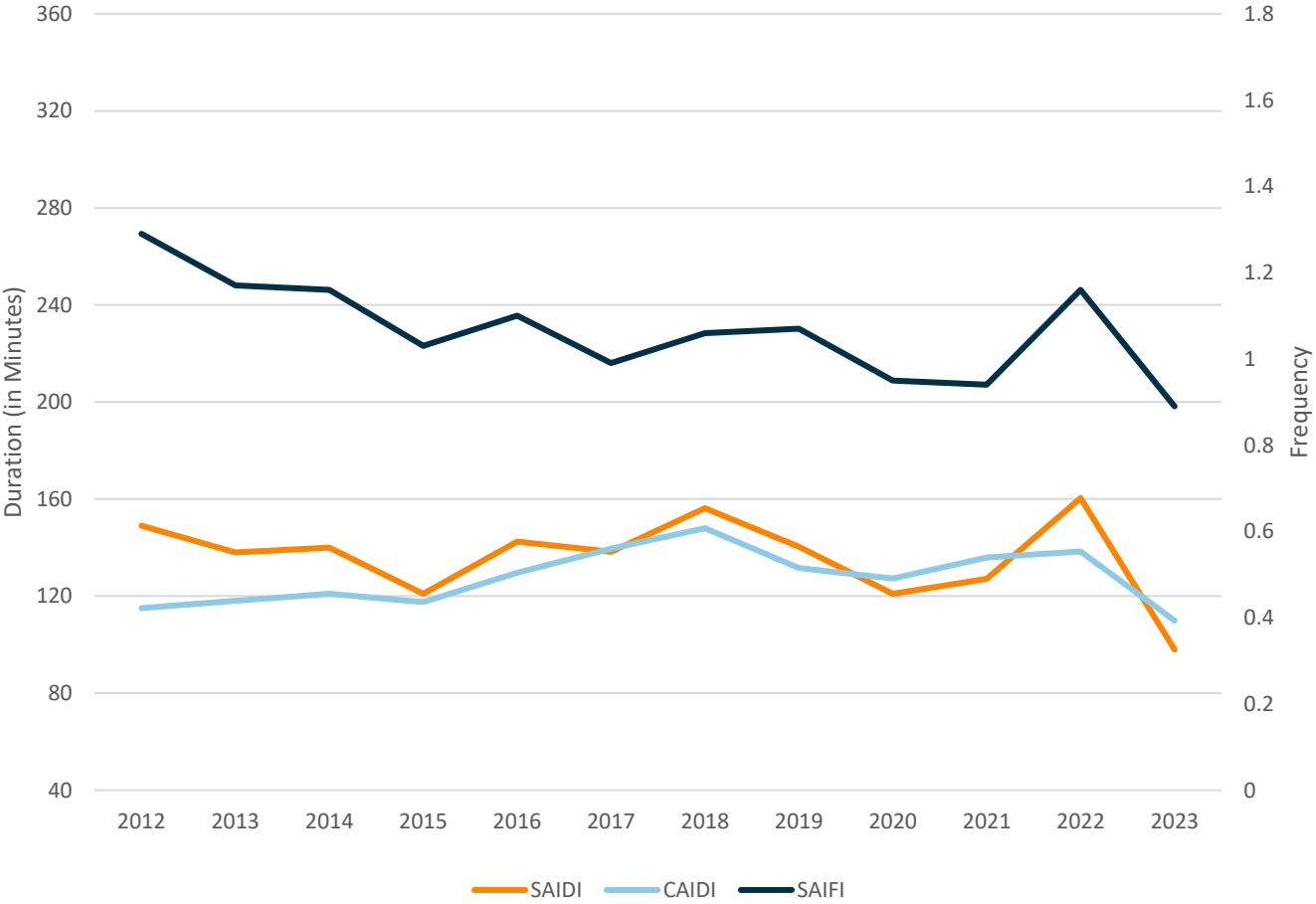
| Electric Reliability Including Major Events |      |      |      |      |      |      |      |      |      |      |      |       |       |        |
|---|------|------|------|------|------|------|------|------|------|------|------|-------|-------|--------|
| Duke-IN                                     | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021  | 2022  | 2023   |
| SAIFI                                       | 1.58 | 2.07 | 1.52 | 1.38 | 1.31 | 1.27 | 1.34 | 1.33 | 1.45 | 1.38 | 1.25 | 1.1   | 1.32  | 1.48   |
| SAIDI                                       | 195  | 630  | 216  | 257  | 186  | 211  | 290  | 261  | 366  | 221  | 279  | 203.1 | 215.7 | 645.40 |
| CAIDI                                       | 124  | 304  | 143  | 187  | 142  | 166  | 217  | 196  | 253  | 160  | 223  | 182.3 | 163.9 | 434.70 |

**Duke-IN Electric Reliability Measures**  
(Including Major Events)



| Electric Reliability Not Including Major Events |      |      |      |      |      |      |       |       |       |       |       |       |       |       |
|---|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Duke-IN   | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023  |
| SAIFI   | 1.32 | 1.27 | 1.29 | 1.17 | 1.16 | 1.03 | 1.1   | 0.99  | 1.06  | 1.07  | 0.95  | 0.94  | 1.16  | 0.89  |
| SAIDI   | 138  | 146  | 149  | 138  | 140  | 121  | 142.5 | 138.3 | 156.2 | 140.4 | 121   | 127.1 | 160.4 | 98    |
| CAIDI   | 104  | 115  | 115  | 118  | 121  | 118  | 129.6 | 139.6 | 148   | 131.6 | 127.2 | 135.9 | 138.4 | 109.9 |

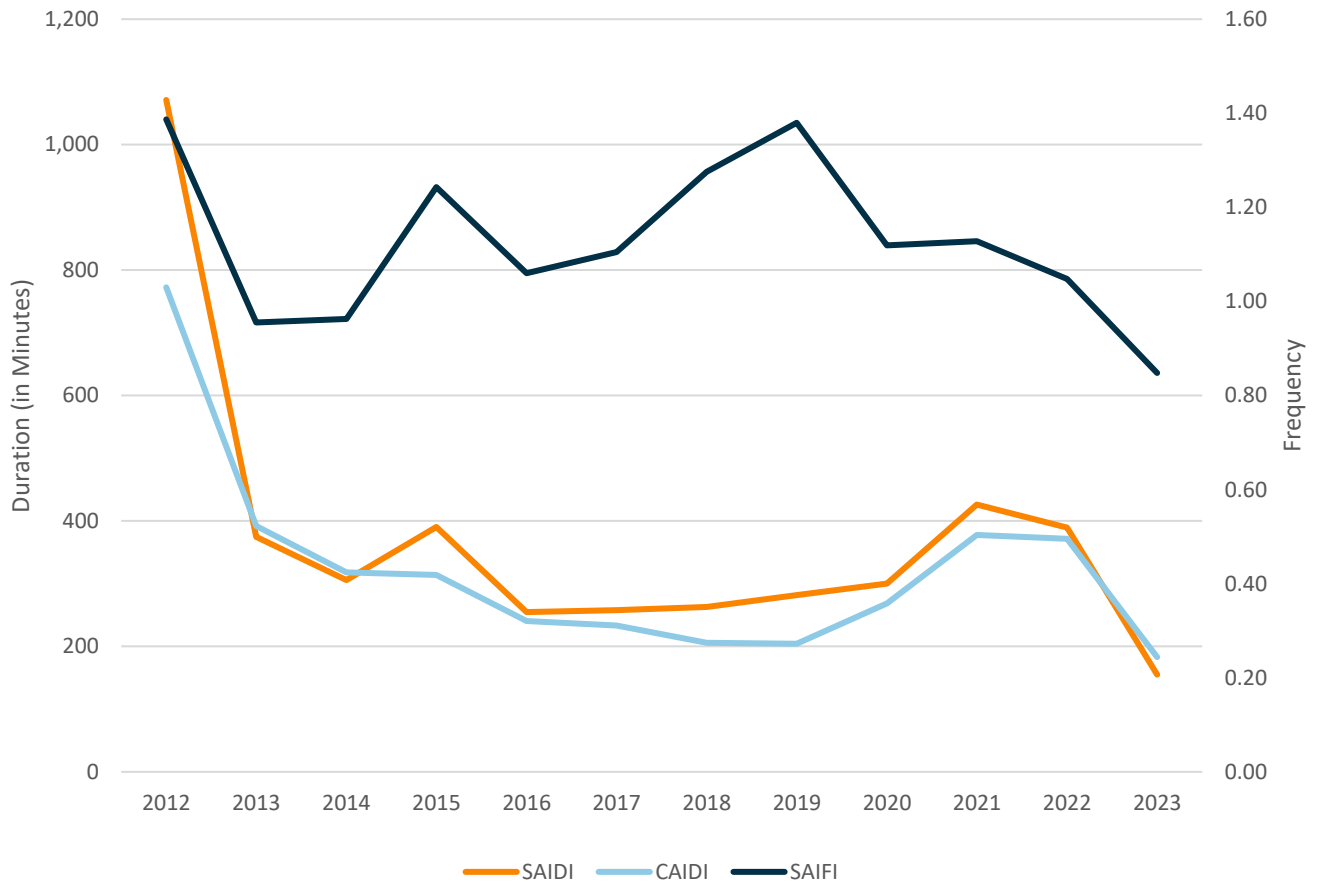
**Duke-IN Electric Reliability Measures**  
(Not Including Major Events)



# I&M

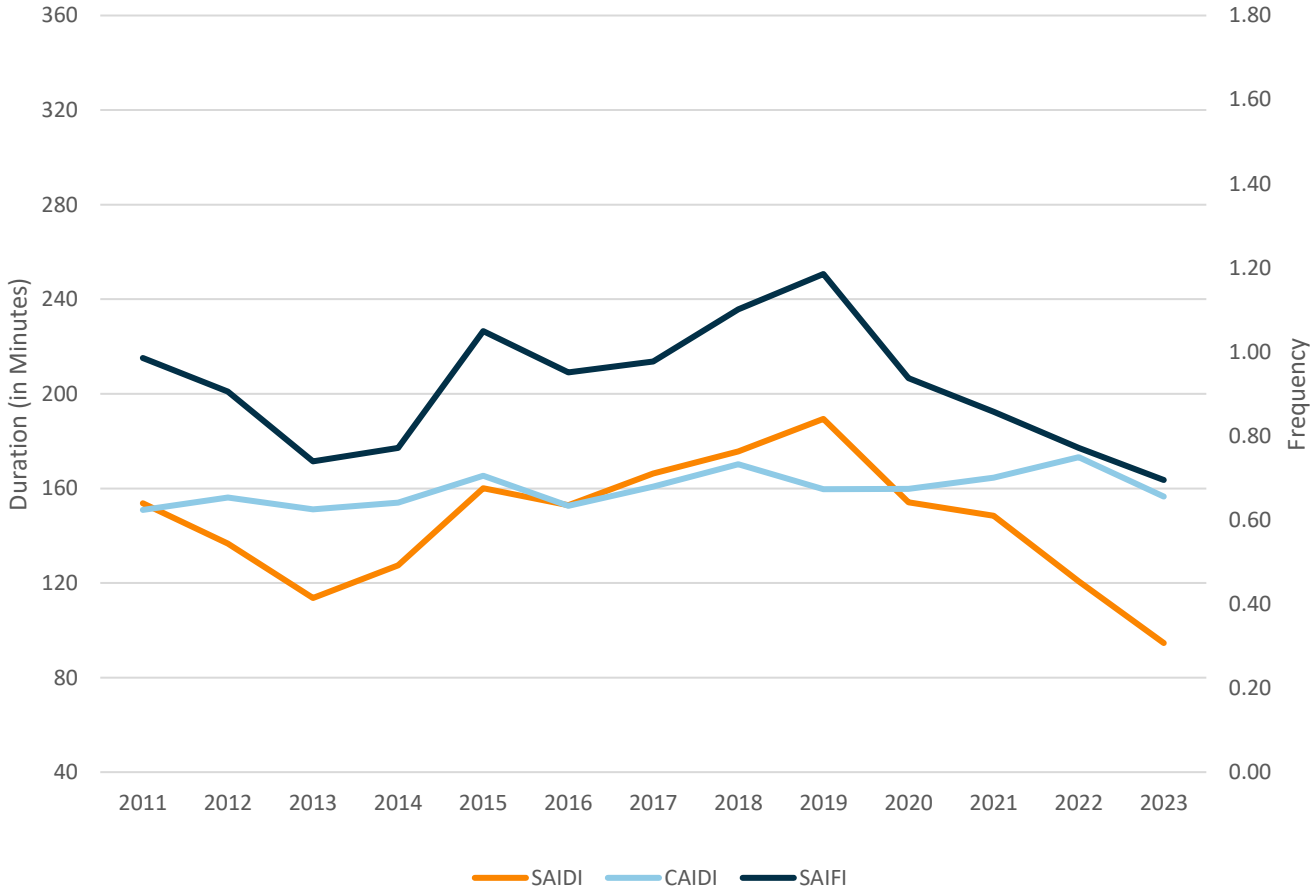
| Electric Reliability Including Major Events |      |      |       |      |      |      |      |      |      |      |       |       |       |       |
|---|------|------|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| I&M   | 2010 | 2011 | 2012  | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020  | 2021  | 2022  | 2023  |
| SAIFI                                       | 0.98 | 1.12 | 1.39  | 0.96 | 0.96 | 1.24 | 1.06 | 1.11 | 1.28 | 1.38 | 1.119 | 1.128 | 1.048 | 0.848 |
| SAIDI                                       | 392  | 258  | 1,071 | 375  | 306  | 390  | 255  | 258  | 263  | 282  | 300.3 | 426.2 | 389.3 | 155.1 |
| CAIDI                                       | 400  | 230  | 773   | 392  | 318  | 314  | 241  | 233  | 206  | 204  | 268.3 | 377.7 | 371.4 | 183   |

**I&M Electric Reliability Measures**  
(Including Major Events)



| Electric Reliability Not Including Major Events |       |      |      |      |      |      |      |      |      |      |       |       |       |        |
|---|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|--------|
| I&M   | 2010  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020  | 2021  | 2022  | 2023   |
|   | SAIFI | 0.74 | 0.99 | 0.91 | 0.74 | 0.77 | 1.05 | 0.95 | 0.98 | 1.10 | 1.19  | 0.937 | 0.857 | 0.771  |
| SAIDI   | 111   | 154  | 137  | 114  | 128  | 160  | 153  | 166  | 176  | 189  | 154.1 | 148.4 | 120.7 | 94.60  |
| CAIDI   | 151   | 156  | 151  | 154  | 165  | 153  | 161  | 170  | 160  | 160  | 164.5 | 173.2 | 156.5 | 136.20 |

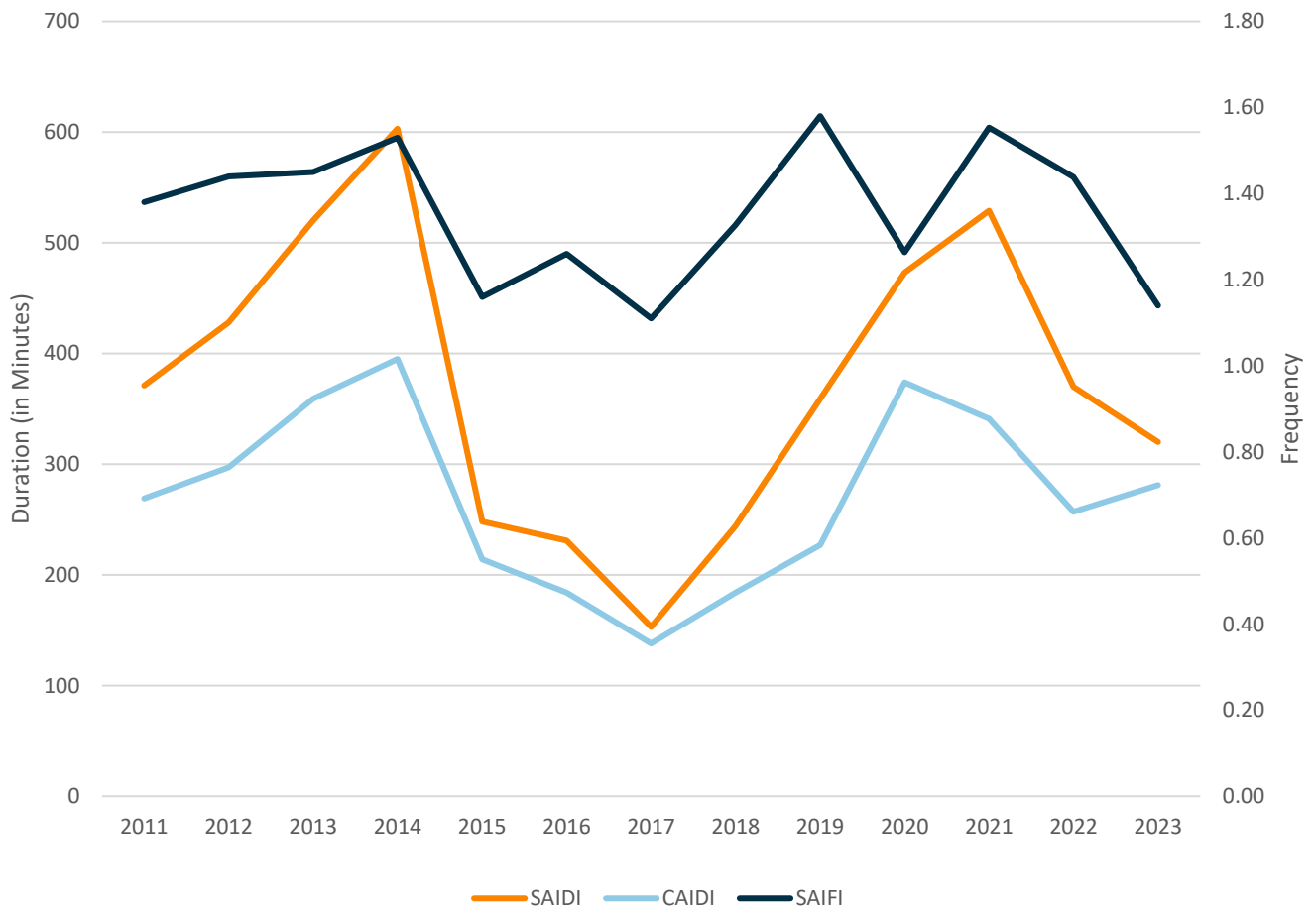
**I&M Electric Reliability Measures**  
(Not Including Major Events)



# NIPSCO

| Electric Reliability Including Major Events |      |      |      |      |      |      |      |      |      |      |       |      |      |      |
|---|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|
|   | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020  | 2021 | 2022 | 2023 |
| <b>NIPSCO</b>                               |      |      |      |      |      |      |      |      |      |      |       |      |      |      |
| SAIFI                                       | 1.36 | 1.38 | 1.44 | 1.45 | 1.53 | 1.16 | 1.26 | 1.11 | 1.33 | 1.58 | 1.264 | 1.55 | 1.44 | 1.14 |
| SAIDI                                       | 505  | 371  | 428  | 520  | 603  | 248  | 231  | 153  | 244  | 359  | 473   | 529  | 370  | 320  |
| CAIDI                                       | 372  | 269  | 297  | 359  | 395  | 214  | 184  | 138  | 184  | 227  | 374   | 341  | 257  | 281  |

**NIPSCO Electric Reliability Measures**  
(Including Major Events)



| Electric Reliability Not Including Major Events |      |      |      |      |      |      |      |       |       |       |       |       |       |      |
|---|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|------|
| NIPSCO  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  | 2023 |
| SAIFI   | 0.94 | 0.92 | 0.83 | 0.78 | 0.84 | 0.87 | 0.99 | 1     | 1.087 | 1.068 | 0.901 | 1.058 | 0.953 | 0.87 |
| SAIDI   | 122  | 126  | 102  | 95   | 94   | 110  | 135  | 129.9 | 151.4 | 155   | 138   | 175   | 143   | 149  |
| CAIDI   | 130  | 137  | 123  | 122  | 111  | 127  | 136  | 129   | 139   | 145   | 153   | 165   | 150   | 171  |

**NIPSCO Electric Reliability Measures**  
(Not Including Major Events)

