

The Narragansett Electric Company  
d/b/a Rhode Island Energy

APPLICATION FOR APPROVAL  
OF A CHANGE IN ELECTRIC AND  
GAS BASE DISTRIBUTION RATES

Rhode Island Energy's Responses to  
the First Set of Data Requests from the  
Office of the Rhode Island Attorney General

Book 4 (Part 1) of 5

March 24, 2026

Submitted to:  
Rhode Island Public Utilities Commission  
Docket No. 25-45-GE

Submitted by:



**Rhode Island Energy™**  
a PPL company

**RIAG 1-8**  
**Performance Metrics****Request:**

Please provide copies of any benchmark information available to the Company, for example from the Edison Electric Institute or other parties, that compares the Company's SAIDI and SAIFI performance over the last 5 years to that of other utilities in nearby states.

**Response:**

Please see Attachments RIAG 1-8-1 through RIAG 1-8-5 for the Institute of Electrical and Electronics Engineers ("IEEE") Benchmarking Survey, and please see Attachments RIAG 1-8-6 through RIAG 1-8-10 for the Edison Electric Institute ("EEI") Reliability Survey for the past five years. These surveys typically are shared midway through the following calendar year. Therefore, the Company has provided the results for calendar years 2020-2024.

Please note that these surveys are anonymous; therefore, companies are identified by a unique identifier. For the IEEE survey, Rhode Island Energy has been identified as "U24" for all years. For the EEI survey, Rhode Island Energy has been identified by the following numbers:

<b>Line No.</b>	<b>Calendar Year (a)</b>	<b>Identifier (b)</b>
1	2020	14
2	2021	9
3	2022	11
4	2023	16
5	2024	18



# IEEE Benchmark Year 2021 Results for 2020 Data

2021 Distribution Reliability Working Group  
Virtual Meeting

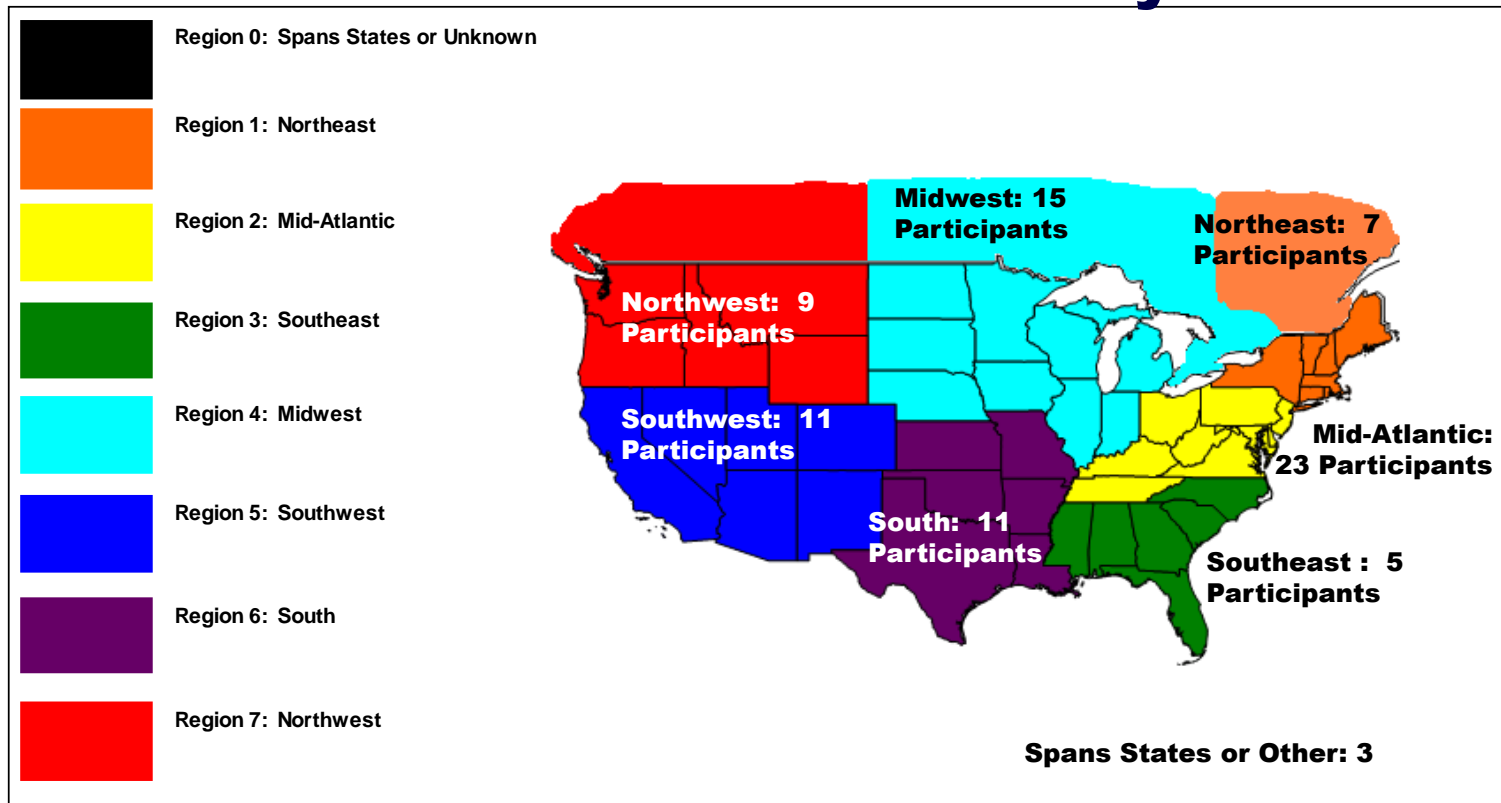
# Background to IEEE DRWG Benchmark Study

- 1. Initiated in 2003, conducted annually*
- 2. Participants are anonymous with key identifier to retain anonymity*
- 3. Participation list is not revealed to anyone*
- 4. Each participant can choose to share their results*
- 5. No inference is made about good or bad reliability*
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- 7. Called the 2021 Study (for 2020 Results)*

# Benchmarking

- Using annual key metrics (SAIDI, SAIFI and CAIDI) to assess performance of a system may be useful, however, needs to be tempered
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- Data may not be directly comparable, since
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- IEEE 1366-2003/2012
  - addresses data issues by clearly defining the rules (i.e. what data should be excluded)
  - It **DOES NOT** address the data collection issues
  - Companies may not report all forms of outages, due to data collection issues or other reasons

# Regions represented by the participants 2021 Benchmark Study



# Respondents

- About 260 companies have responded at some time
- 2021 Survey: 84 entries responded

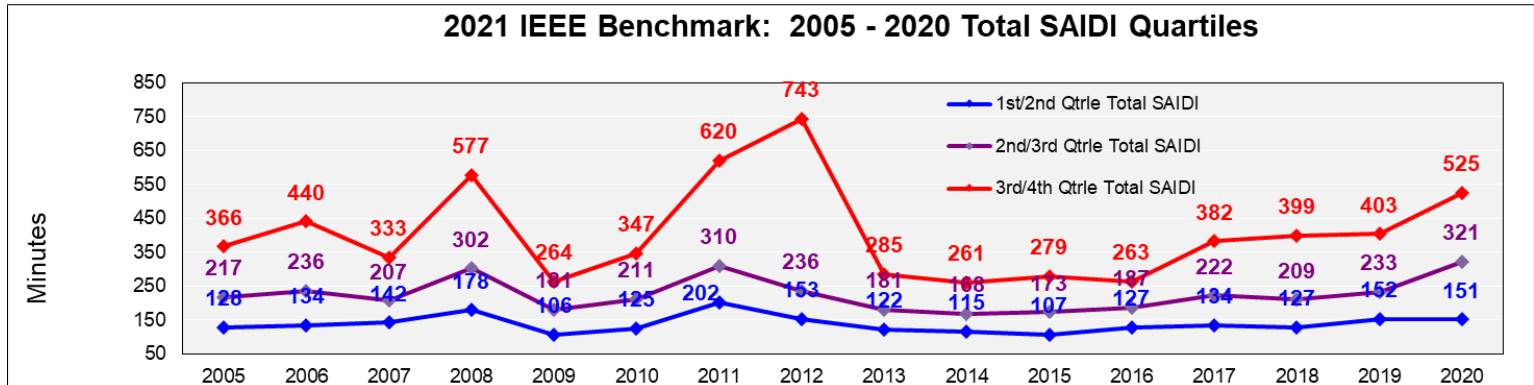
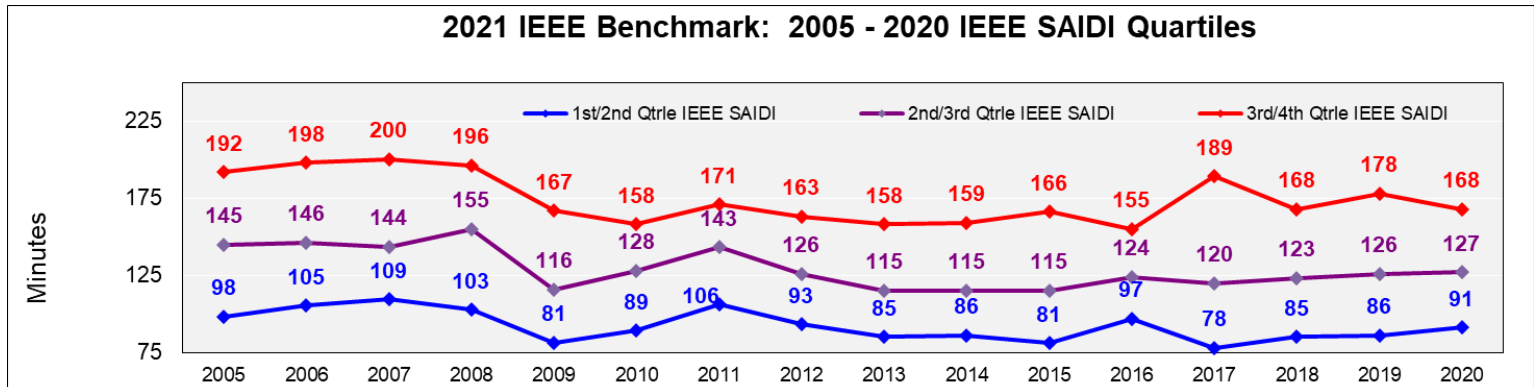
	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI
MIN	30	27	24	23	0.43	0.40	0.29	0.28	28	24
Q1	151	91	87	83	1.03	0.85	0.75	0.68	136	98
MEDIAN	321	127	112	104	1.42	1.06	0.90	0.85	206	118
Q3	525	168	152	144	1.86	1.33	1.10	1.02	333	135
MAX	8701	440	417	384	6.31	5.60	5.45	5.53	2711	230

# Respondents by Utility Size

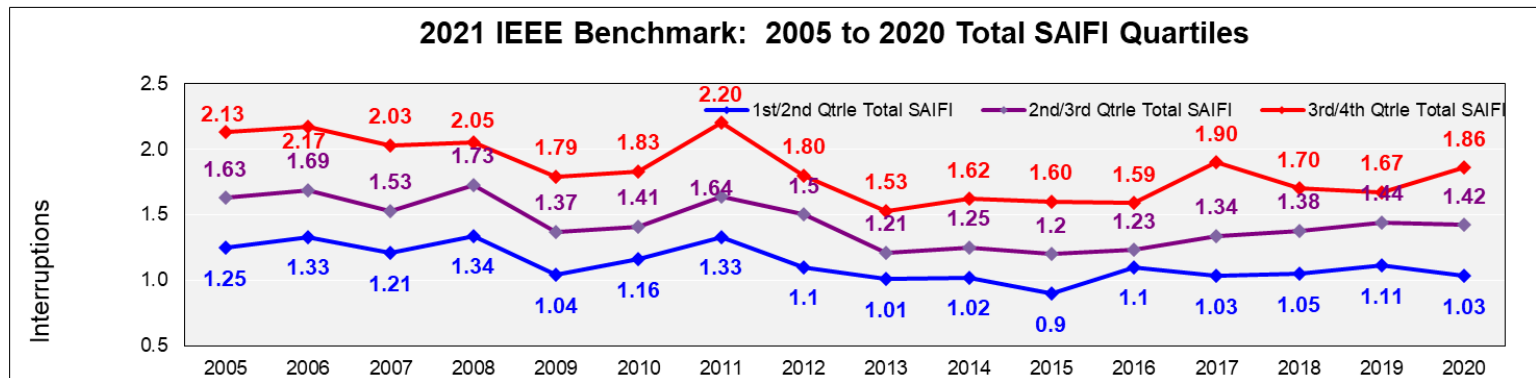
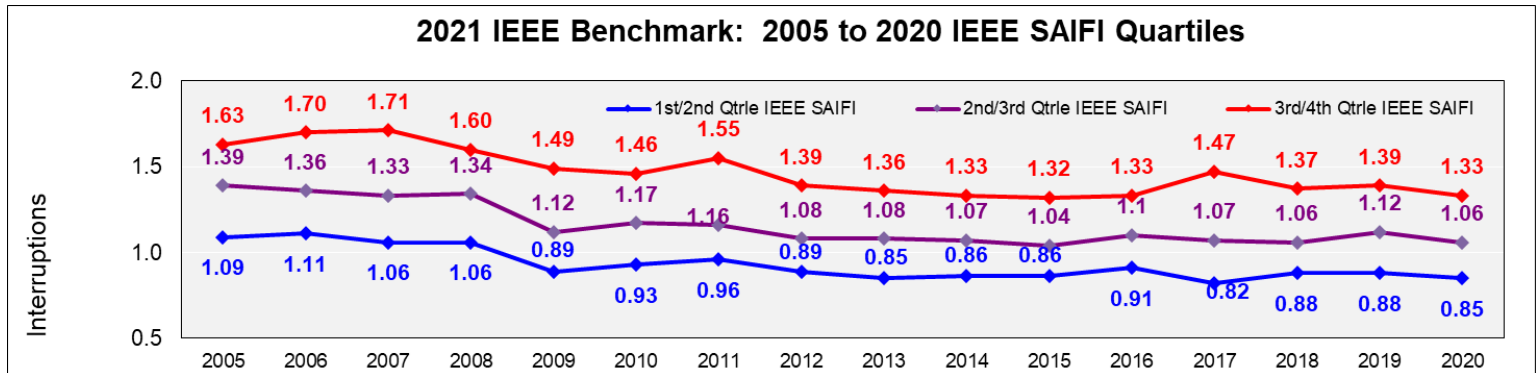
Quartile Small	4	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE
0	MIN	150	107	108	86	1.06	1.06	0.82	0.63	107	77
1	Q1	155	144	120	98	1.32	1.14	0.89	0.66	117	88
2	MEDIAN	296	187	136	104	1.68	1.42	0.96	0.81	134	119
3	Q3	438	224	151	114	2.39	1.96	1.04	0.97	166	146
4	MAX	444	244	158	139	3.68	2.82	1.14	1.00	222	148
Medium	49	SAIDI ALL	SAIDI IEEE	SAIDI WOF	WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	IEEE
0	MIN	30	27	24	23	0.43	0.40	0.29	0.28	28	24
1	Q1	152	99	89	86	0.99	0.87	0.72	0.68	141	100
2	MEDIAN	312	128	117	108	1.36	0.98	0.89	0.83	205	123
3	Q3	567	164	149	137	1.94	1.37	1.23	1.14	385	136
4	MAX	8701	407	391	363	6.31	5.60	5.45	5.53	2711	198
Quartile Large	31	SAIDI ALL	SAIDI IEEE	SAIDI WOF	WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	IEEE
0	MIN	84	40	40	32	0.83	0.55	0.55	0.47	98	73
1	Q1	147	84	82	80	1.04	0.82	0.80	0.69	145	98
2	MEDIAN	339	103	95	91	1.45	1.06	0.91	0.86	215	108
3	Q3	484	169	154	146	1.73	1.21	1.07	1.00	301	131
4	MAX	3117	440	417	384	3.29	2.85	2.20	2.03	1550	230



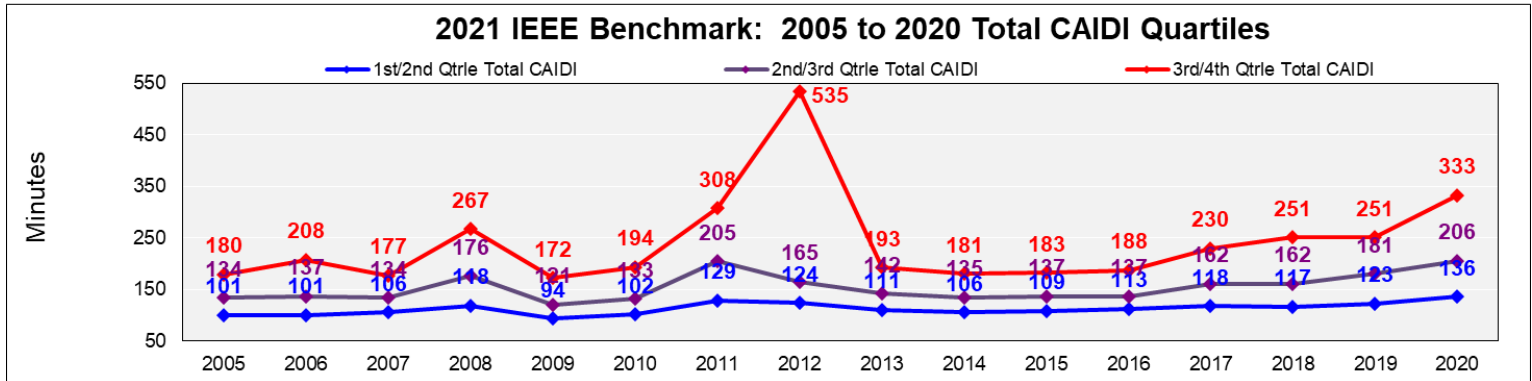
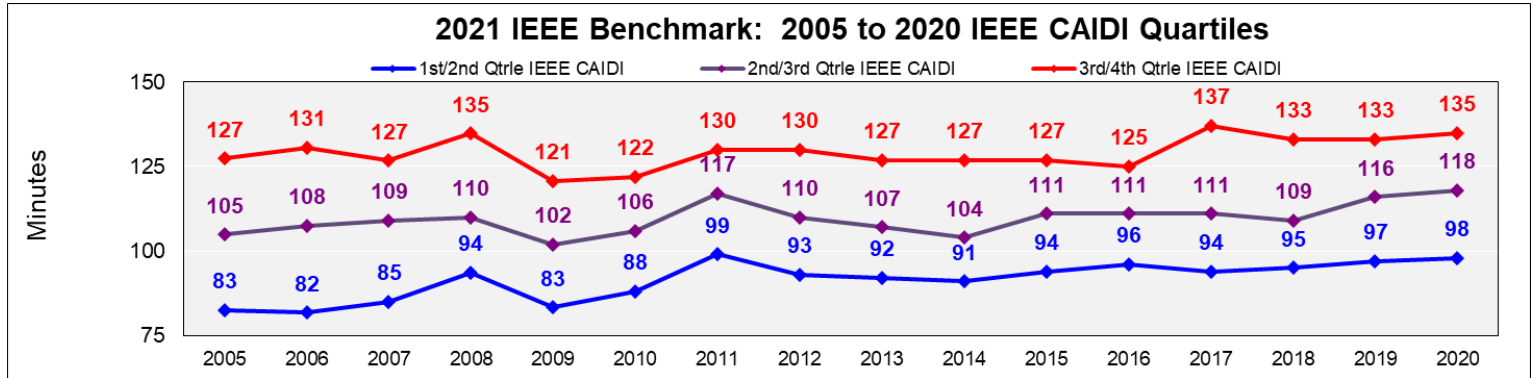
# Historic SAIDI-IEEE & Total



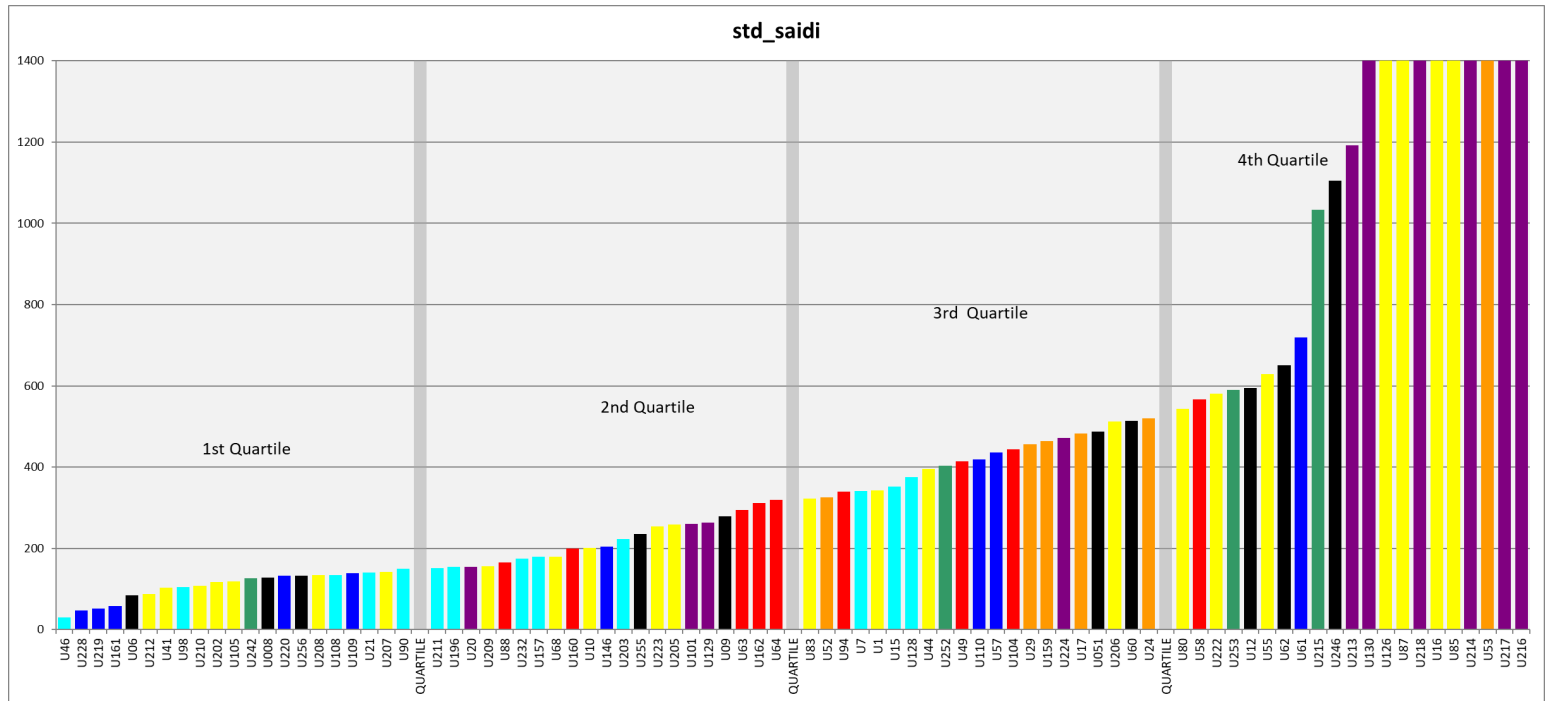
# Historic SAIFI-IEEE & Total



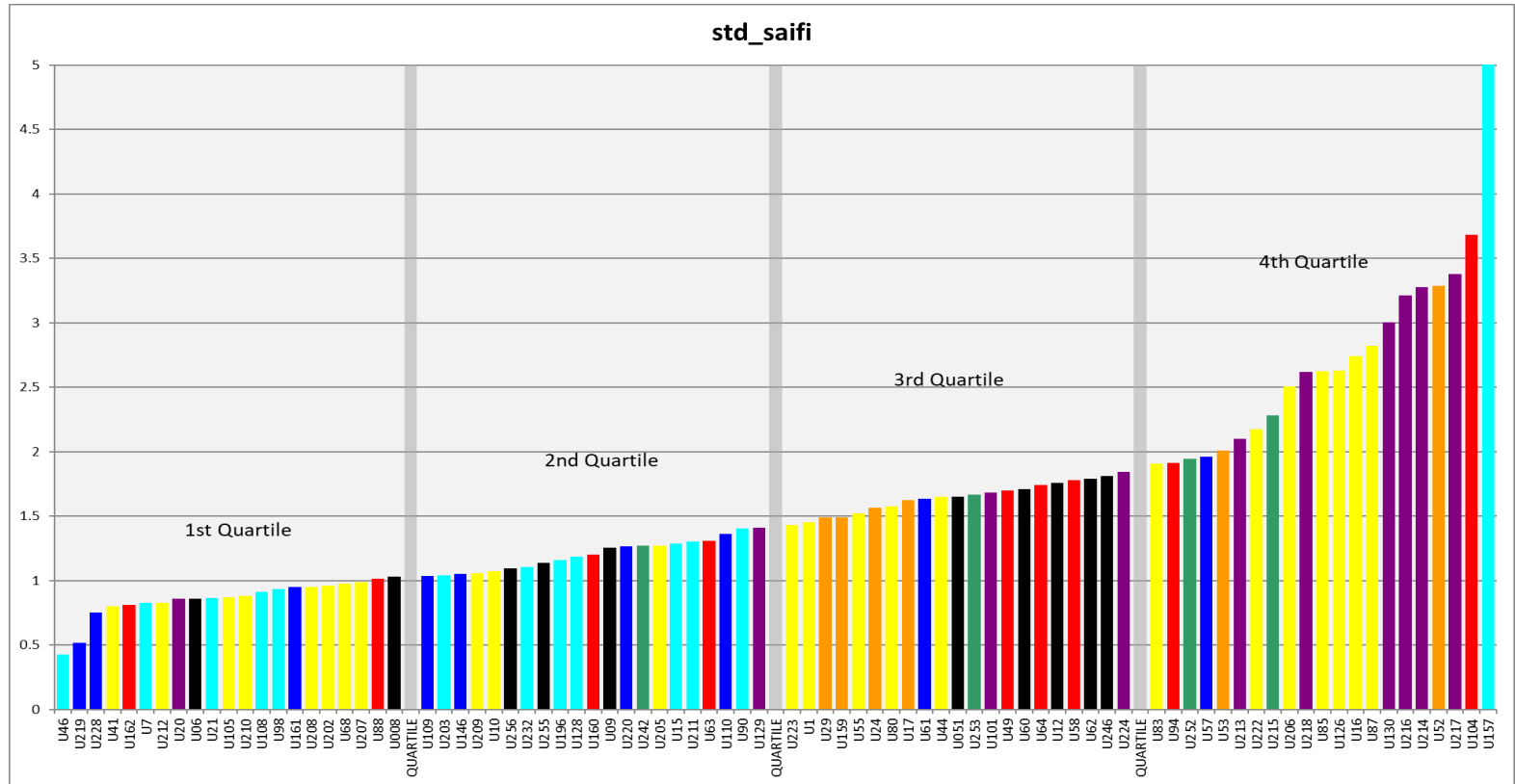
# Historic CAIDI-IEEE & Total



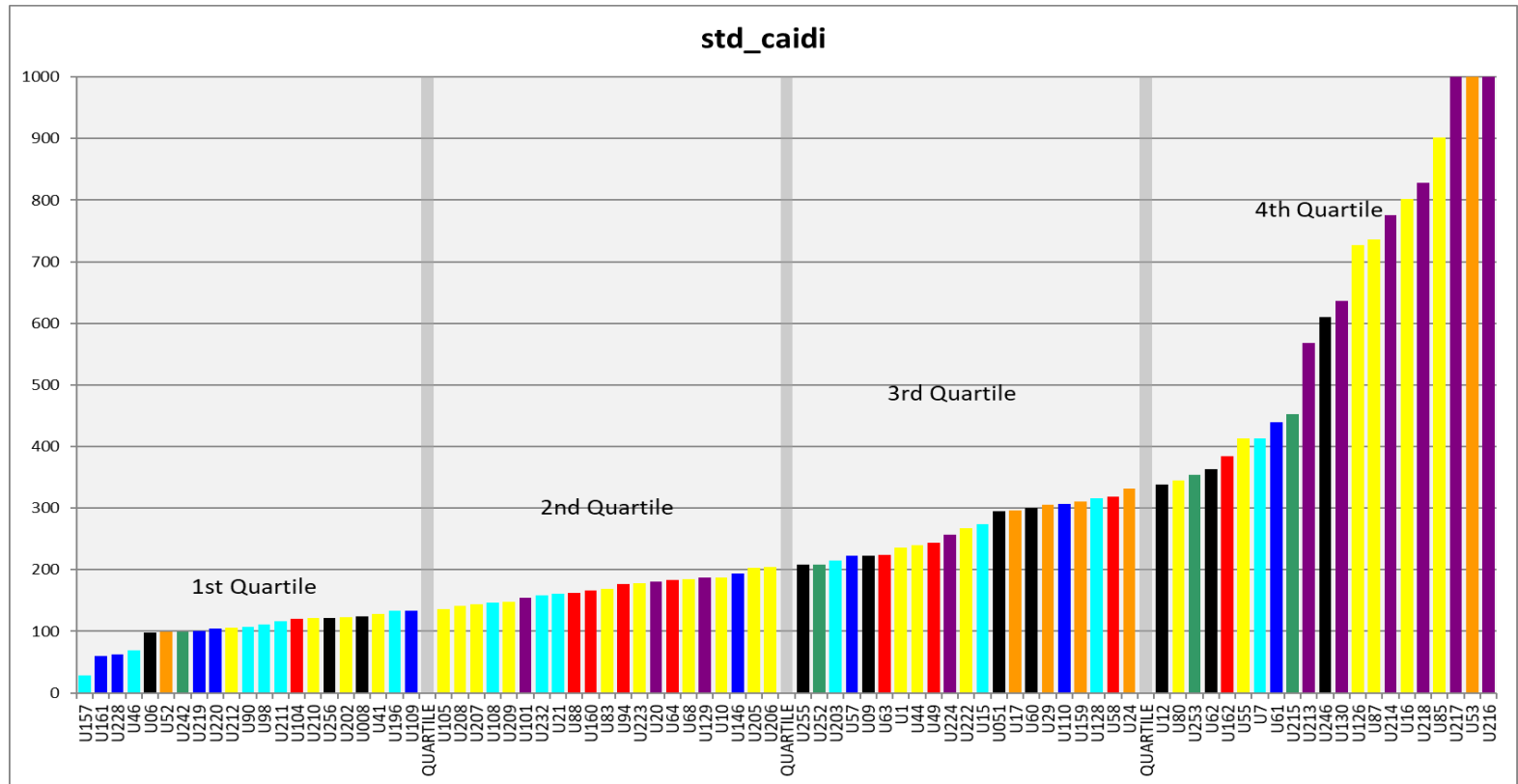
# Total (STD) SAIDI 2021



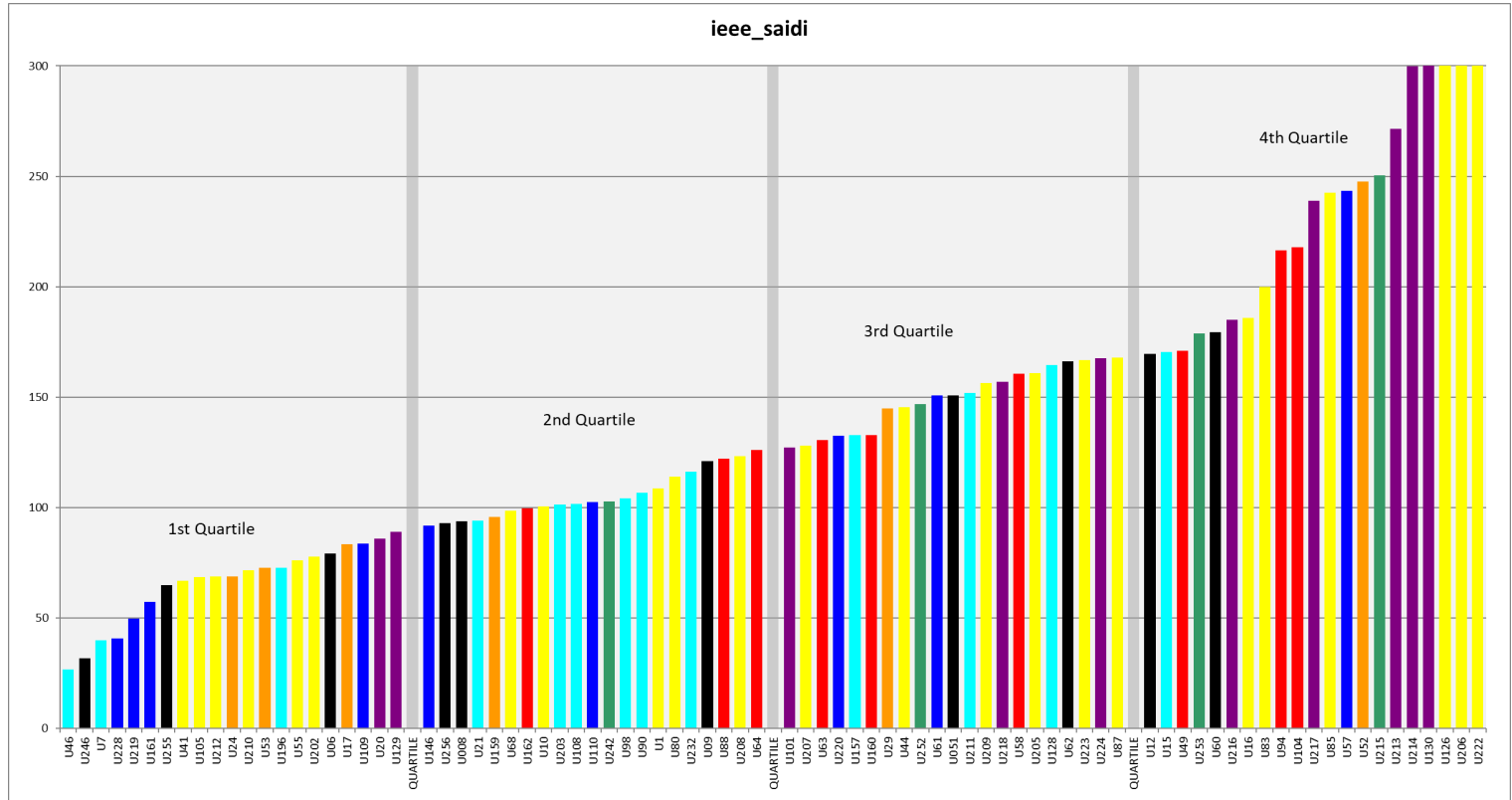
# Total (STD) SAIFI 2021



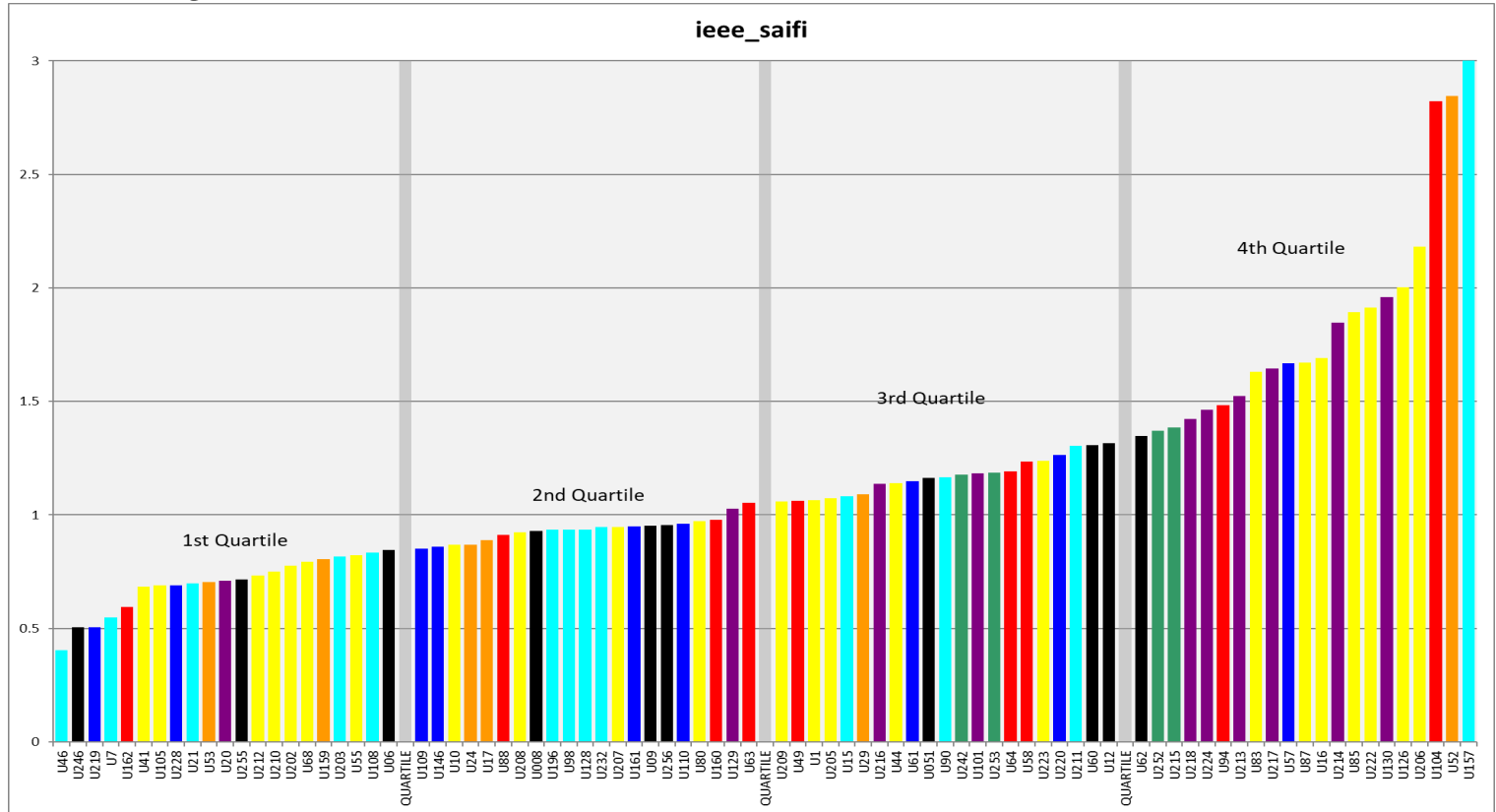
# Total (STD) CAIDI 2021



# Major Event Excluded (IEEE SAIDI 2021)

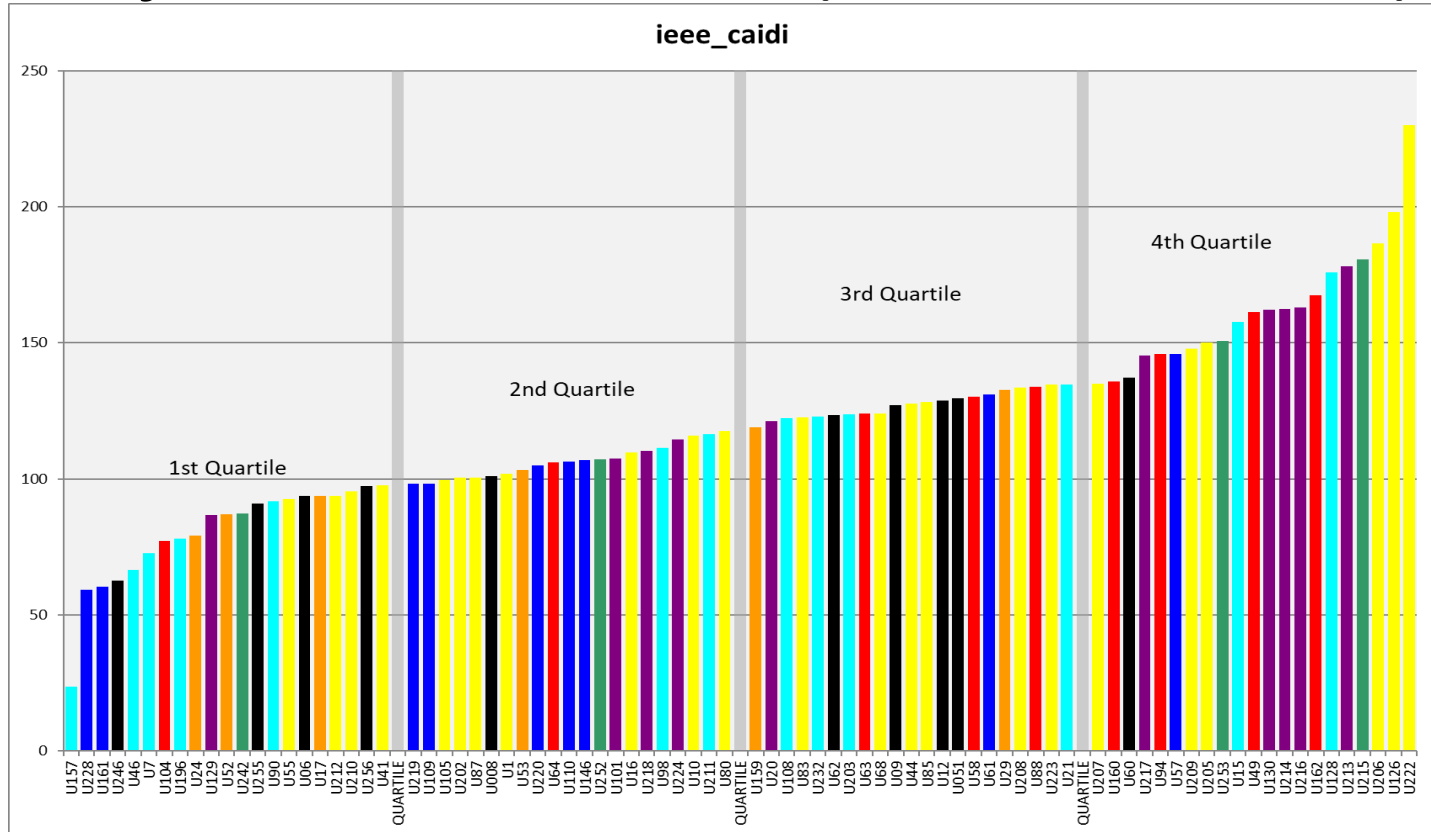


# Major Event Excluded (IEEE SAIFI 2021)





# Major Event Excluded (IEEE CAIDI 2021)



# Questions





# IEEE Benchmark Year 2022 Results for 2021 Data

2022 Distribution Reliability Working Group Meeting

July 20, 2022 Denver, CO



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# 2022 Benchmark Results

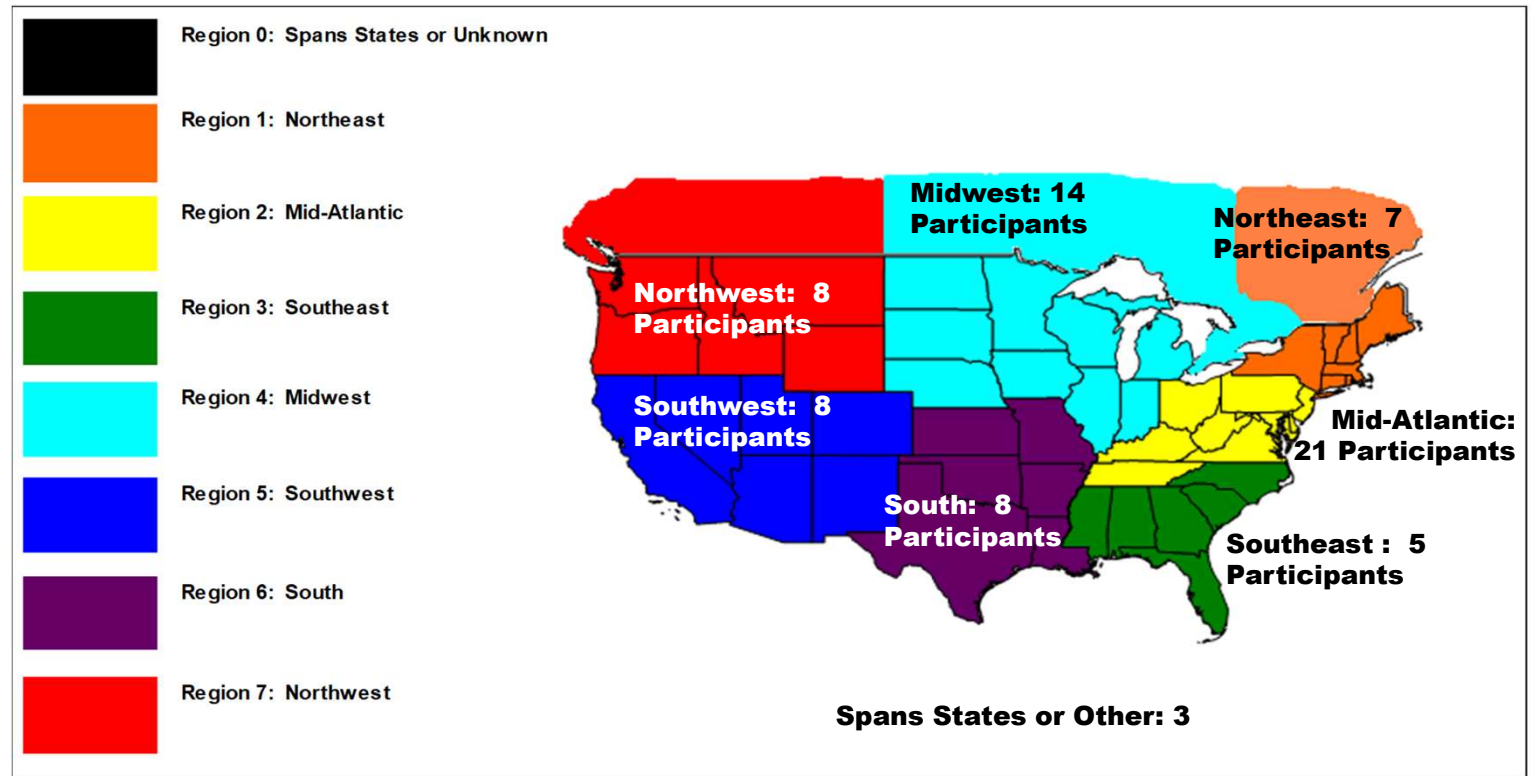
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For calendar data 2021



# Regions represented by the participants 2022 Benchmark Study

Reports on  
 reliability for  
 about 70 million  
 customers





# Respondents in 2022: 74

About 260 companies have responded during 20-year history

Weighted North American Performance	SAIDI (minutes)	SAIFI (interruptions)	CAIDI (minutes)
Total	543	1.62	335
Underlying	165	1.265	130
Underlying Distribution	153	1.113	137
Underlying Feed	12	0.153	77
Underlying Planned	17	0.10	164
Major Events	378	0.355	1,064
Major Event Distribution	342	0.297	1,151
Major Event Feed	37	0.059	623

74	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
MIN	28	28	27	27	0.28	0.25	0.24	0.24	48	48	55	55
Q1	161	97	93	86	1.10	0.87	0.77	0.69	130	103	105	102
MEDIAN	236	136	124	118	1.37	1.10	0.96	0.90	172	121	134	130
Q3	443	190	174	161	1.86	1.48	1.26	1.14	255	141	152	152
MAX	7454	456	431	400	4.78	3.73	2.34	2.01	2414	256	256	270





# Respondents by Utility Size

## Quartiles

UTILITY SIZE	N	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
SMALL	5												
	MIN	28	28	27	27	0.58	0.58	0.48	0.47	48	48	55	55
	Q1	92	82	56	40	1.05	0.93	0.61	0.48	87	86	92	86
	MEDIAN	212	201	144	119	1.46	1.46	1.39	1.18	106	89	104	95
	Q3	302	212	205	150	2.84	2.34	1.39	1.23	130	108	123	101
	MAX	621	402	289	185	4.78	3.73	2.34	1.58	146	146	147	151
MEDIUM	45												
	MIN	39	28	28	27	0.28	0.25	0.24	0.24	77	62	63	62
	Q1	154	97	94	86	1.11	0.83	0.74	0.68	133	108	113	114
	MEDIAN	219	136	120	115	1.35	1.08	0.95	0.88	182	126	135	134
	Q3	448	184	165	152	1.76	1.48	1.24	1.14	254	142	153	152
	MAX	7454	405	391	347	3.31	2.16	1.97	1.66	2414	218	222	251
LARGE	24												
	MIN	98	76	75	60	0.98	0.69	0.67	0.58	94	93	94	88
	Q1	177	100	93	88	1.10	0.88	0.86	0.84	141	103	105	105
	MEDIAN	273	139	149	125	1.37	1.09	0.99	0.94	176	117	134	130
	Q3	462	187	179	166	1.85	1.36	1.22	1.07	356	141	149	150
	MAX	1762	456	431	400	3.25	2.73	2.21	2.01	587	256	256	270



# Survey Info Collected

Network Devices	Survey Question	Yes	No
	Record transmission system	70	2
	Infer to substation	72	0
	Infer to breaker	72	0
	Infer to recloser	72	0
	Infer to fuse	71	1
	Infer to transformer	71	1
	Infer to customer	63	9

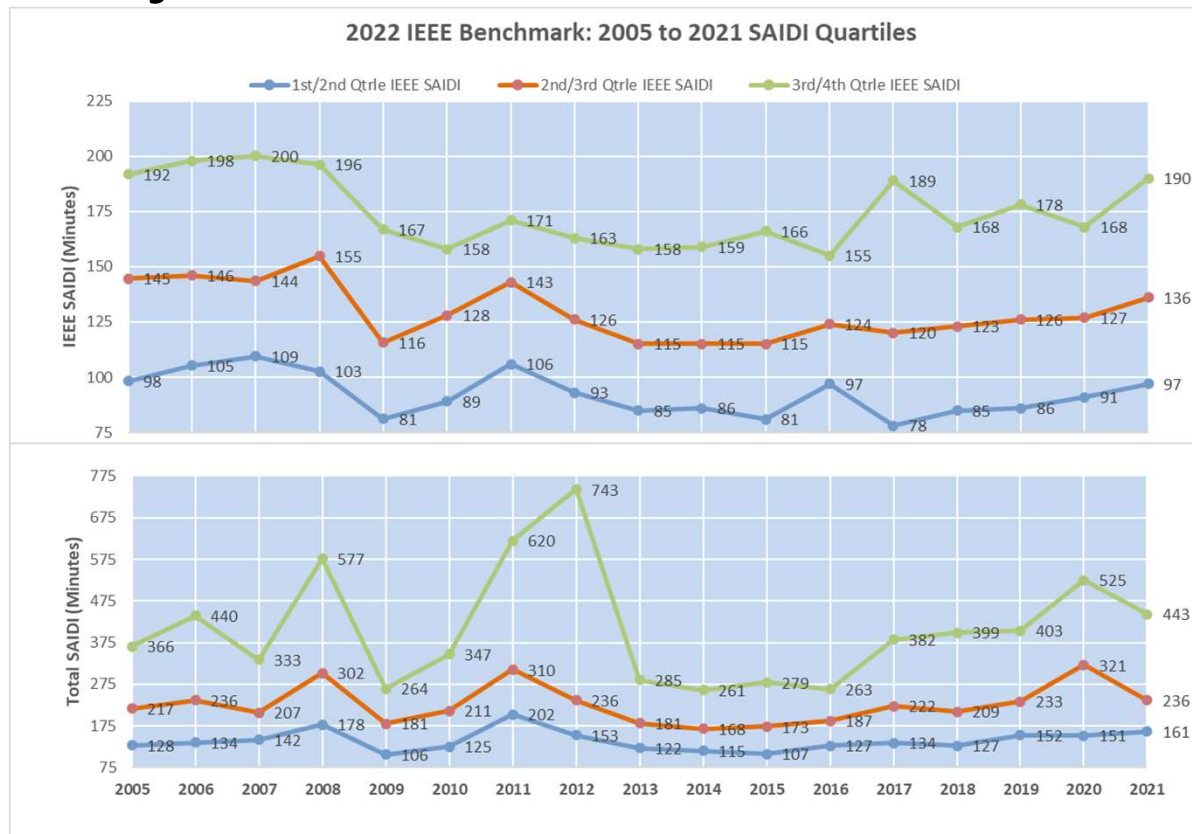
Computational Details	Survey Question	Yes	No
	Perform step restoration	72	1
	Computerized reporting system	69	3
	Use a connected model	64	8
	Model by phase	67	5
	Include inactive accounts	16	56
	Use year's average customer count	37	35

Major Event Days	Survey Question	Yes	No
	Use IEEE1366 to detect major events	68	4
	Calendar Day?	24	48
	Use a rolling 24 hours to discern tmed	15	57
	Use a custom period	9	63
Accrue to the beginning of the event	25	47	



# Historic SAIDI Quartiles

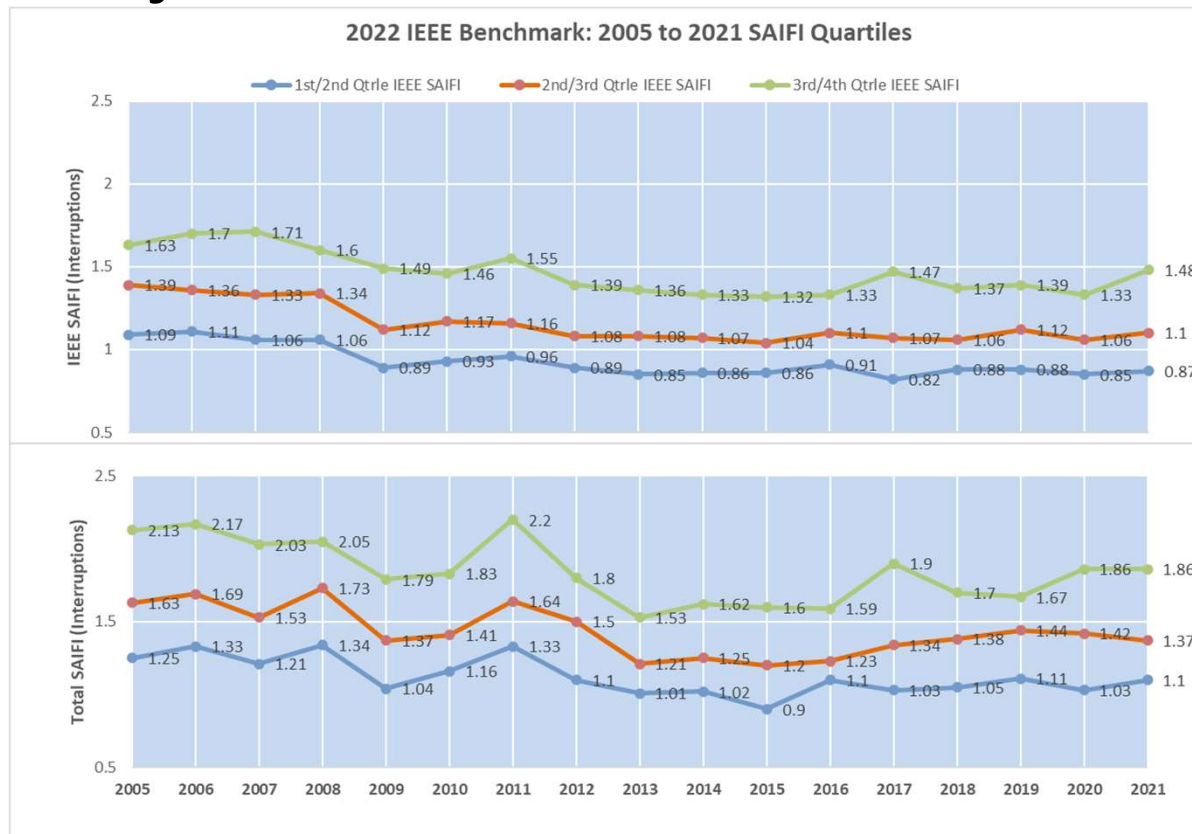
## Without Major Events & Total





# Historic SAIFI Quartiles

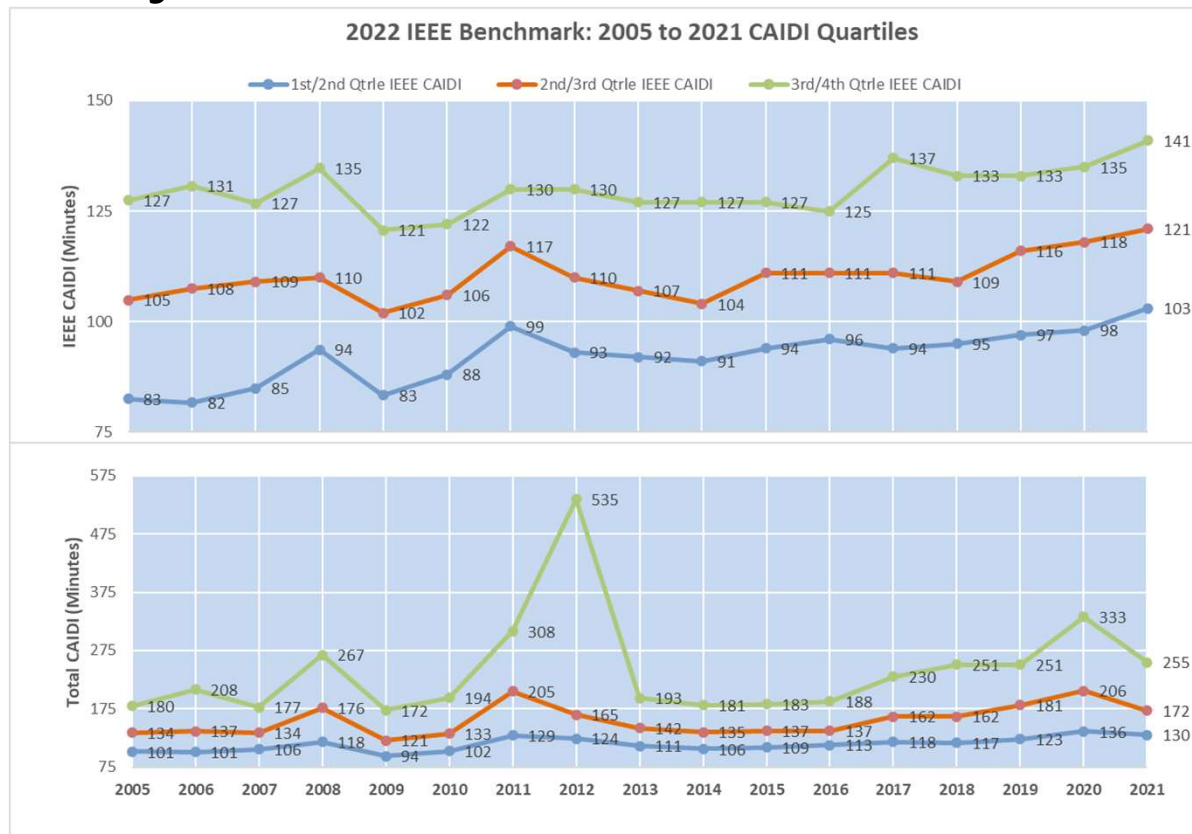
## Without Major Events & Total





# Historic CAIDI Quartiles

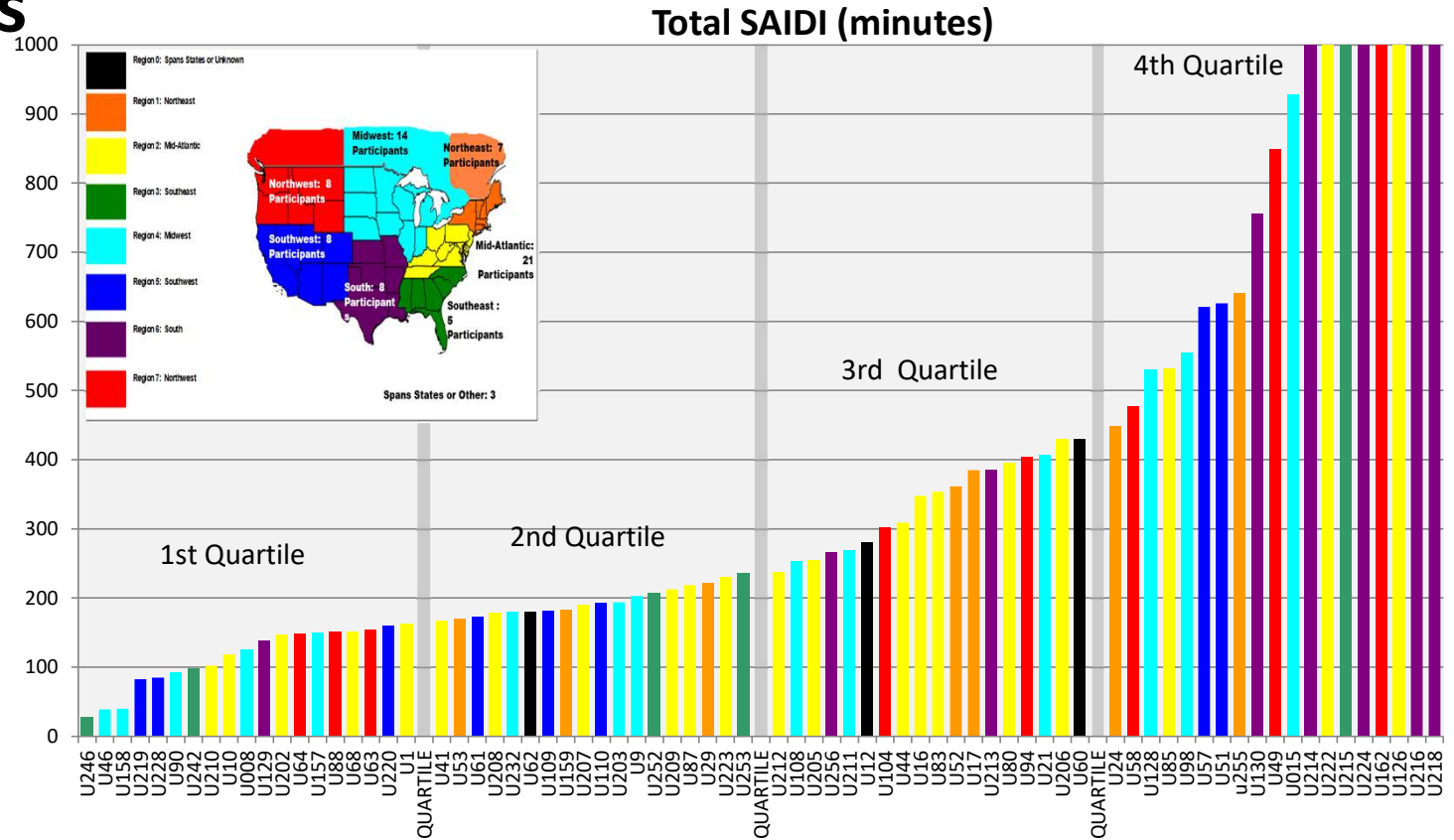
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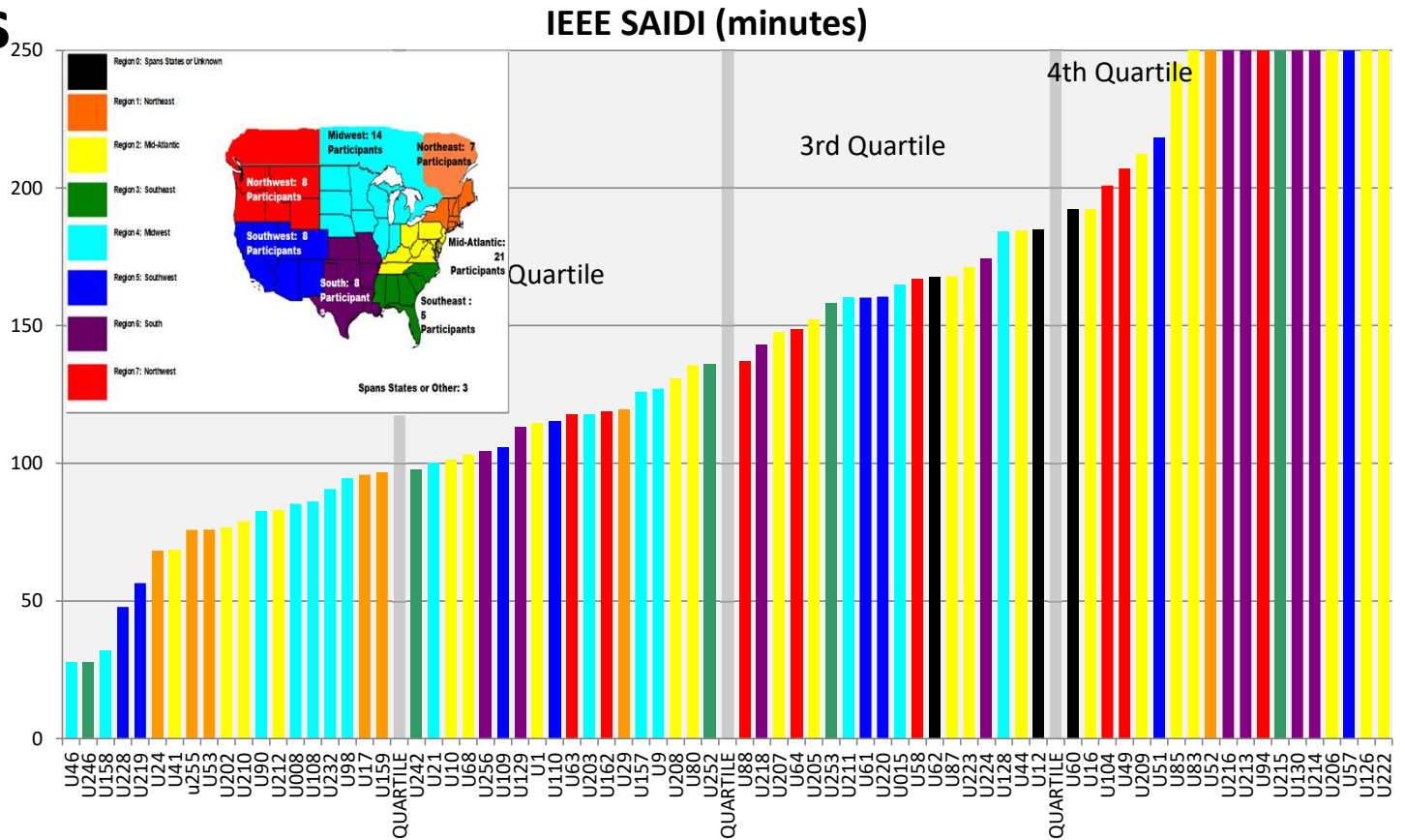


# Total SAIDI

## 2022 Results



# IEEE SAIDI 2022 Results

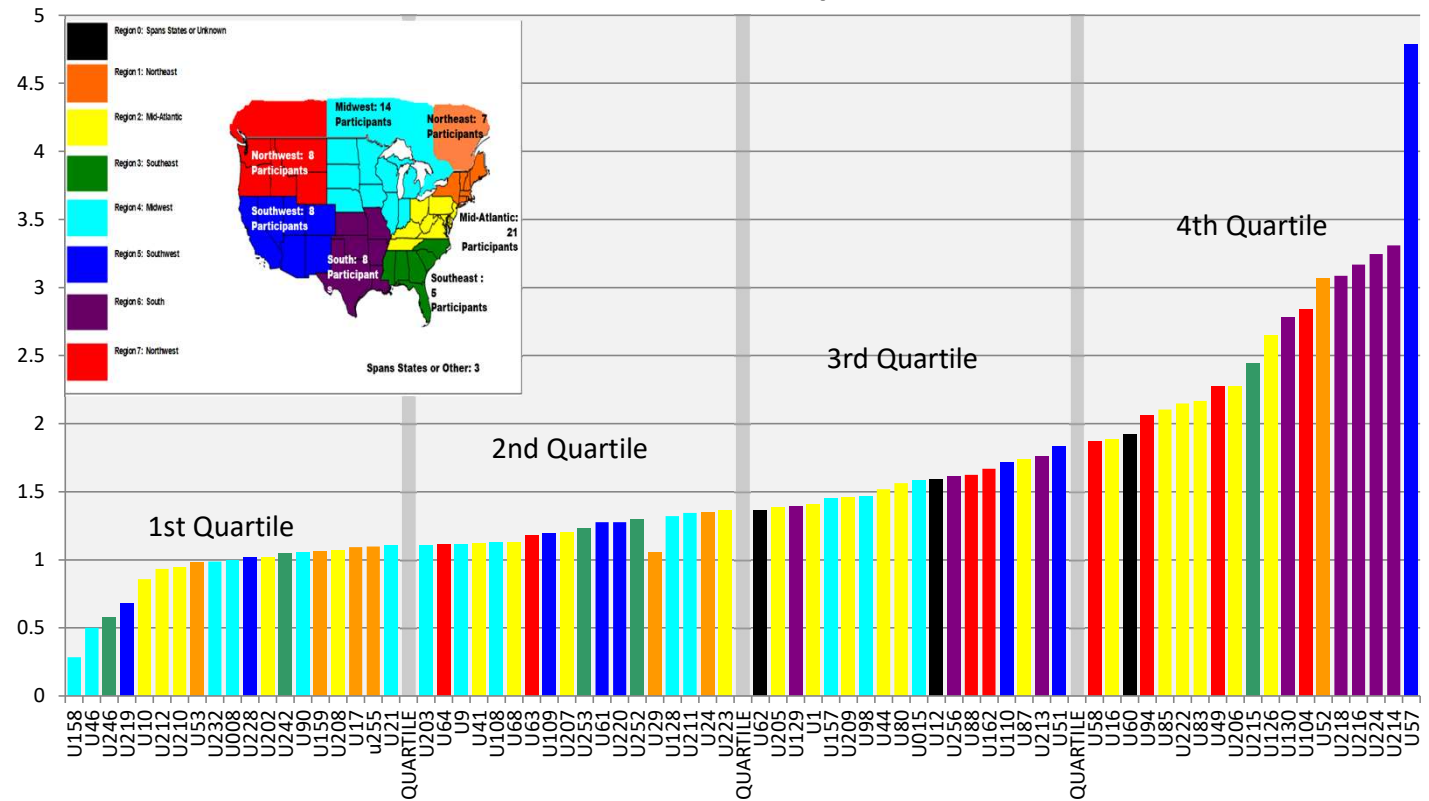




# Total SAIFI

## 2022 Results

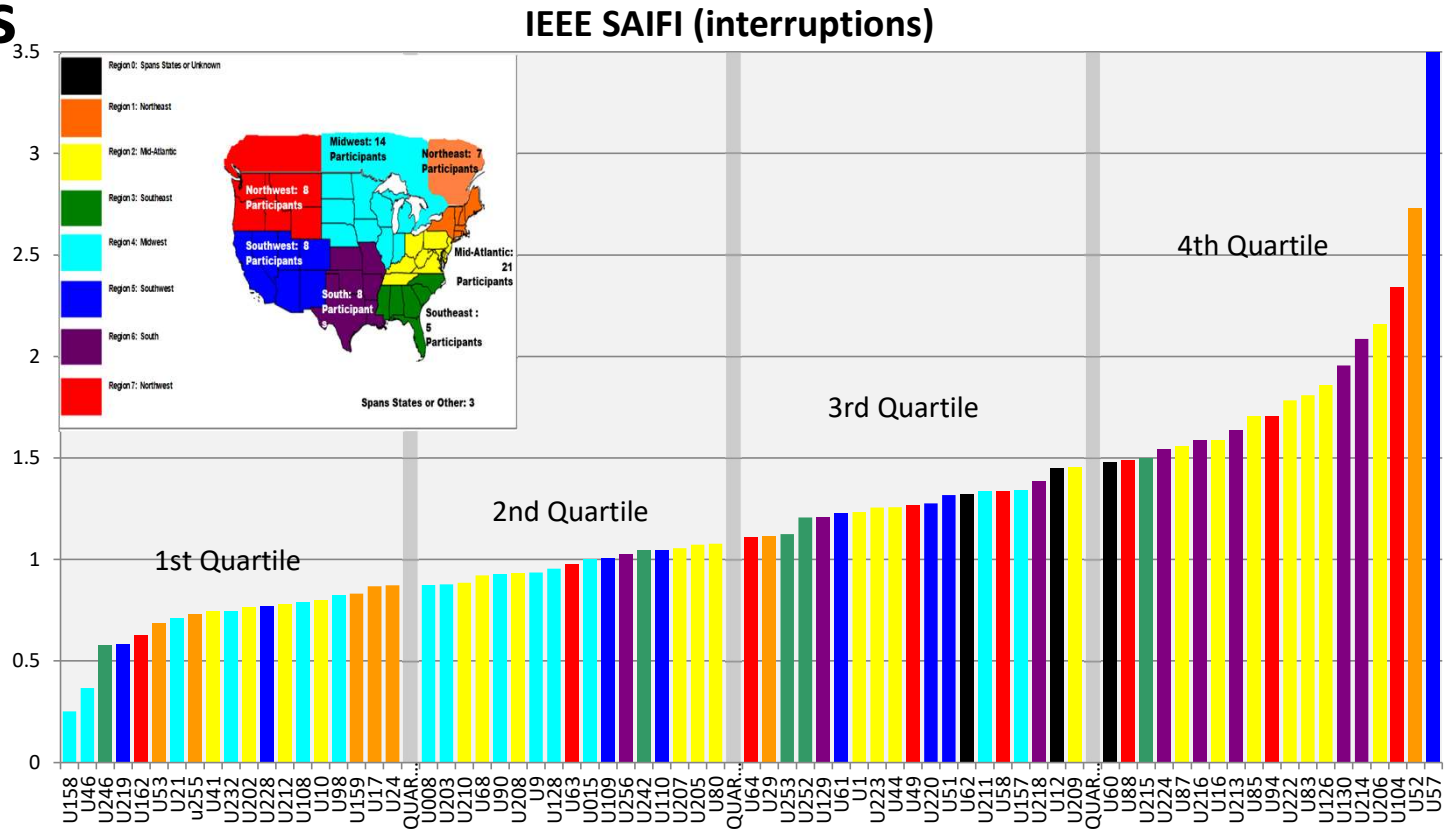
Total SAIFI (interruptions)





# IEEE SAIFI

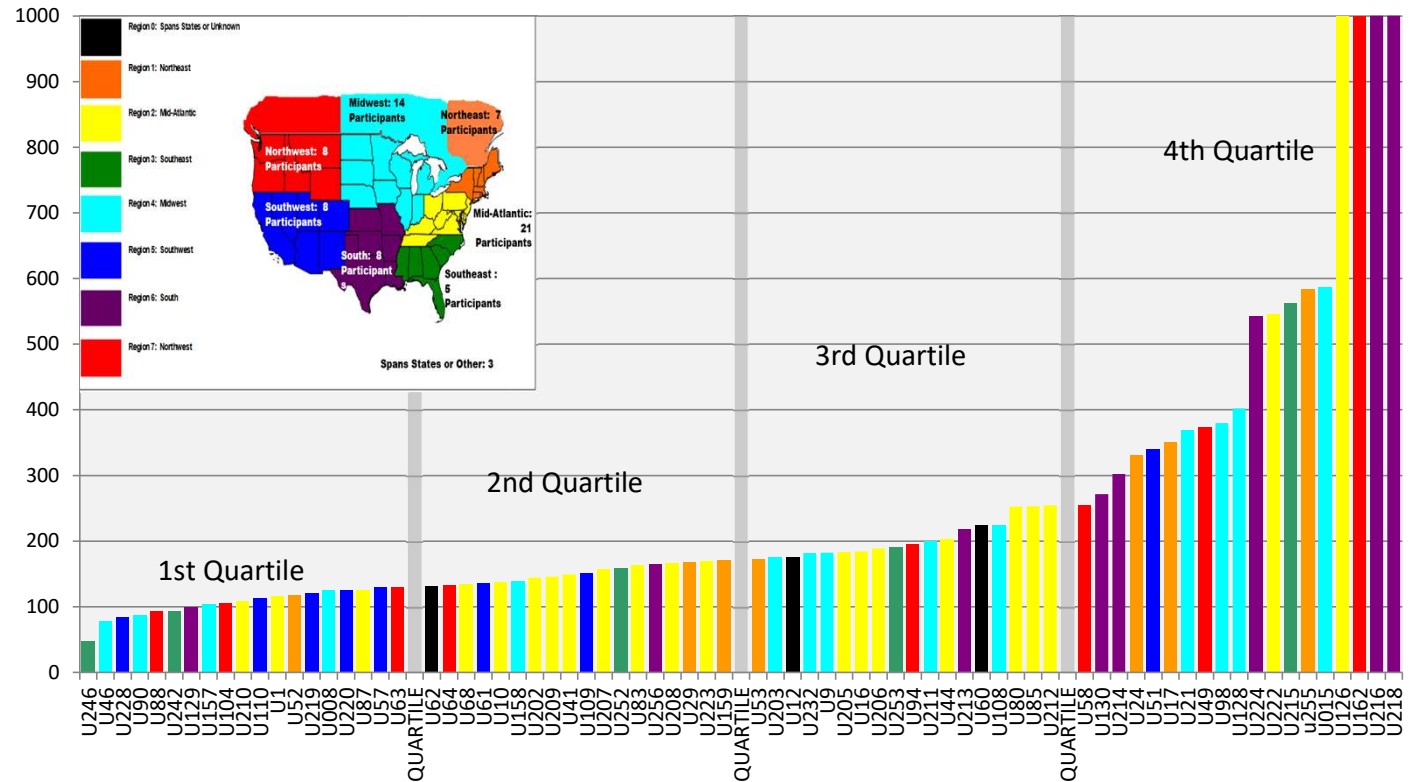
## 2022 Results



# Total CAIDI 2022 Results



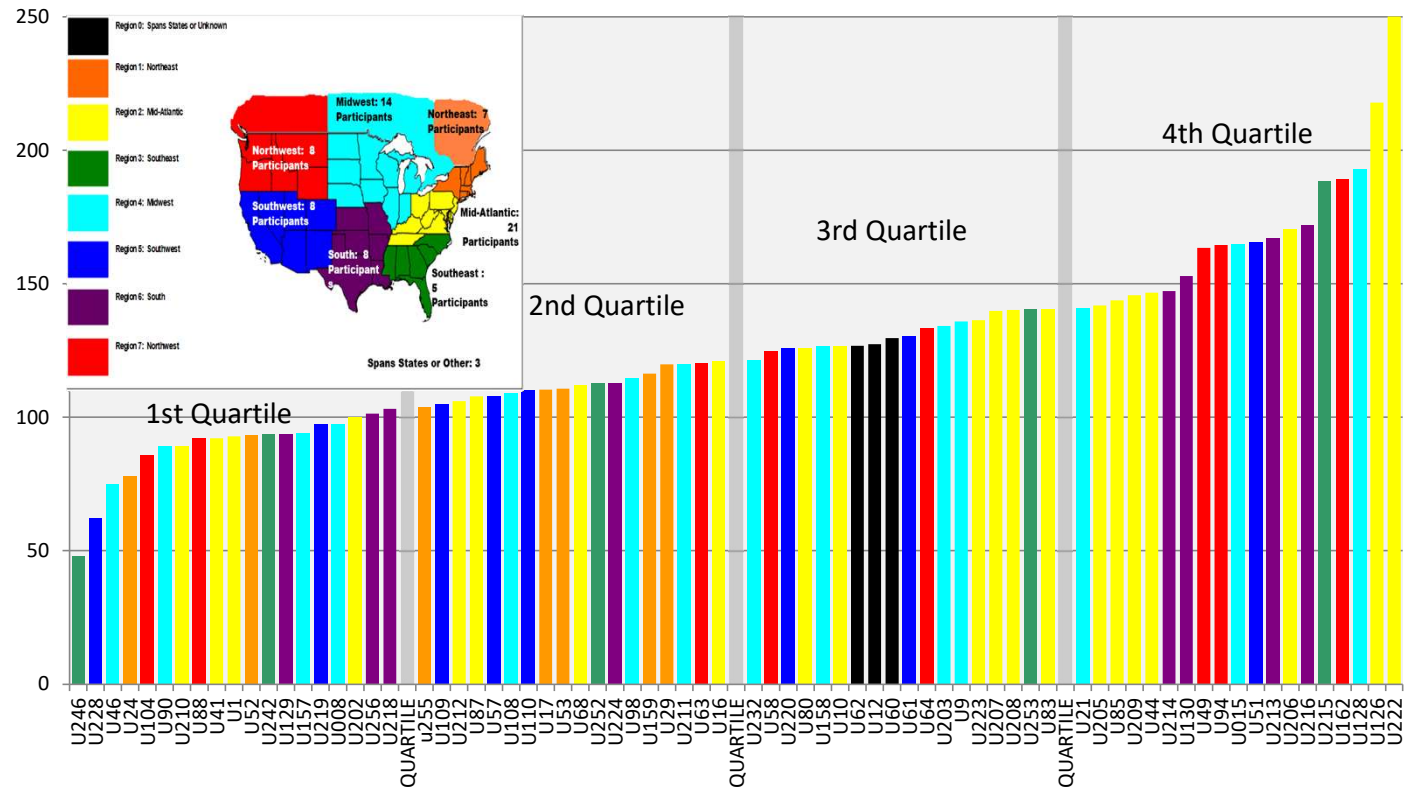
Total CAIDI (minutes)



# IEEE CAIDI 2022 Results



IEEE CAIDI (minutes)





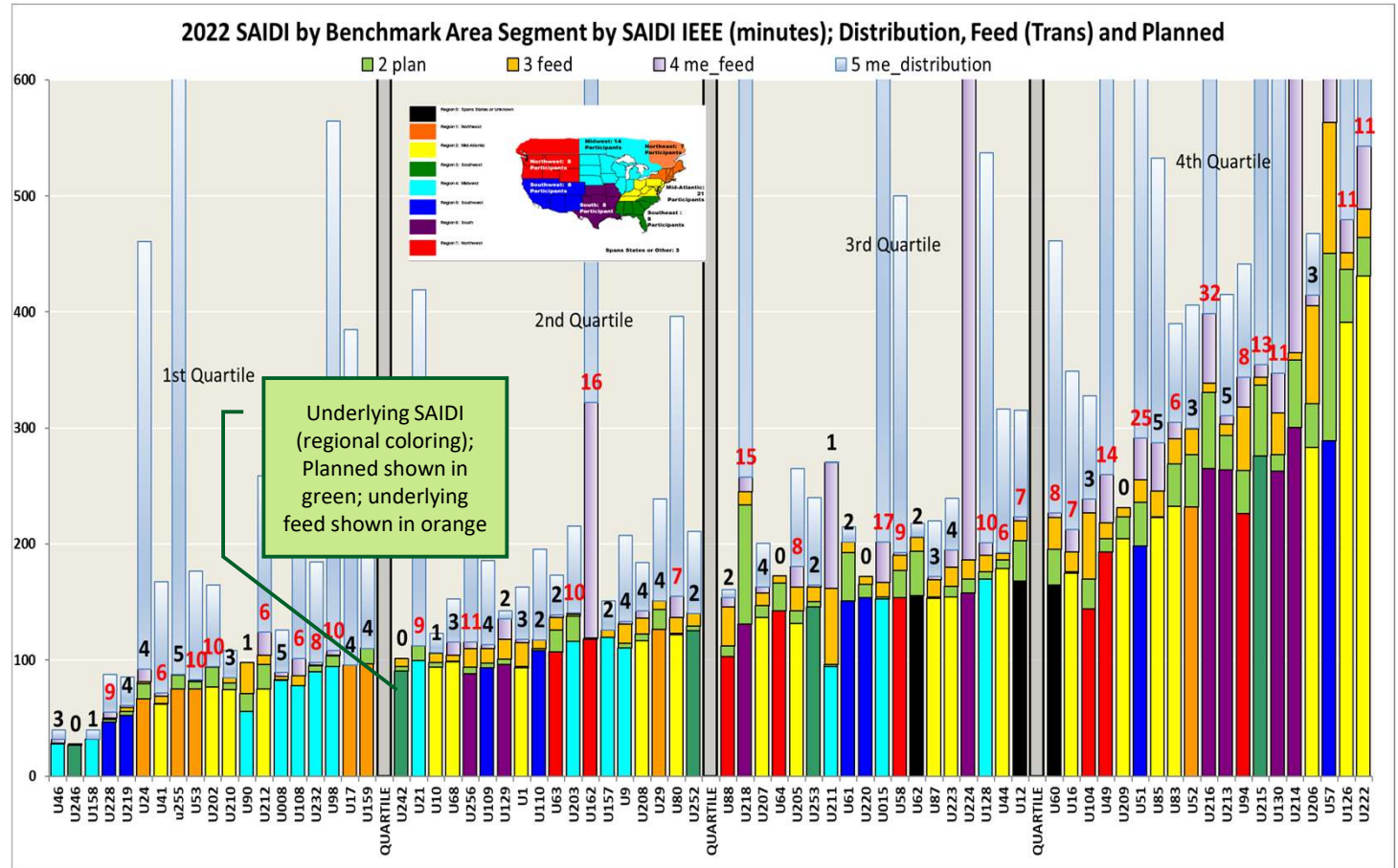
# Looking at Total Reliability Metrics

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By Responsible System/ME & Underlying

# Summary Graphs

- Peer utilities provide
- Total daily data,
  - After removing transmission outages and
  - After removing transmission and planned outages.
- We calculate:
- Major events
  - Underlying distribution
  - Underlying feed (transmission and loss of generation)
  - Planned
  - Major event distribution
  - Major event feed
- The stacked bars show them, sorted in IEEE SAIDI performance.



# Summary Graphs

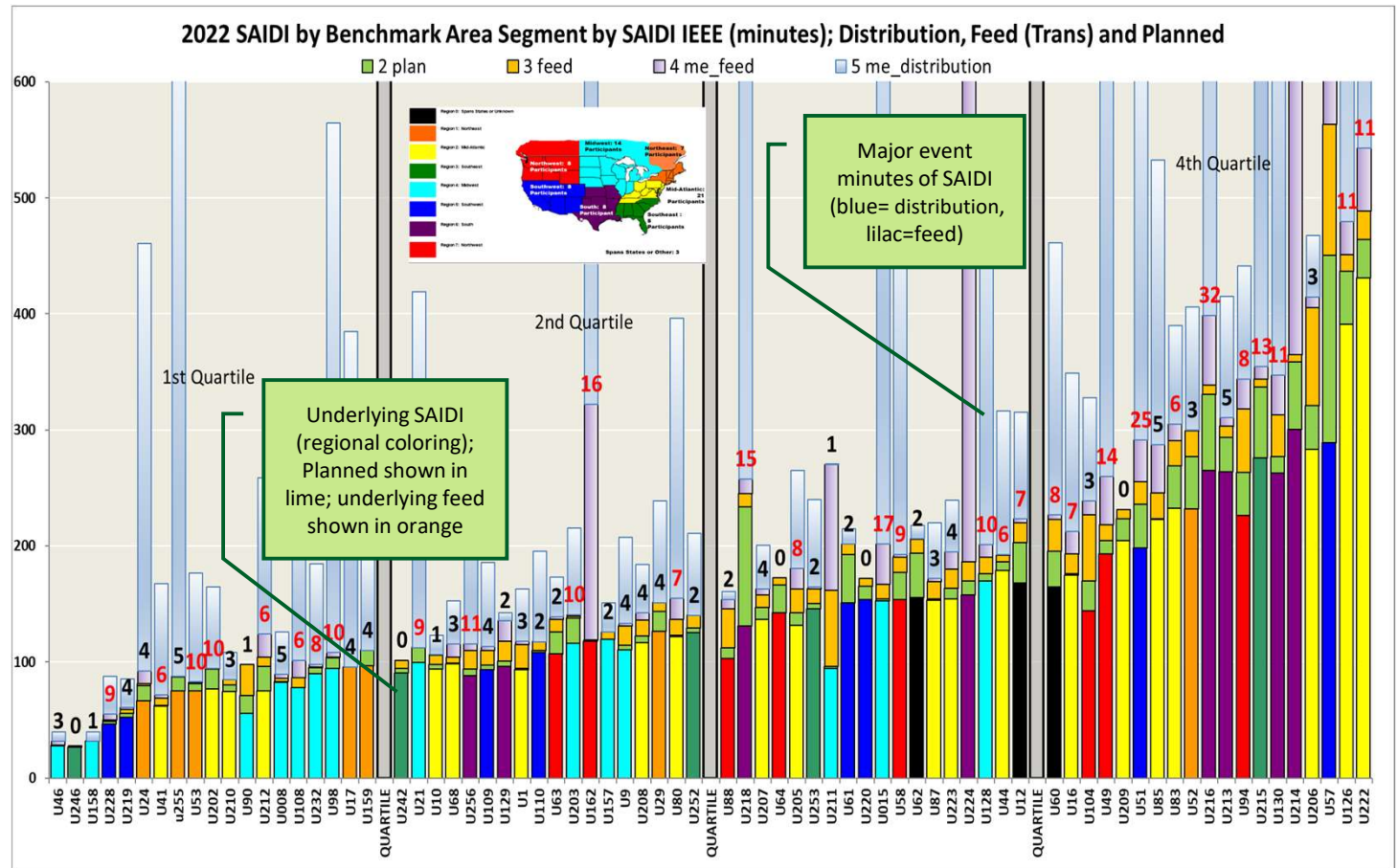
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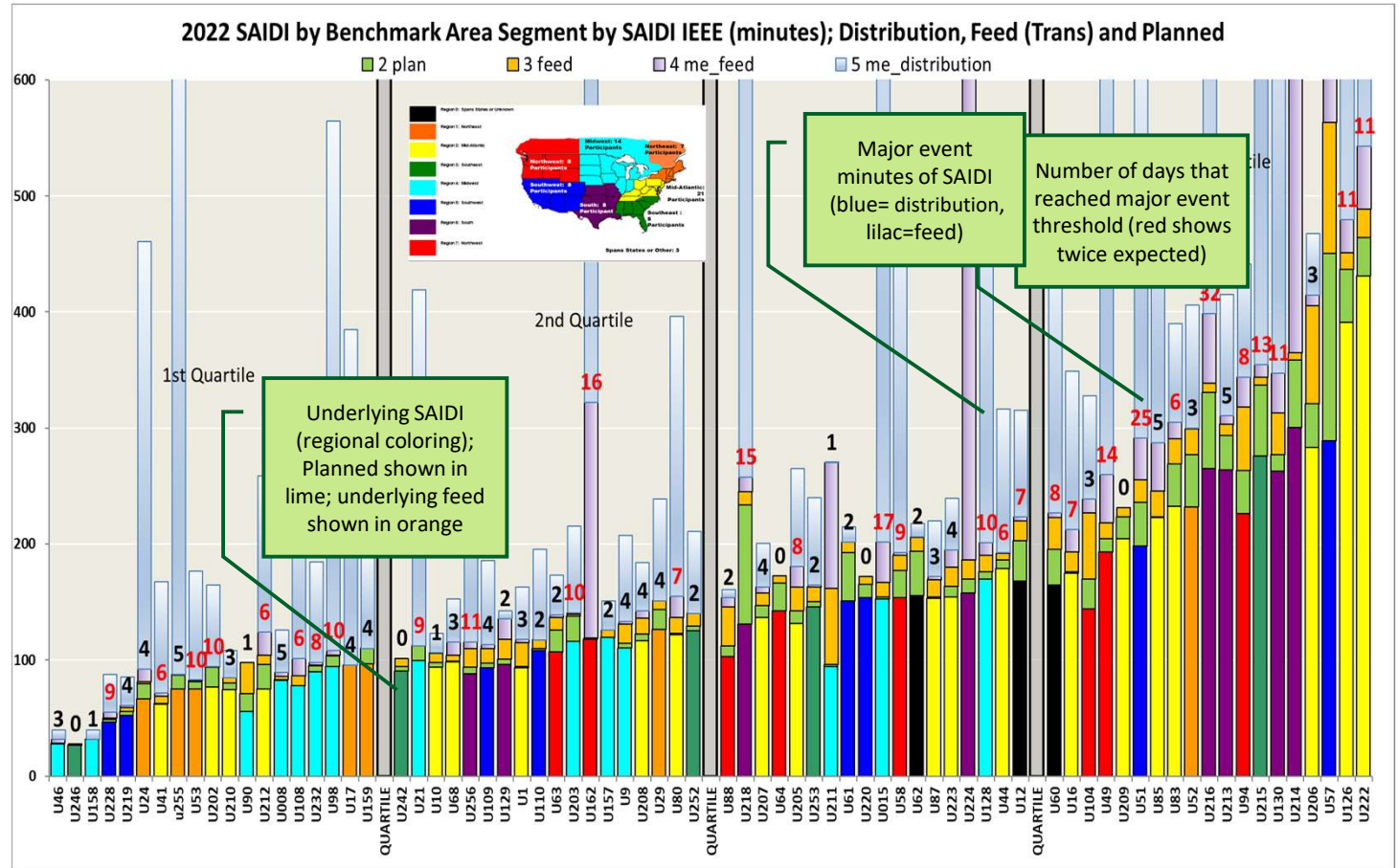
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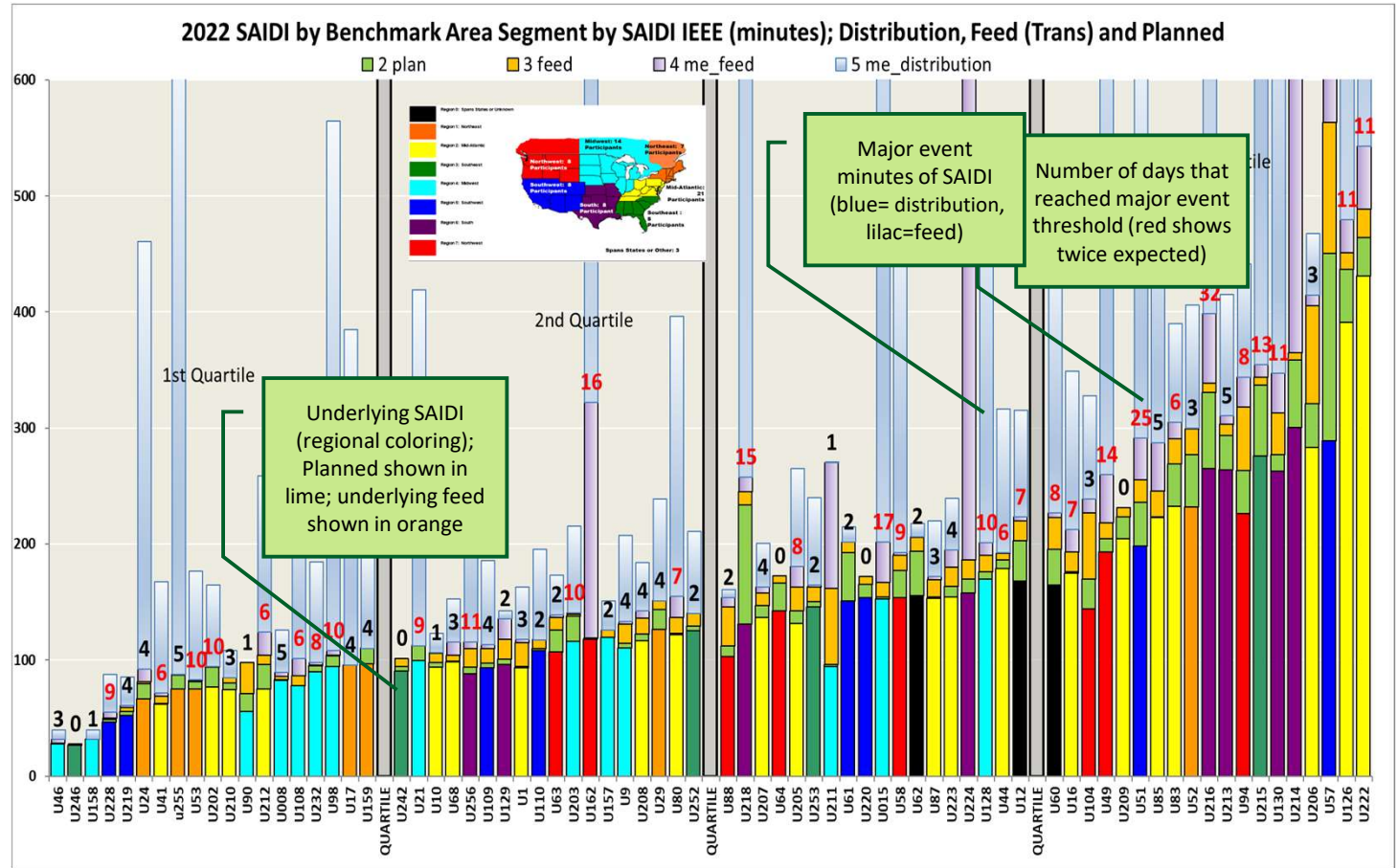
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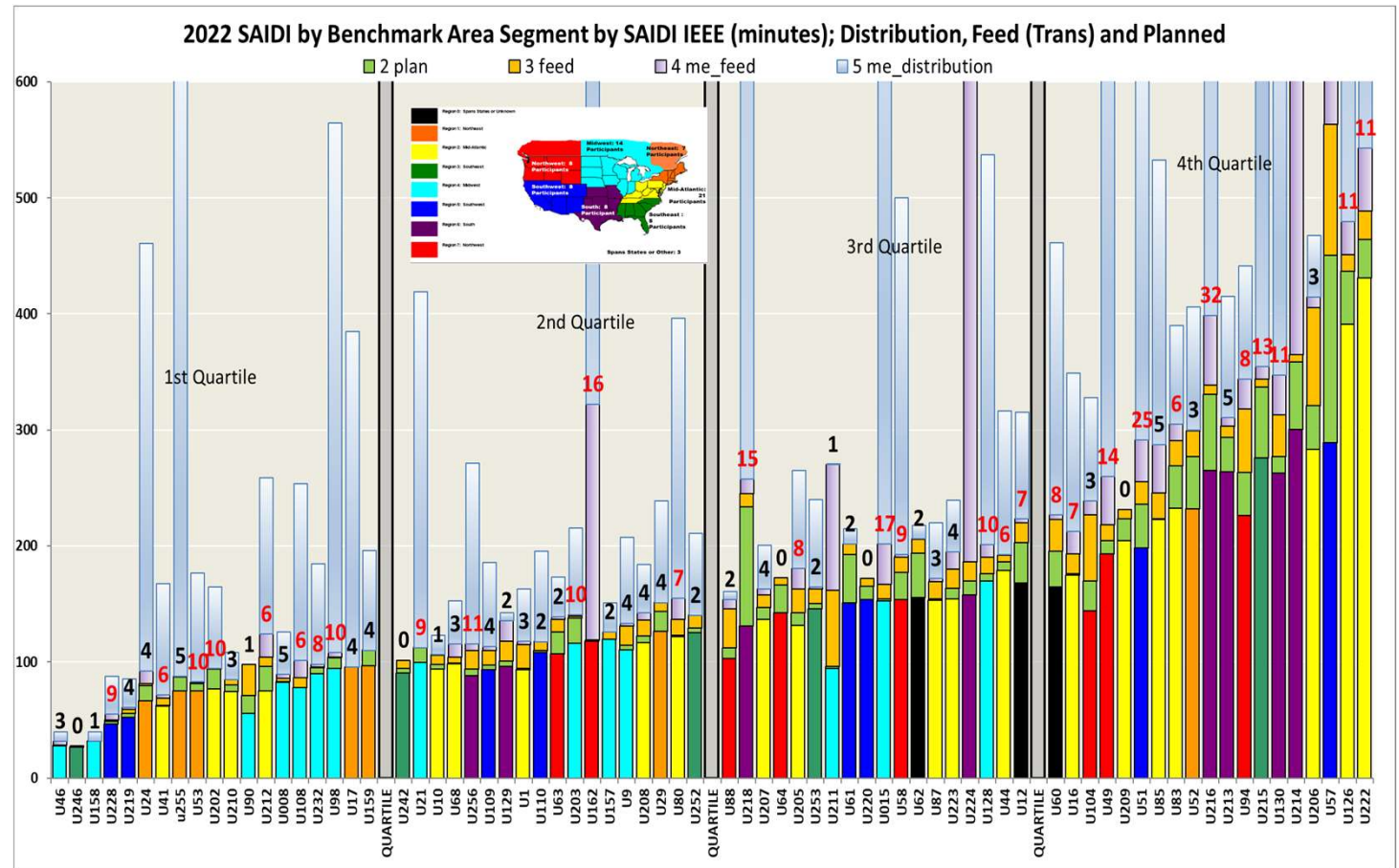
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# The Year's Extreme Events

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## Evaluation of Major Events

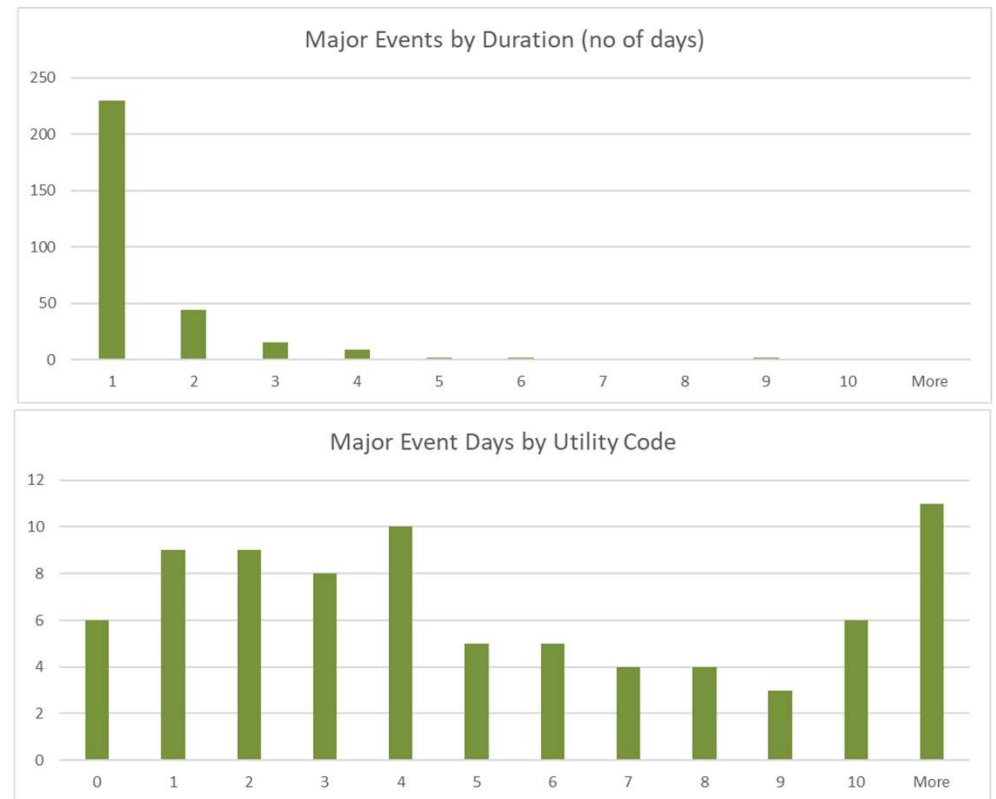


# Major Events During 2021

## 2021 results included a larger than expected number of major event days

Peer utilities' stats

- Average of 6.2297 major event days per utility
- Median of 5 major event days per utility (double the expected 2.3)
- Only 6 companies did not experience any major events
- 230 of the days were single day events, where the next day performance was below  $t_{med}$
- On average 69 million customers experienced 372.38 SAIDI minutes of major events across North America



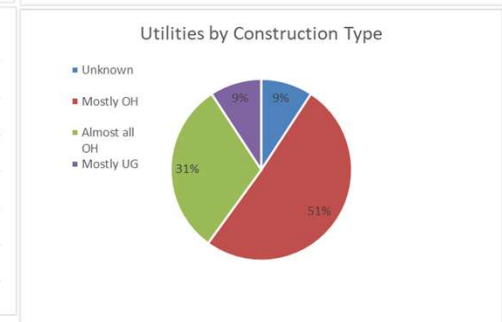
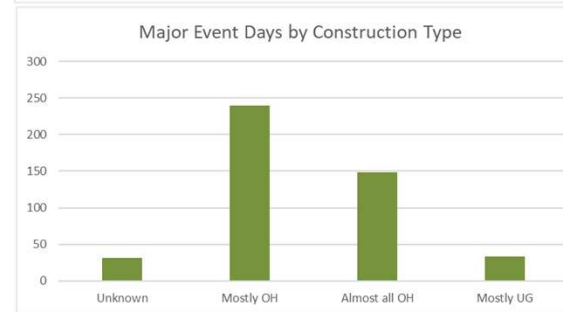
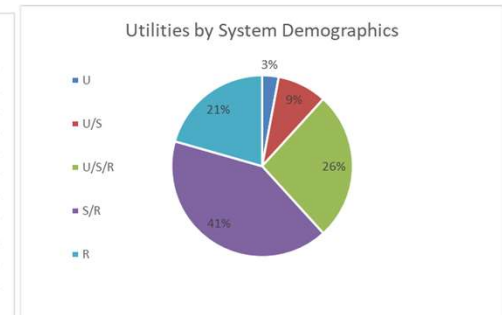
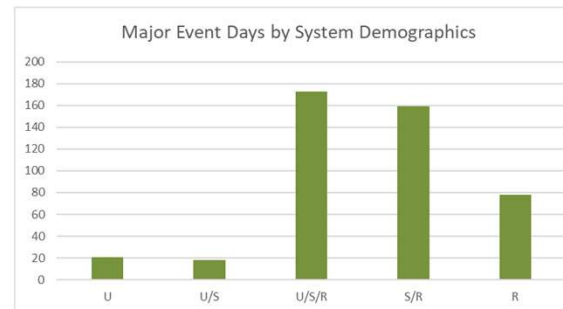


# Major Events During 2021

## Individuals have asserted that rural utilities have higher experiences of extreme events

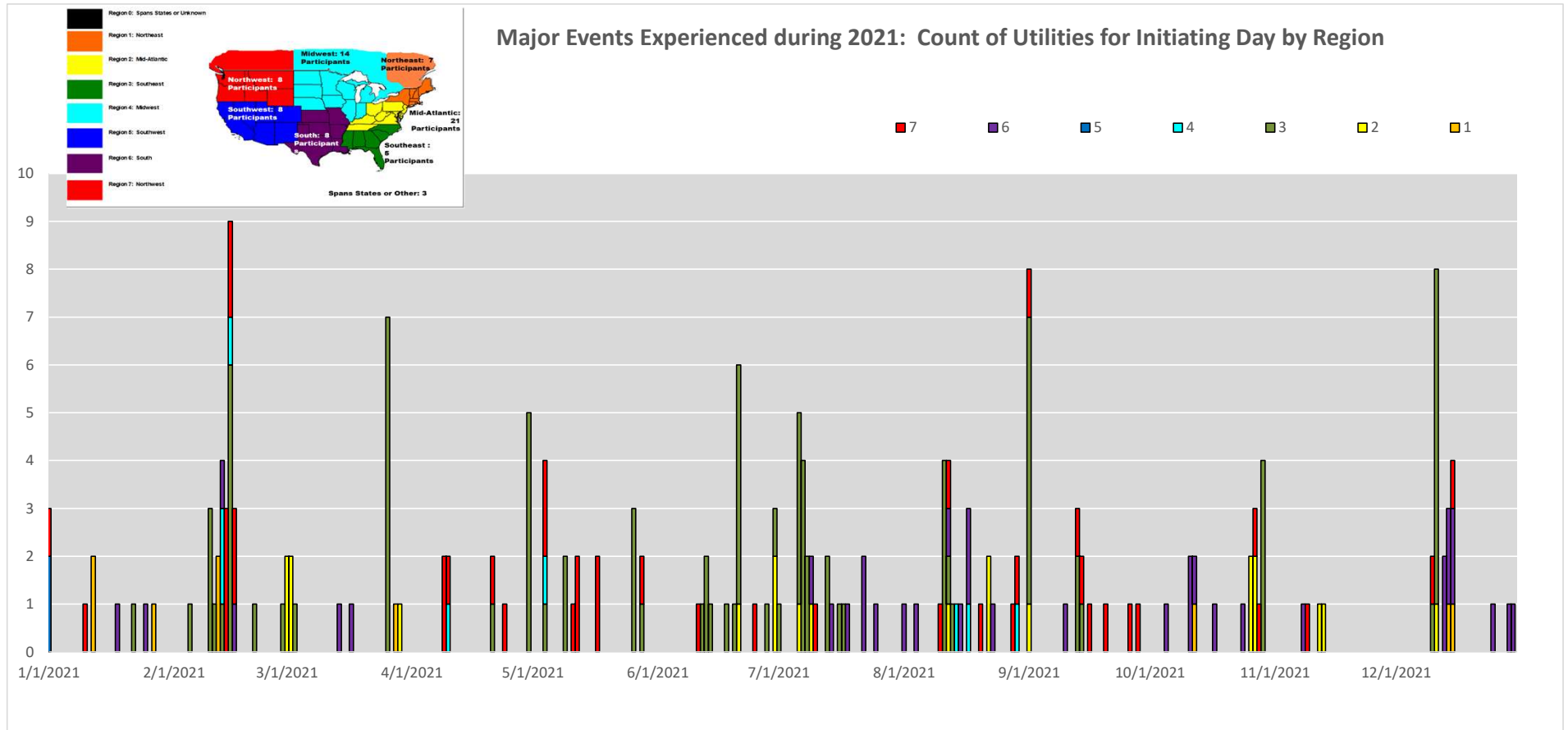
### Peer utilities' stats

- Use cust/mi and assessment of customers by circuit type to determine groupings.
  - Rural (R) < 24 cust/mi
  - Suburban/Rural (S/R): 24 to < 41
  - Urban/Suburban/Rural (U/S/R): 41 to < 60
  - Urban/Suburban (U/S): 60 to < 81
  - Urban (U): 81 and above
- Percentage of overhead:
  - Mostly UG has 50% or more underground,
  - Mostly OH has overhead percentage from 50-80% and
  - Almost all OH is 80% or more



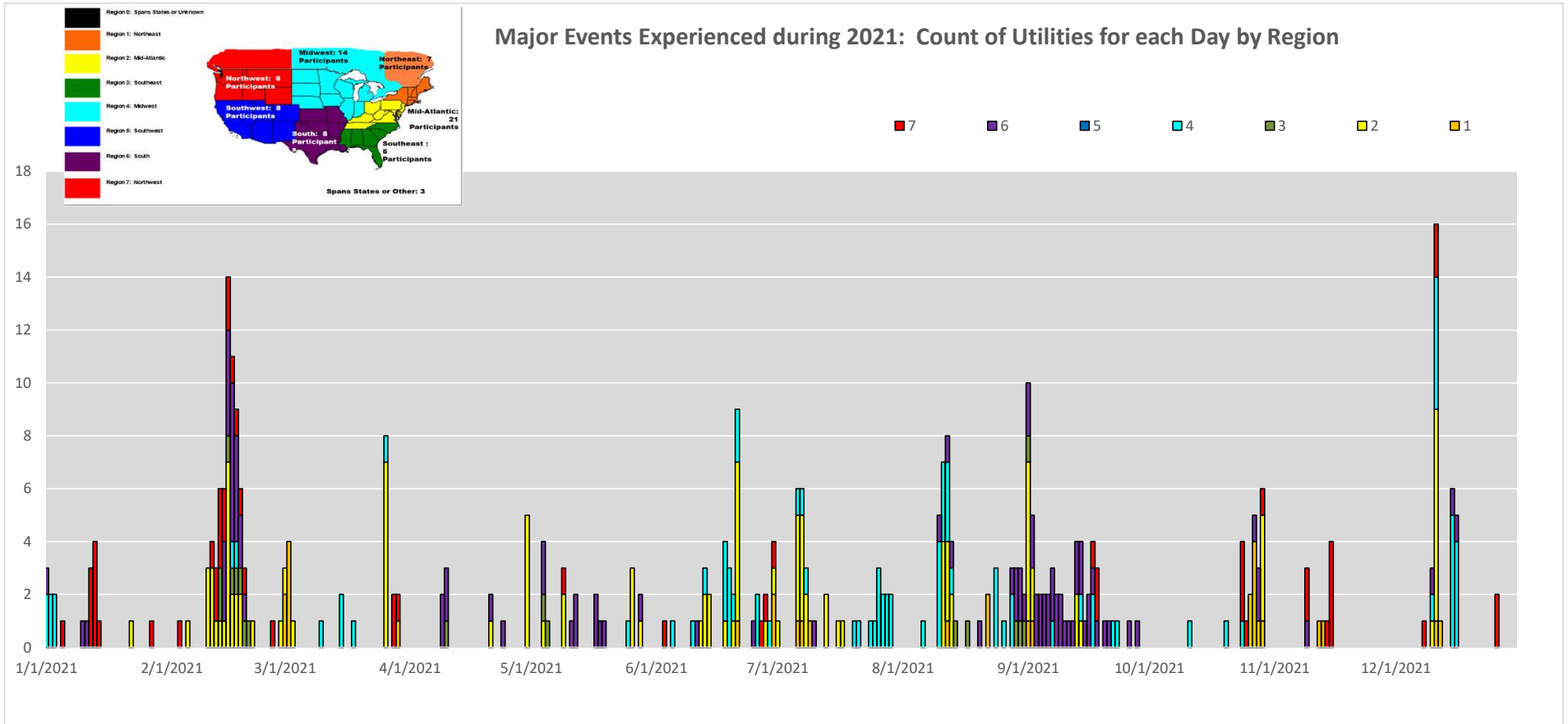


# Major Event Experiences During 2021





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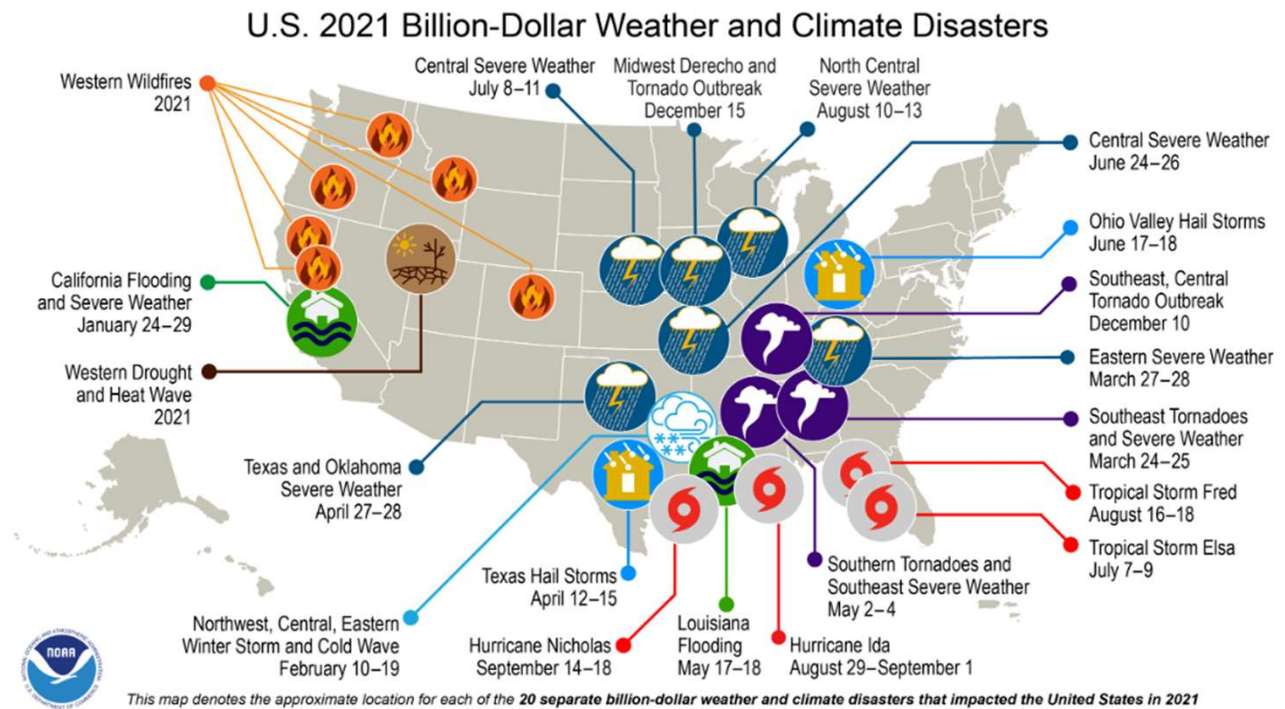




# Climate At a Glance for 2021

NOAA  
produces  
statistics  
about  
billion  
dollar  
climate  
events

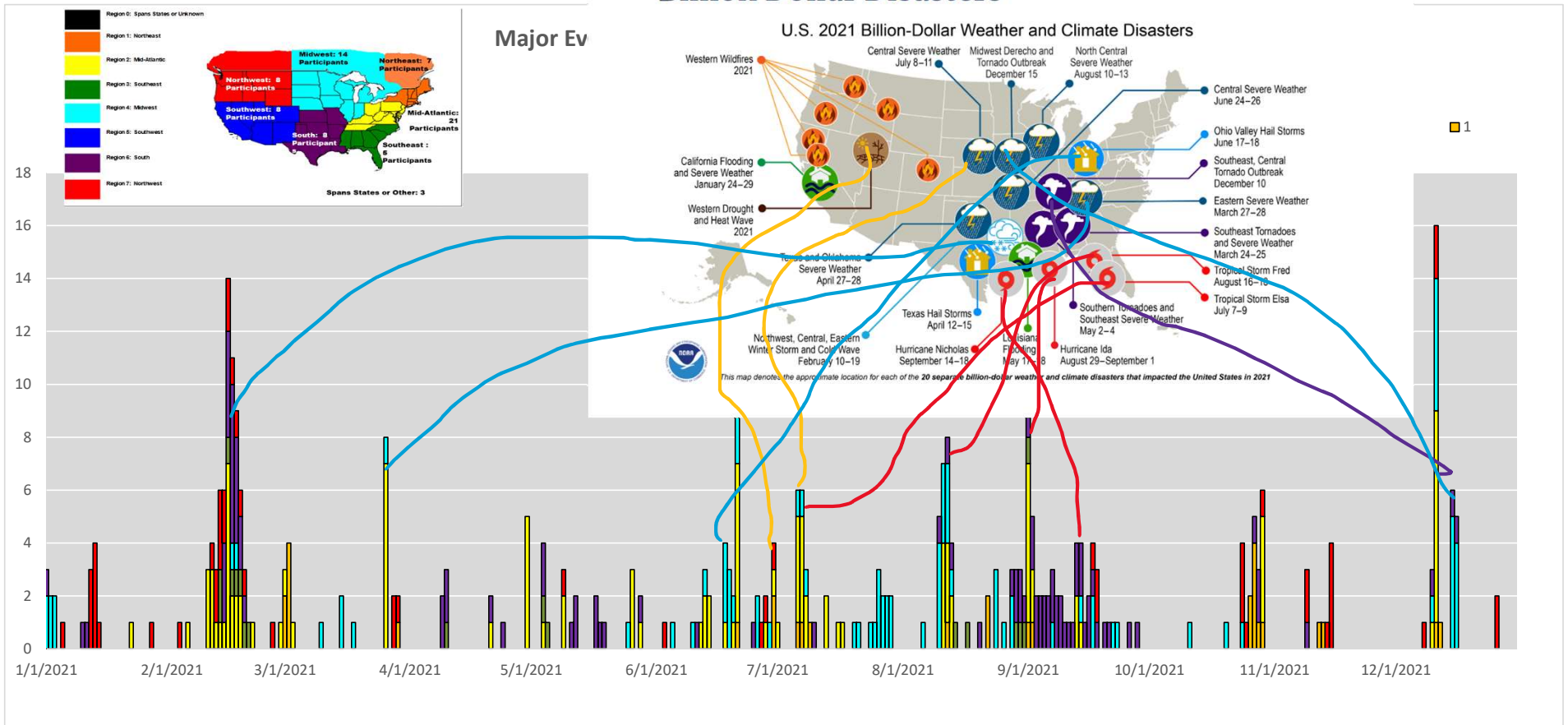
## Billion Dollar Disasters





# Major Events vs NOAA Climate Events Reported

## Billion Dollar Disasters









## Summary

**While 2021 had many major event days, years prior did also**  
**The daily SAIDI for many companies do not appear to be**  
**“normally” distributed**  
**Analysis of application of the statistics might be worth**  
**considering**  
**Some of the companies may provide rich data for distribution**  
**resilience metrics under development**  
**Is the work done previously by Catastrophic Event Task Force**  
**worth refreshing?**

# Questions





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## IEEE 1366-2003/2012

- addresses data issues by clearly defining the rules (i.e. what data should be excluded)
- It **DOES NOT** address the data collection issues
- Companies may not report all forms of outages, due to data collection issues or other reasons



# 2023 Benchmark Results

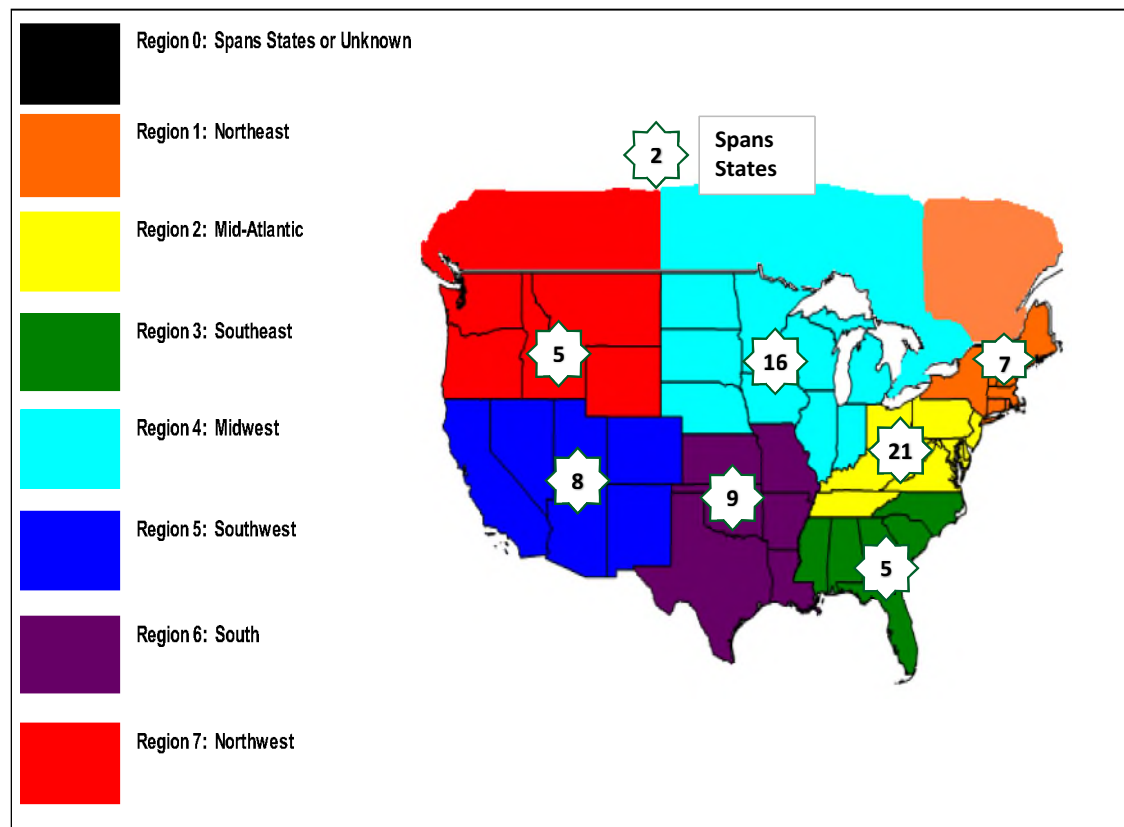
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For calendar data 2022



# Regions represented by the participants 2023 Benchmark Study

Reports on reliability for just over 70 million customers represented by 74 operating companies







# Respondents in 2023: 74

About 260 companies have responded during 21-year history

Weighted North American Performance	SAIDI (minutes) (2022/2021)	SAIFI (interruptions) (2022/2021)	CAIDI (minutes) (2022/2021)
Total	327 vs 543	1.43 vs 1.62	228 vs 335
Underlying	137 vs 165	1.15 vs 1.265	137 vs 130
Underlying Distribution	128 vs 153	0.92 vs 1.113	138 vs 137
Underlying Feed	11.9 vs 12	0.11 vs 0.153	106 vs 77
Underlying Planned	13 vs 17	0.09 vs 0.10	147 vs 164
Major Events	170 vs 378	0.287 vs 0.355	593 vs 1,064
Major Event Distribution	151 vs 342	0.244 vs 0.297	621 vs 1,151
Major Event Feed	14 vs 37	0.031 vs 0.059	454 vs 623

ALL	74	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	38	22	22	22	0.39	0.20	0.20	0.20	42	39	42	41
	Q1	163	90	86	84	1.12	0.84	0.77	0.68	138	106	109	107
	MEDIAN	250	131	119	111	1.35	1.09	0.93	0.86	183	128	133	134
	Q3	455	191	171	158	1.82	1.47	1.25	1.14	277	149	155	153
	MAX	1711	582	556	518	4.15	2.45	2.42	2.05	603	275	279	289



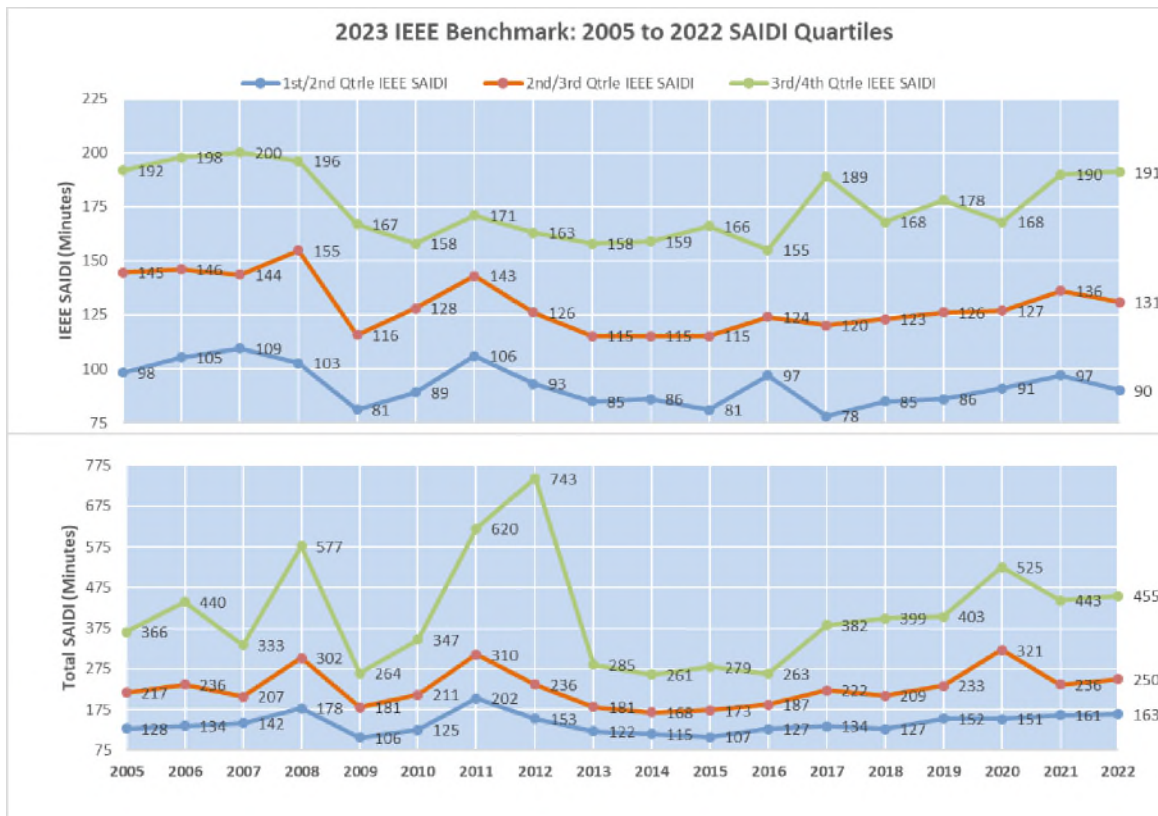
# Respondents by Utility Size

## Quartiles

UTILITY SIZE	COUNT	SAIDI		SAIFI		CAIDI							
		ALL	IEEE	WOF	WOP	ALL	IEEE	WOF	WOP				
SMALL <100,000	4												
	MIN	126	86	45	32	1.24	1.04	0.45	0.31	101	83	101	103
	Q1	374	166	125	108	1.75	1.26	0.91	0.75	204	100	133	138
	MEDIAN	593	193	165	153	1.95	1.39	1.12	1.02	301	125	147	150
	Q3	923	207	191	183	2.52	1.55	1.22	1.15	365	151	157	160
	MAX	1506	247	231	216	4.15	1.83	1.29	1.17	369	170	179	185
MEDIUM	42												
	MIN	45	22	22	22	0.39	0.20	0.20	0.20	45	43	43	41
	Q1	167	97	92	86	1.17	0.86	0.77	0.68	142	110	113	112
	MEDIAN	265	143	122	113	1.41	1.11	0.92	0.87	179	134	139	137
	Q3	420	193	188	158	1.90	1.59	1.46	1.27	277	149	160	160
	MAX	1711	491	479	443	2.84	2.45	2.42	2.05	603	214	222	232
LARGE >1,000,000	28												
	MIN	38	32	31	29	0.59	0.52	0.52	0.43	42	39	42	42
	Q1	160	85	85	81	0.99	0.82	0.79	0.70	136	101	103	103
	MEDIAN	196	115	111	98	1.25	1.02	0.93	0.82	183	120	123	123
	Q3	402	167	157	145	1.71	1.21	1.07	1.02	266	143	145	147
	MAX	1055	582	556	518	2.61	2.12	1.99	1.79	490	275	279	289



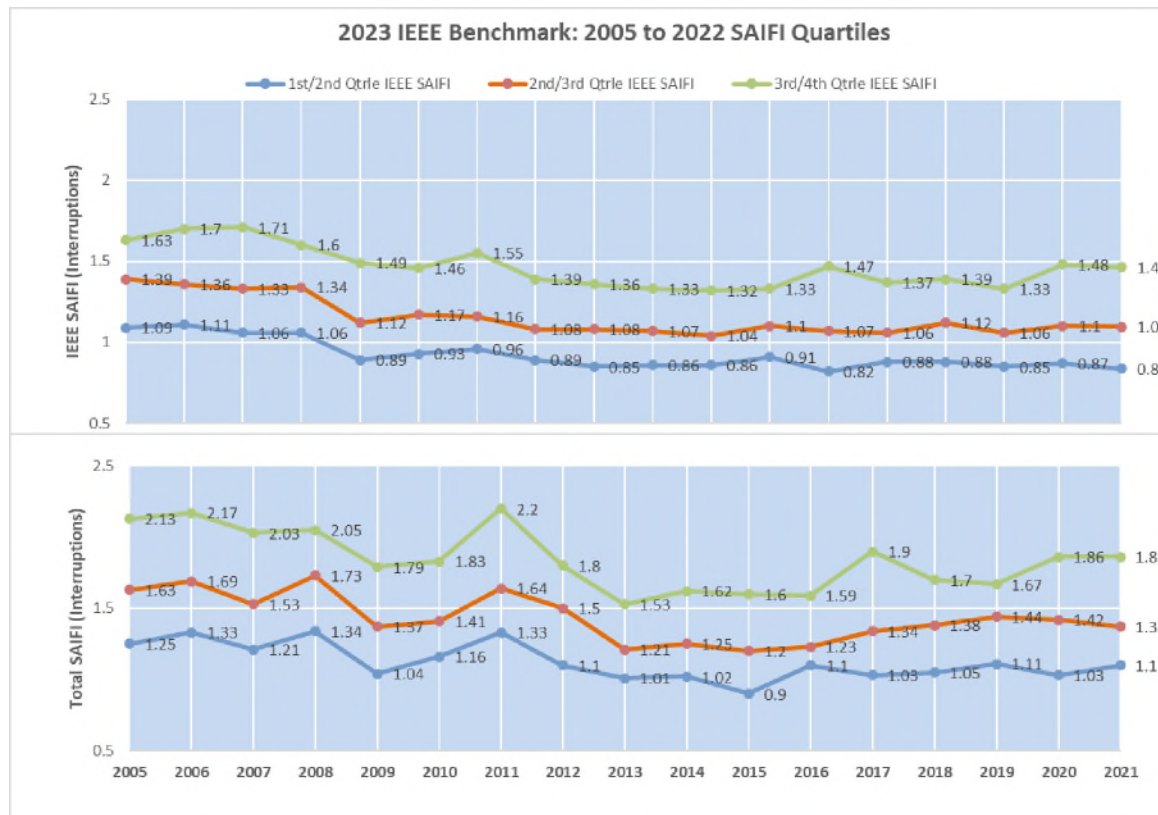
# Historic SAIDI Quartiles Without Major Events & Total





# Historic SAIFI Quartiles

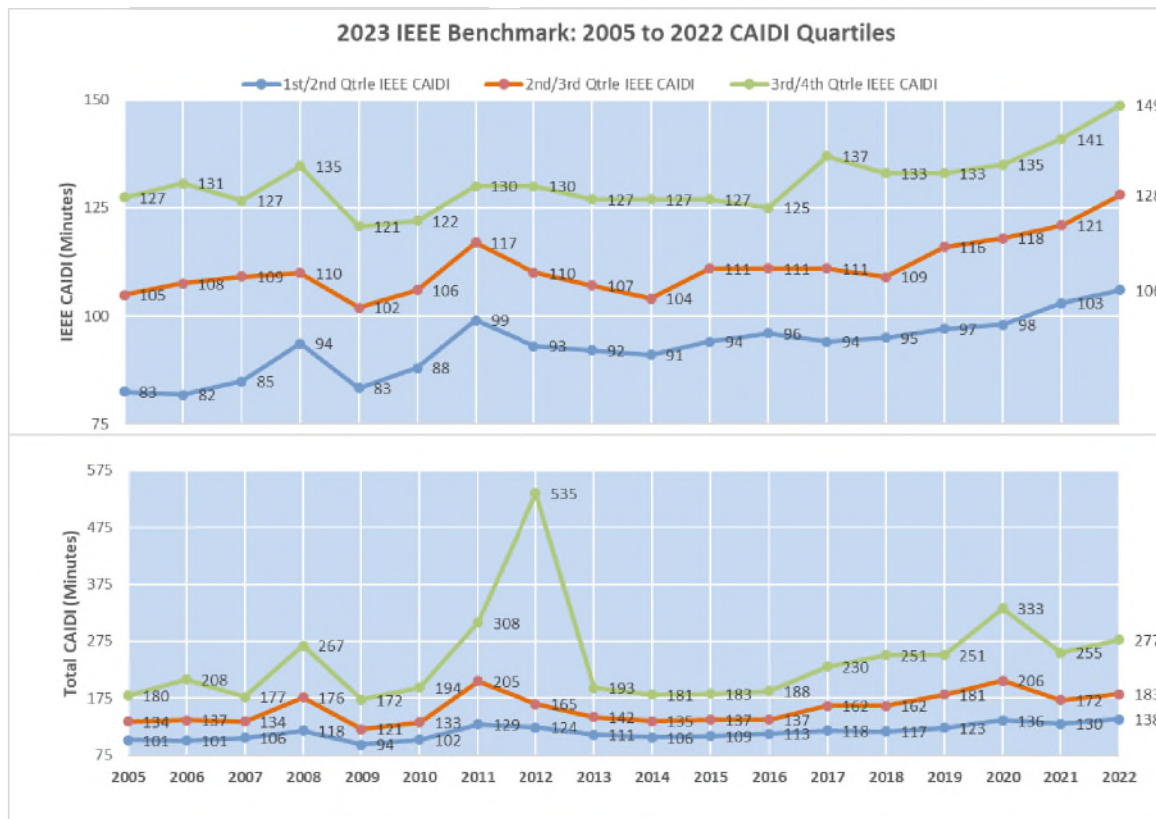
## Without Major Events & Total





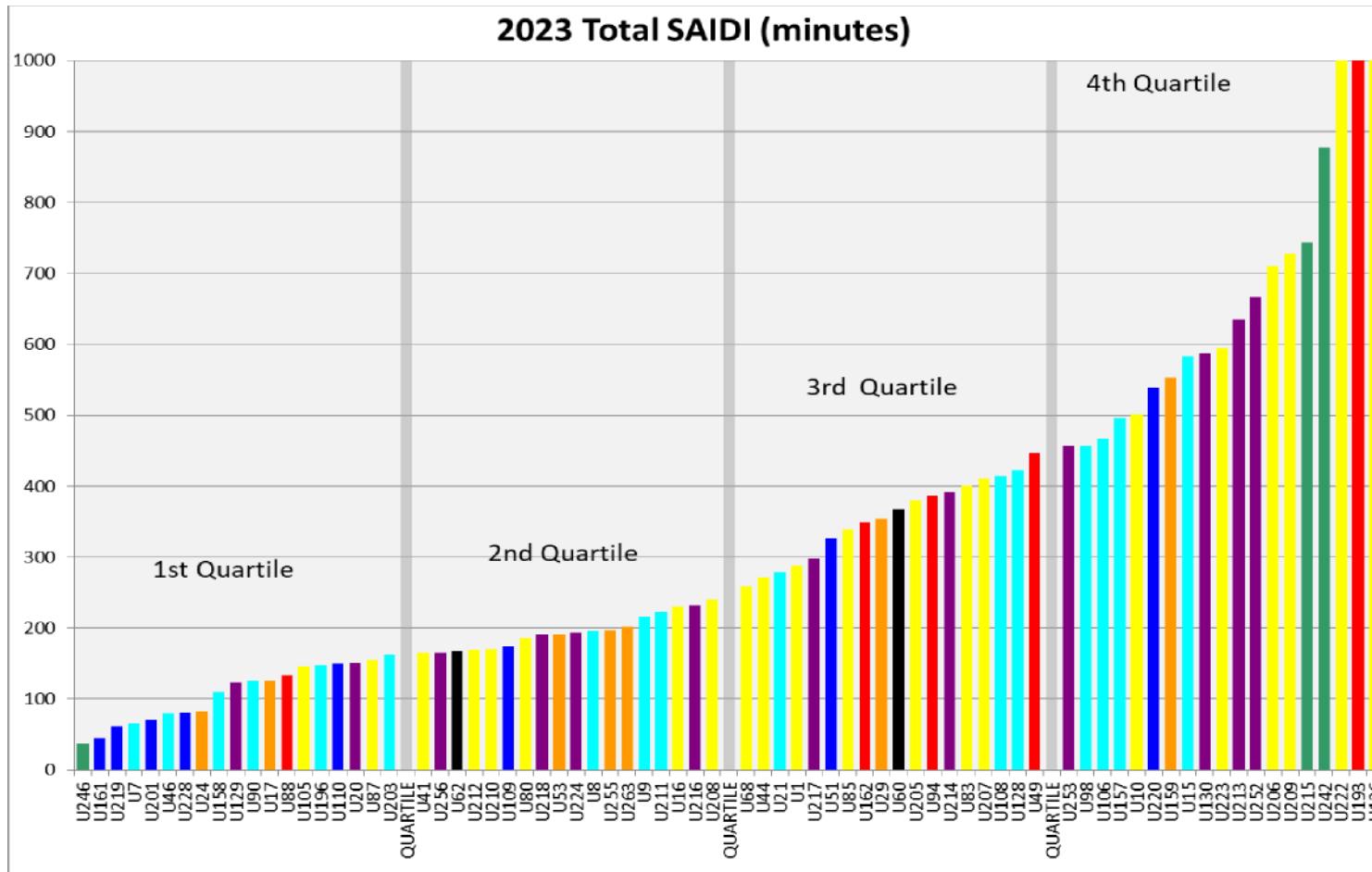
# Historic CAIDI Quartiles

## Without Major Events & Total

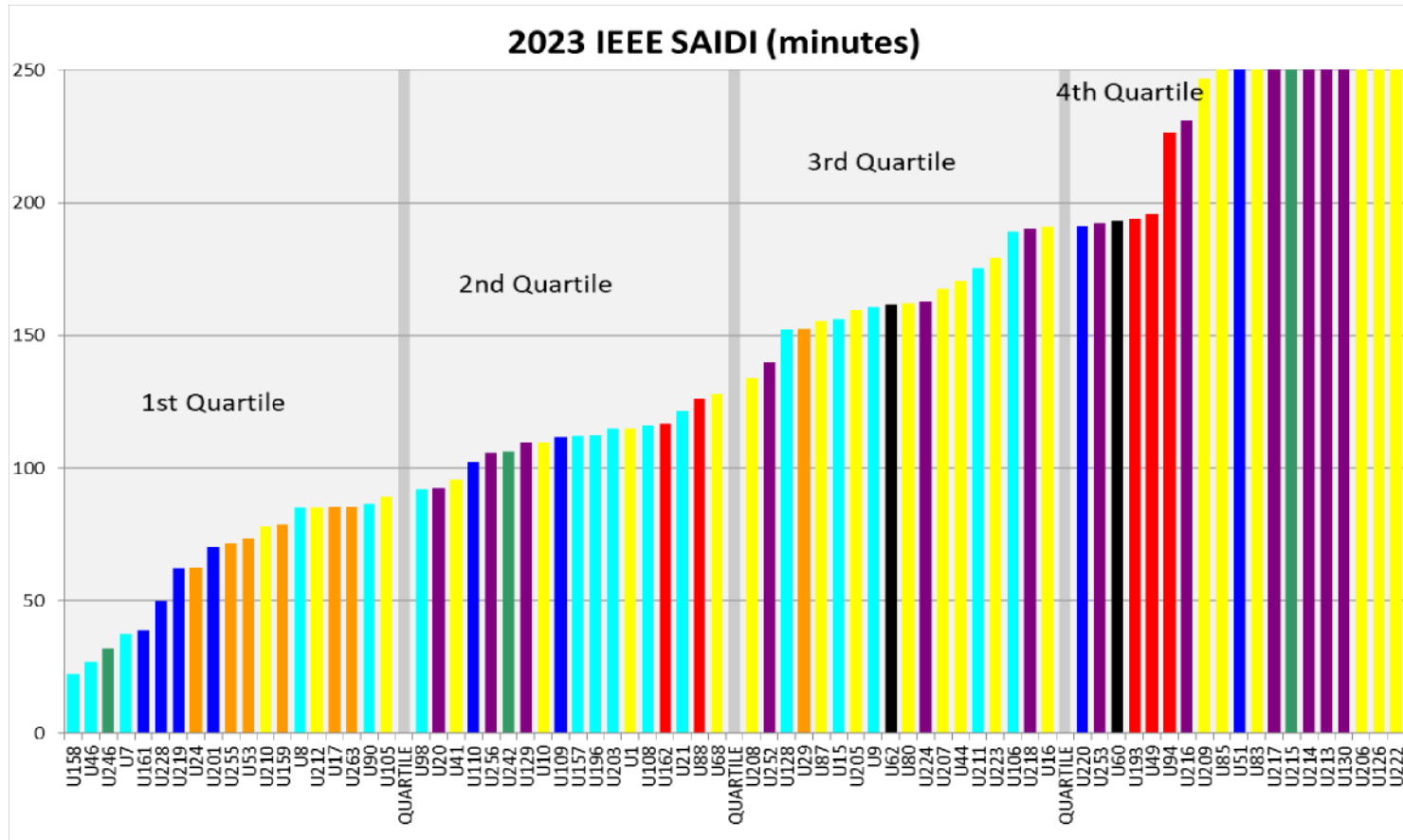




# Total SAIDI

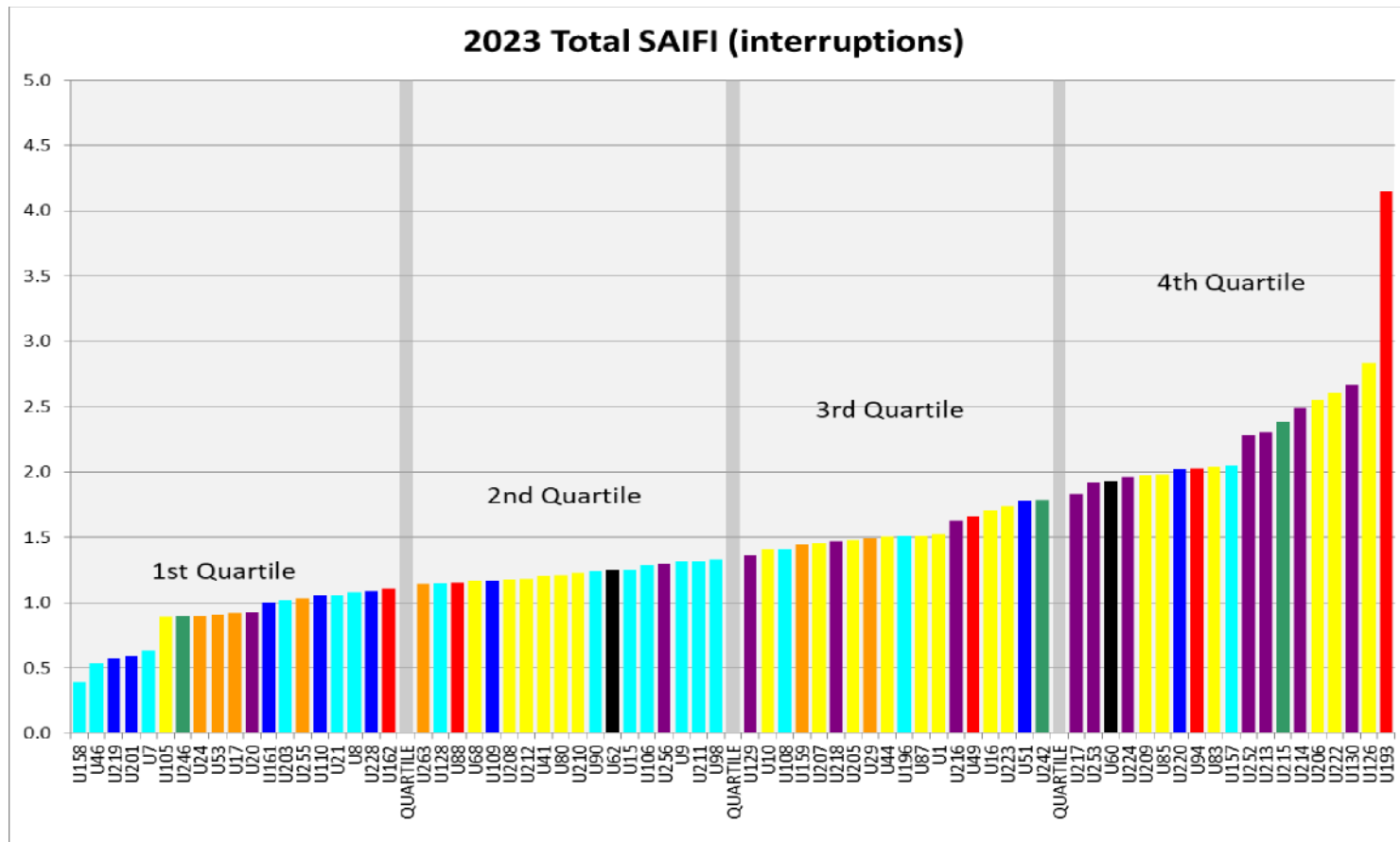


# IEEE SAIDI





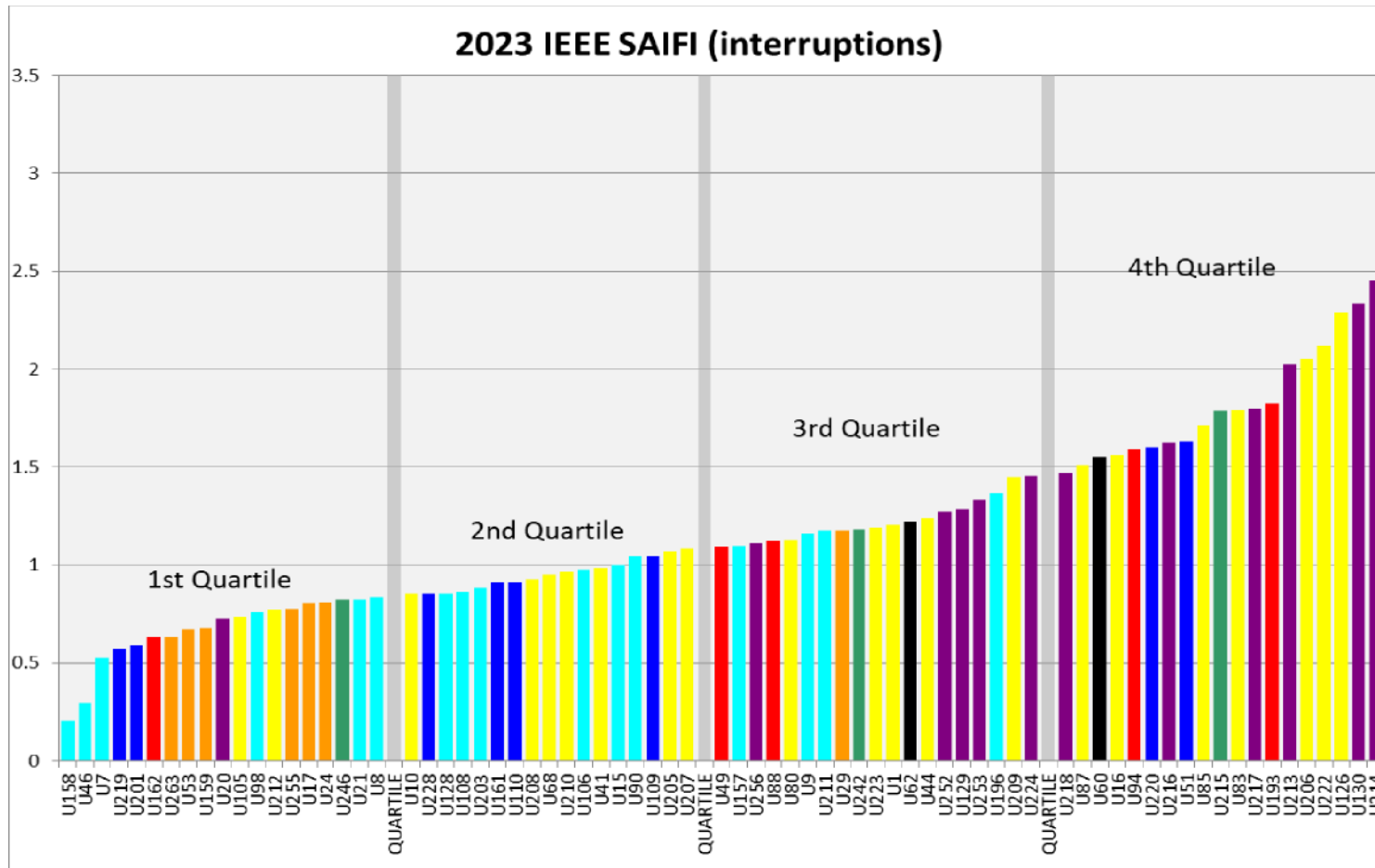
# Total SAIFI





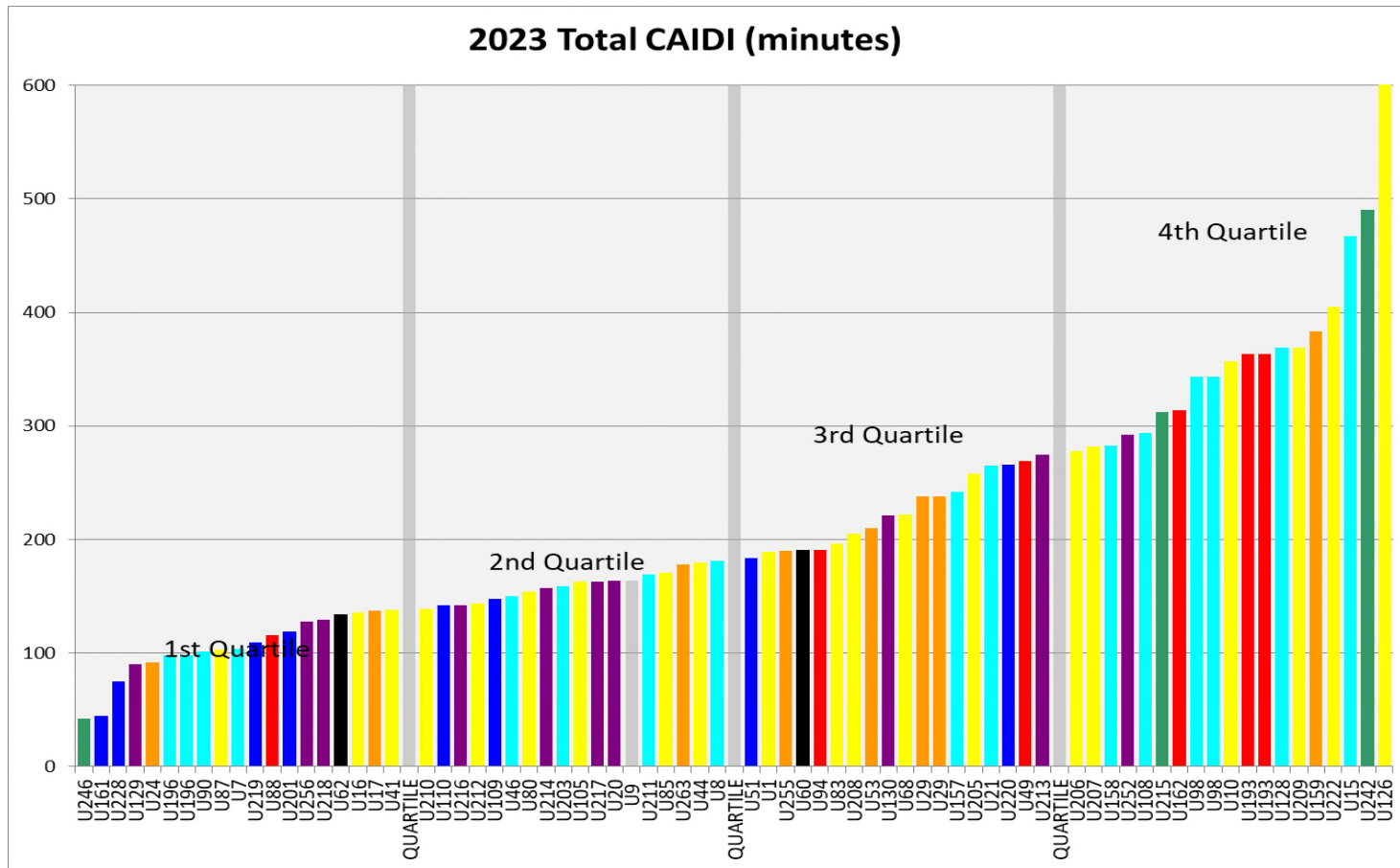


# IEEE SAIFI

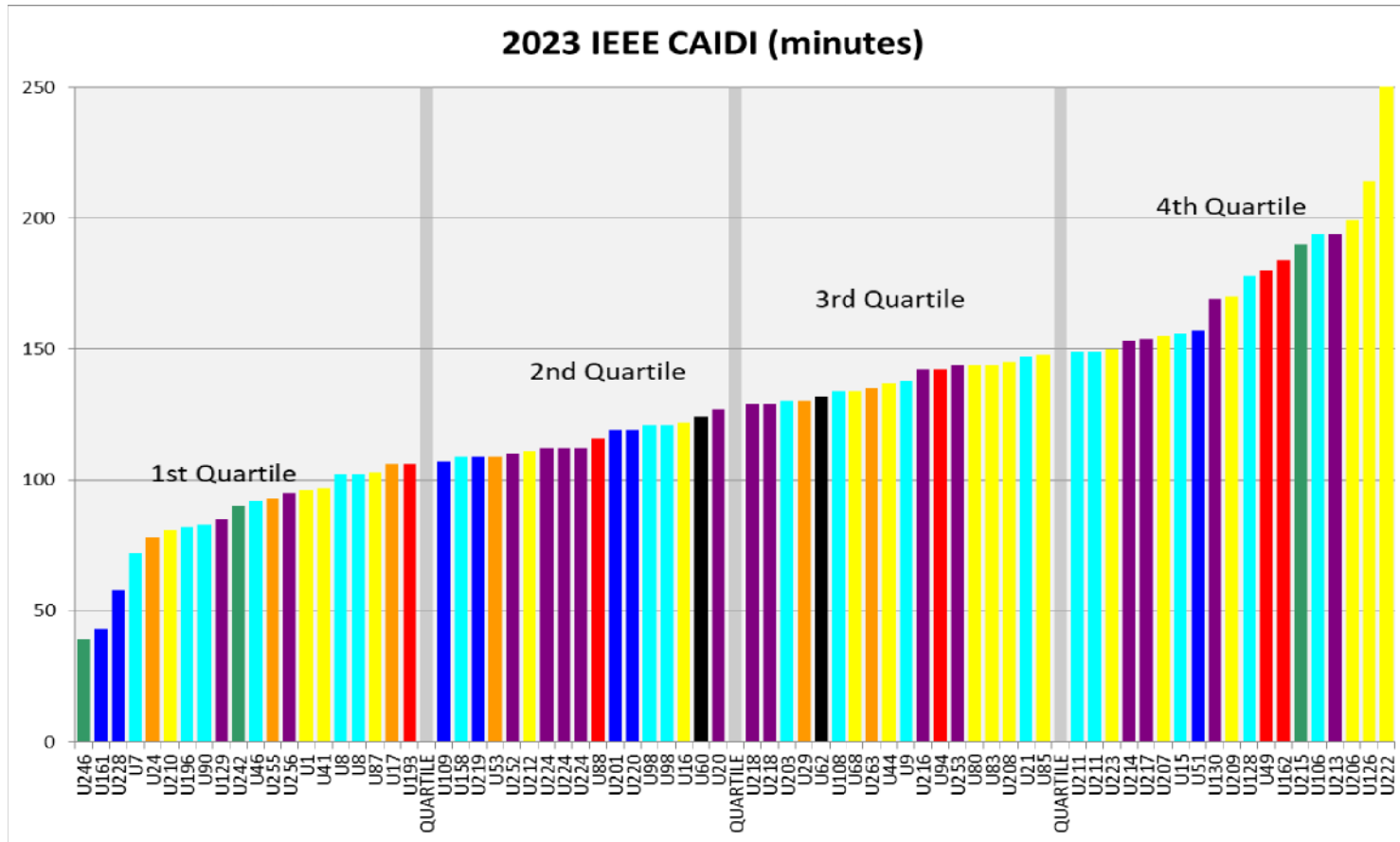




# Total CAIDI



# IEEE CAIDI





# Looking at Total Reliability Metrics

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By Responsible System/ME & Underlying

# Summary Graphs

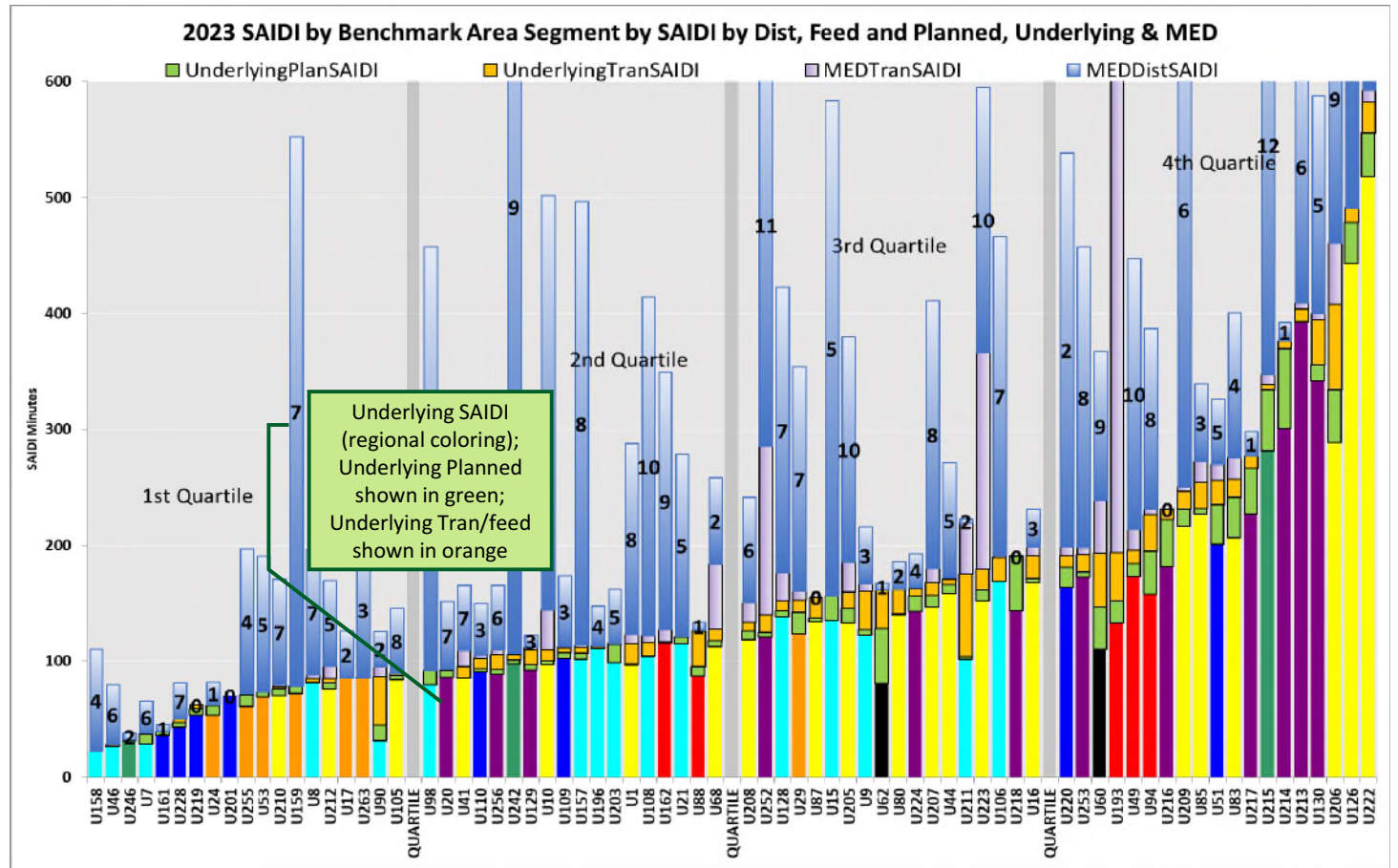
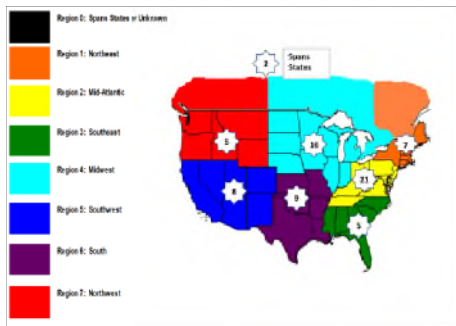
Peer utilities provide

- Total daily data,
- After removing transmission outages and
- After removing transmission and planned outages.

We calculate:

- Major events
- Underlying distribution
- Underlying feed (transmission and loss of generation)
- Planned
- Major event distribution
- Major event feed

The stacked bars show them, sorted in ascending IEEE SAIDI performance.



# Summary Graphs

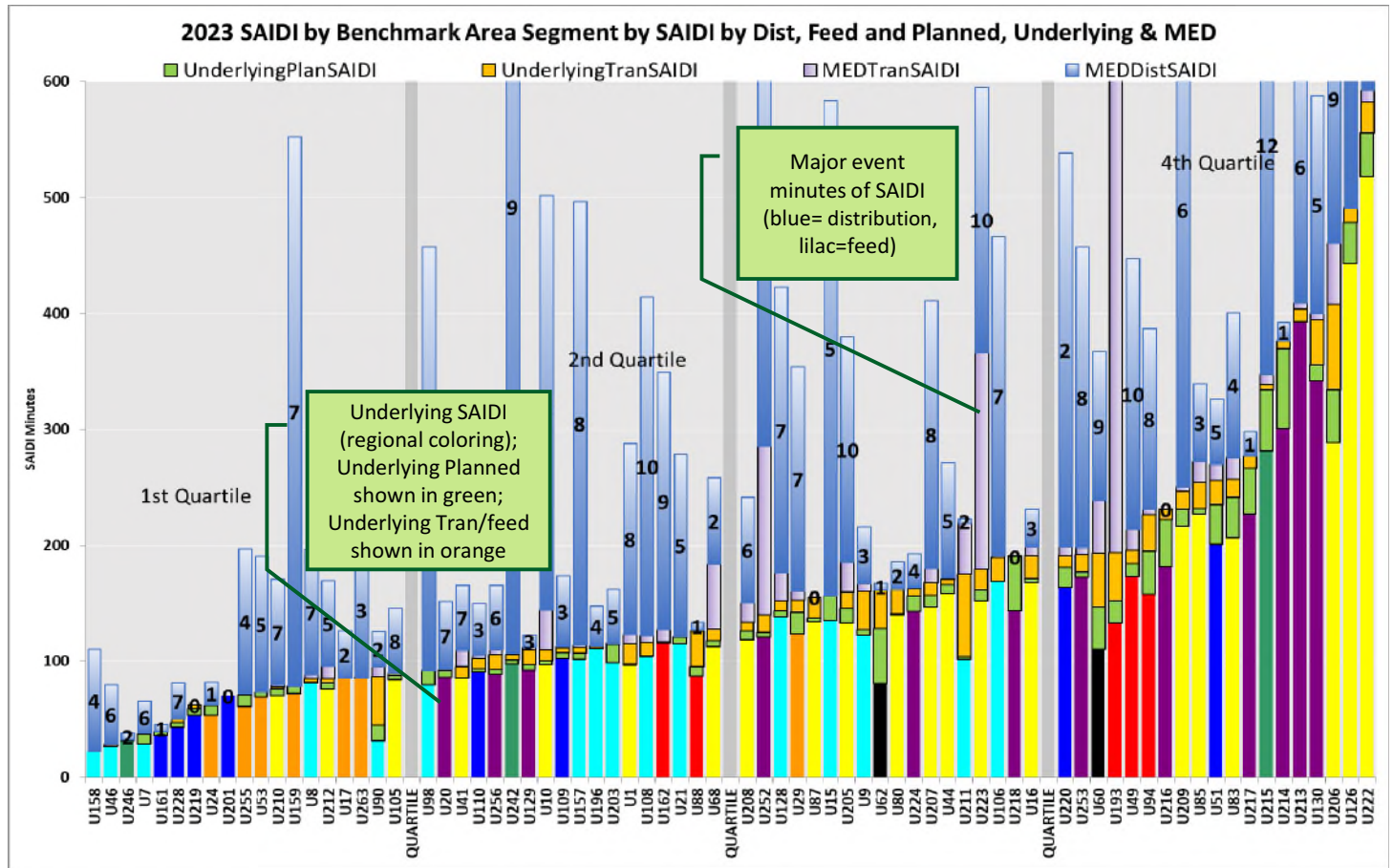
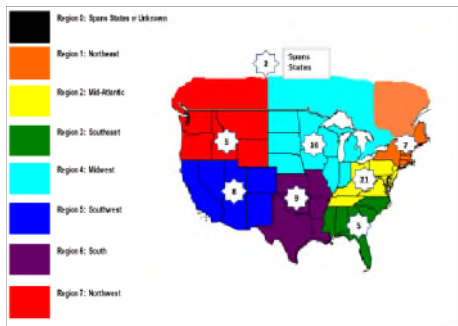
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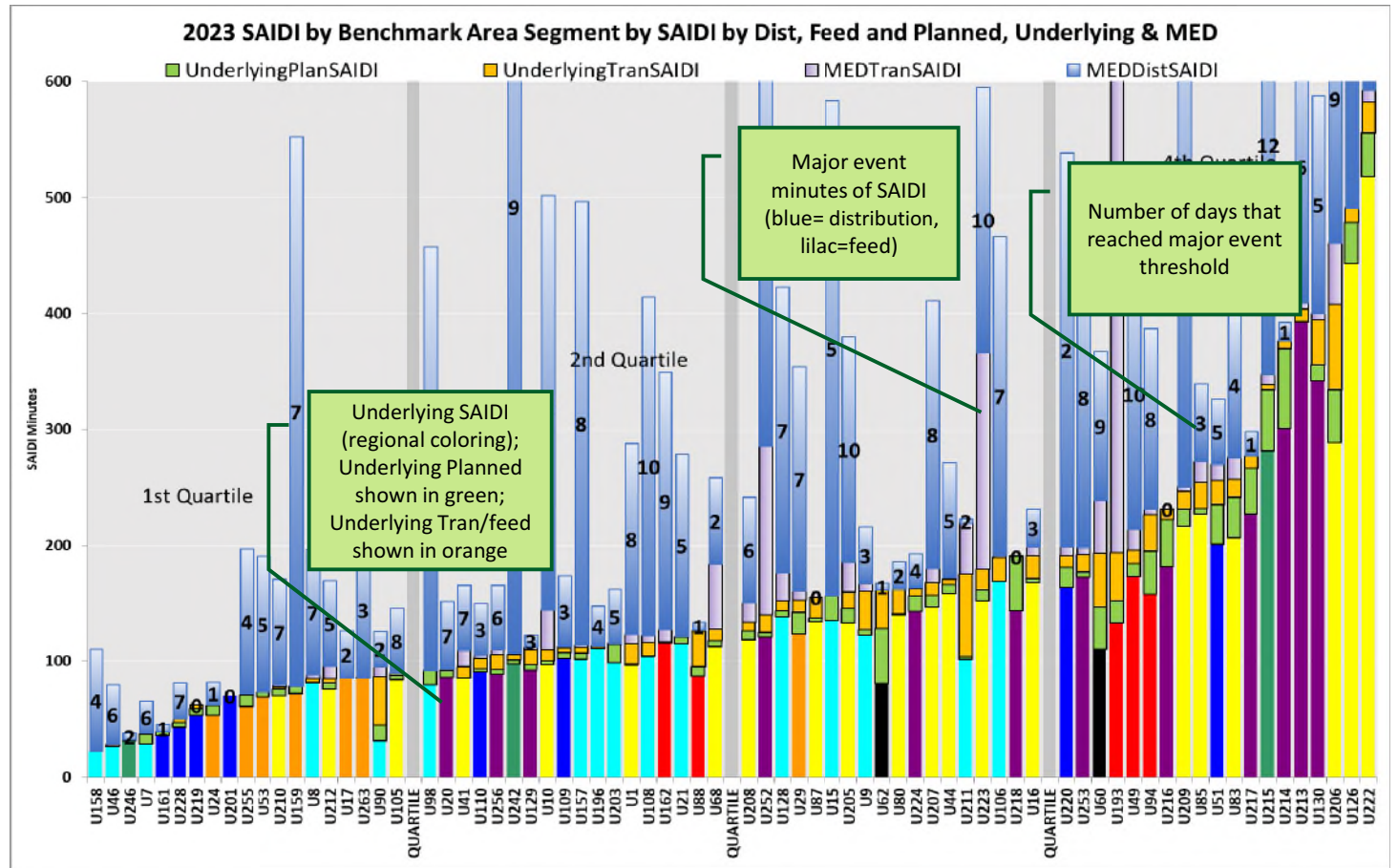
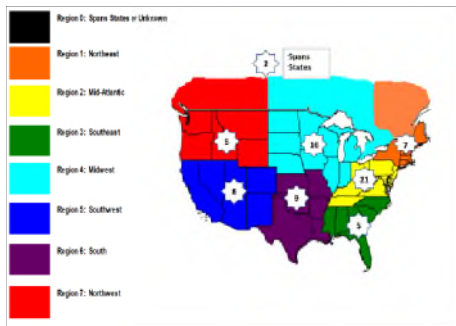
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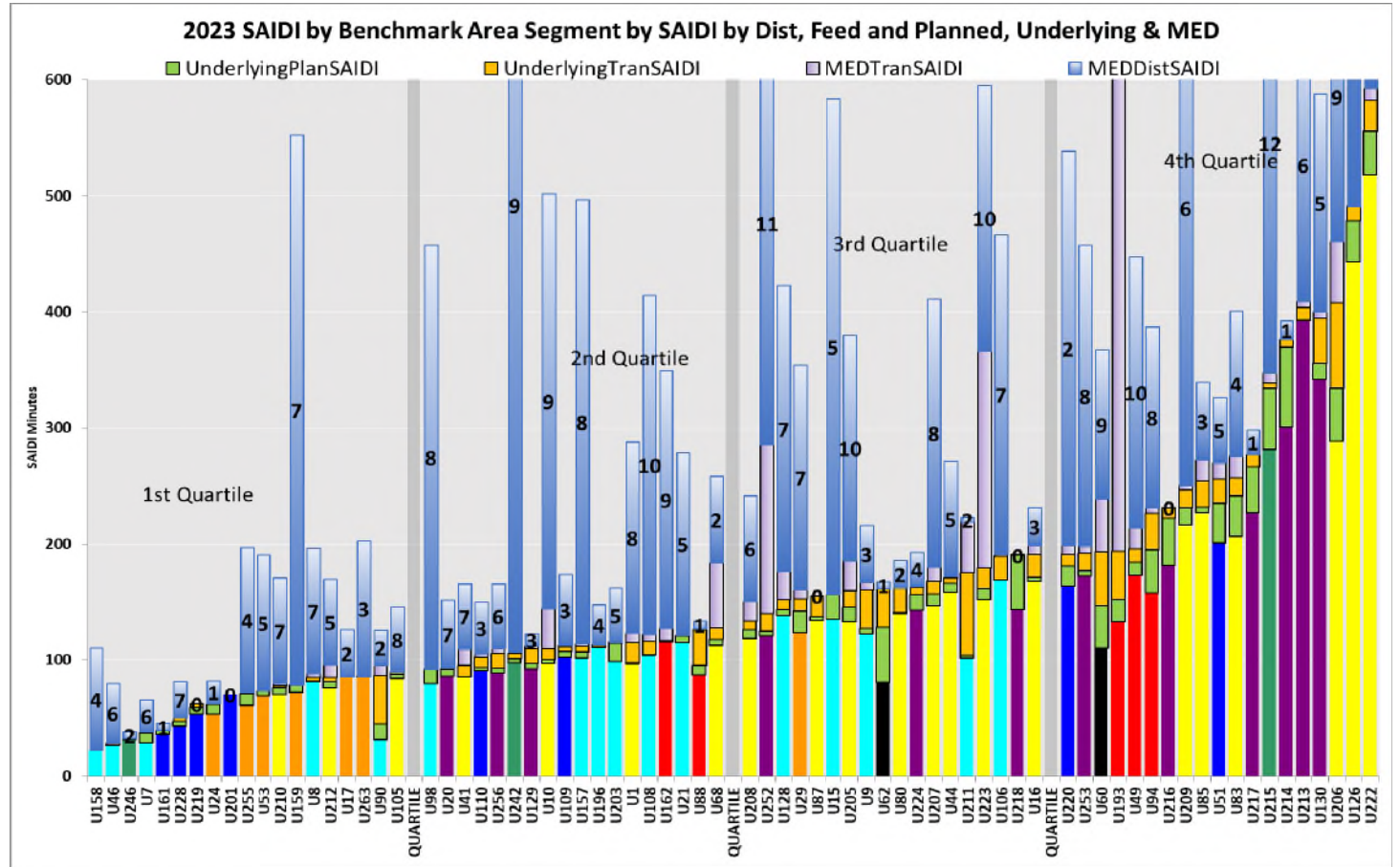
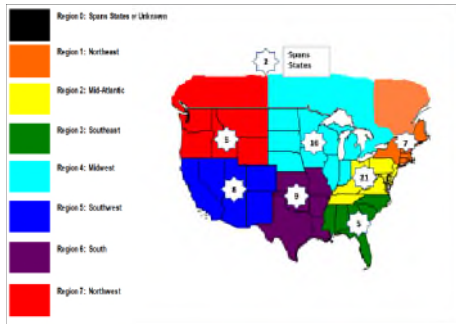
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The stacked bars show them, sorted in ascending IEEE SAIDI performance.





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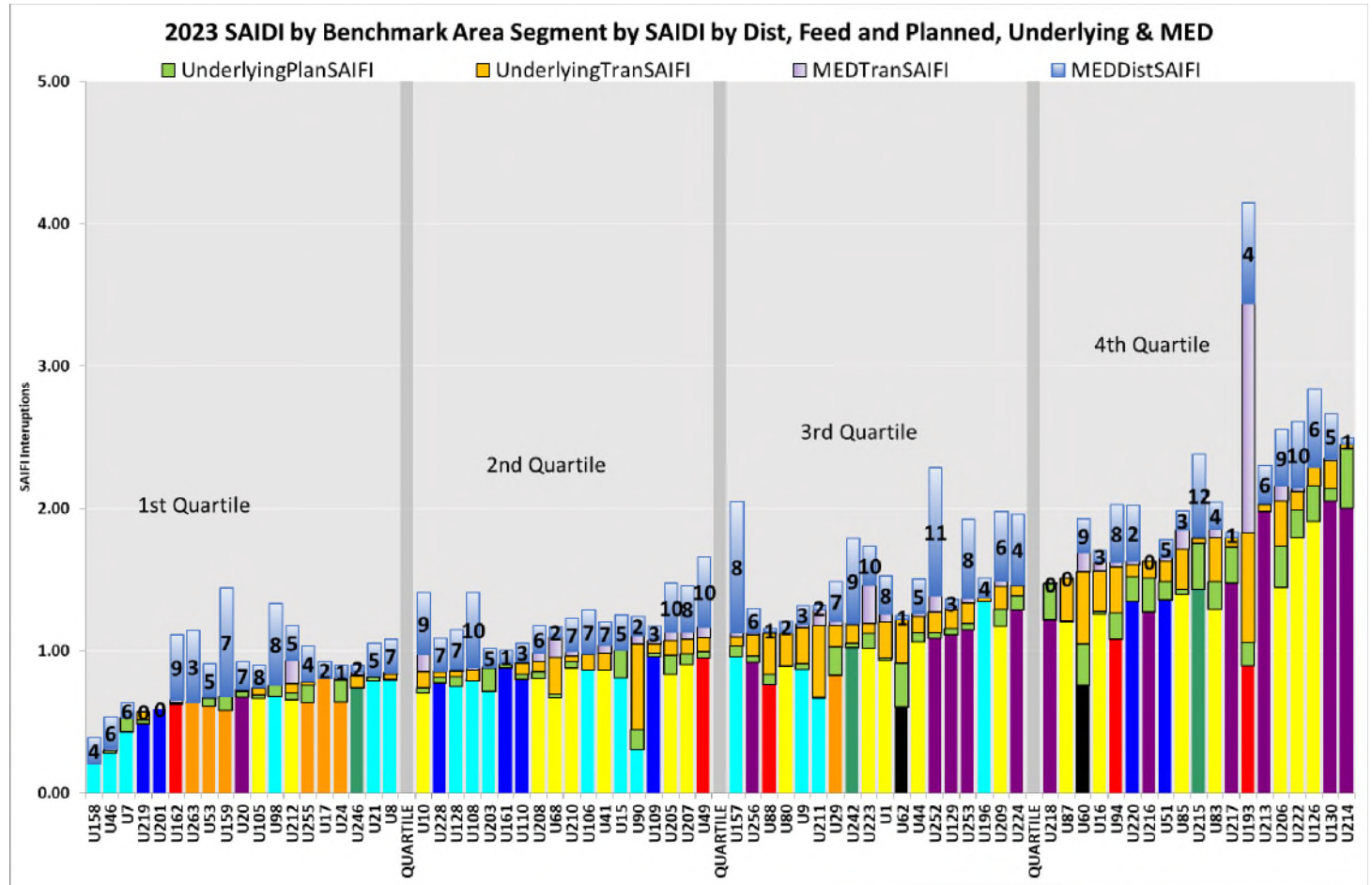
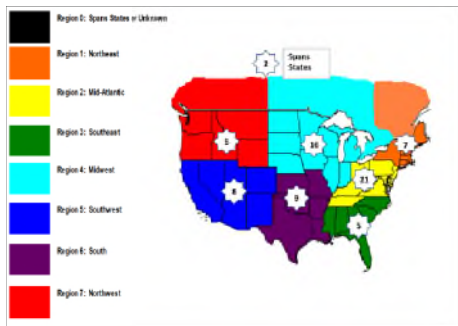
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We calculate:

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- Underlying feed (transmission and loss of generation)
- Planned
- Major event distribution
- Major event feed

The stacked bars show them, sorted in ascending IEEE SAIDI performance.



# Questions





# IEEE Benchmark Year 2024 Results for 2023 Data

2024 Distribution Reliability Working Group Meeting

July 23, 2024 Seattle, WA  
Updated September 16, 2024



# History of the Study

## Background

- 1. Initiated in 2003, conducted annually*
- 2. Participants are anonymous with key identifier to retain anonymity*
- 3. Participation list is not revealed to anyone*
- 4. Each participant can choose to share their results*
- 5. No inference is made about good or bad reliability*
- 6. Intended to provide information for users to assess their performance relative to peers*
- 7. Called the 2024 Study (for 2023 Results)*



# Benchmarking

**Using annual key metrics (SAIDI, SAIFI and CAIDI) to assess performance of a system may be useful, however, needs to be tempered with judgment**

DRWG Study attempts to identify various aspects that could cause a difference in reported metrics

Data may not be directly comparable, since

- Data collection & system differences exist
- Certain exclusion differences can occur, although we strive to have the differences minimized
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## IEEE 1366-2003/2012/2022

- addresses data issues by clearly defining the rules (i.e. what data should be excluded)
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# 2024 Benchmark Results

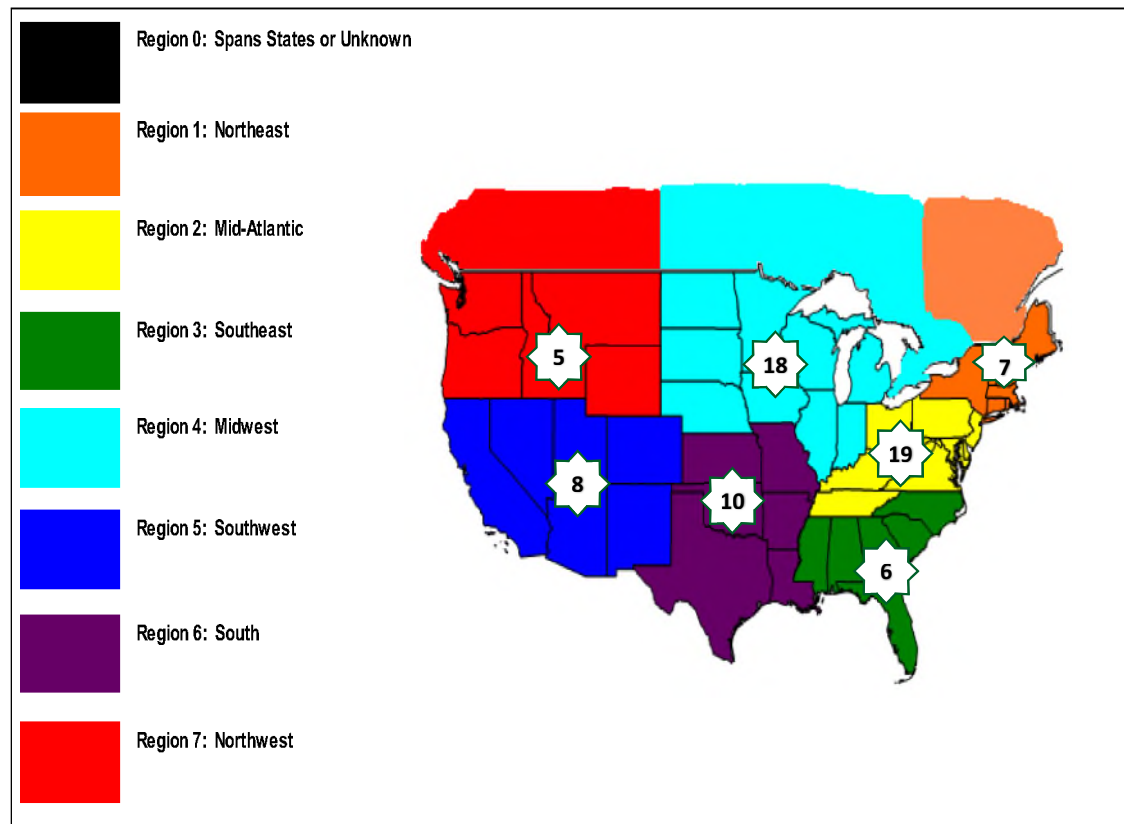
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For calendar data 2023



# Regions represented by the participants 2024 Benchmark Study

Reports on reliability for just over 70 million customers (74,266,805) represented by 73 operating companies with sizes grouped by:  
Small  $\leq 100$  k  
Medium  $< 1$  m  
Large  $> 1$  m





## Updated Values: Respondents in 2024: 73

ALL	73	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	37	24	24	24	0.06	0.06	0.06	0.06	69	61	61	58
	Q1	156	85	81	75	1.01	0.74	0.65	0.59	160	110	113	111
	MEDIAN	266	119	110	94	1.27	0.98	0.86	0.78	192	136	140	140
	Q3	491	186	182	156	1.64	1.27	1.22	1.08	306	154	158	157
	MAX	2822	401	401	349	5.07	3.45	2.84	2.64	1032	589	562	562

## Original Results: Respondents in 2024: 73

ALL	73	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	37	24	24	24	0.06	0.06	0.06	0.06	69	61	61	58
	Q1	150	84	80	74	0.95	0.70	0.65	0.58	156	109	112	108
	MEDIAN	266	119	110	94	1.27	0.98	0.86	0.78	192	136	140	140
	Q3	491	186	182	156	1.64	1.27	1.22	1.08	306	154	158	157
	MAX	2822	401	401	349	5.07	3.45	2.84	2.64	1032	589	562	562

## Results in 2023: 74 Respondents

ALL	74	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	38	22	22	22	0.39	0.20	0.20	0.20	42	39	42	41
	Q1	163	90	86	84	1.12	0.84	0.77	0.68	138	106	109	107
	MEDIAN	250	131	119	111	1.35	1.09	0.93	0.86	183	128	133	134
	Q3	455	191	171	158	1.82	1.47	1.25	1.14	277	149	155	153
	MAX	1711	582	556	518	4.15	2.45	2.42	2.05	603	275	279	289





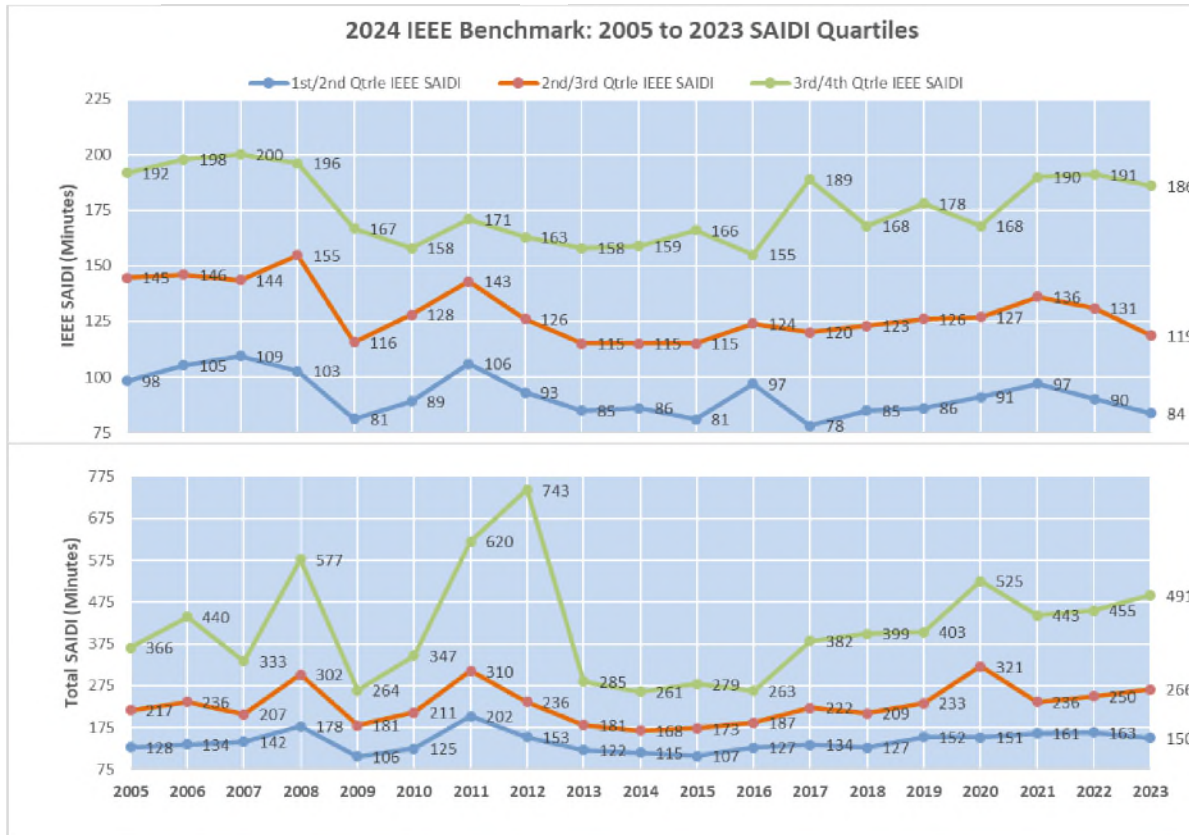
# Added Slide: Quartiles by Utility Size

(note that Small Quartiles sample is too small to be statistically significant)

	4	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	SMALL	MIN	112	81	50	40	1.18	1.01	0.61	0.51	85	71	82
Q1		188	149	133	117	1.28	1.06	0.86	0.79	135	96	140	127
MEDIAN		289	180	174	147	1.32	1.11	0.98	0.90	167	132	166	154
Q3		395	208	198	159	1.79	1.50	1.09	0.94	206	166	179	174
MAX		485	268	231	179	3.20	2.58	1.33	1.00	276	186	197	201
MEDIUM	40	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	37	24	24	24	0.06	0.06	0.06	0.06	73	71	73	72
	Q1	136	85	80	74	0.95	0.74	0.64	0.58	152	111	113	115
	MEDIAN	222	121	107	103	1.28	1.00	0.86	0.78	188	139	143	142
	Q3	486	186	175	153	1.56	1.27	1.19	1.05	300	155	160	164
	MAX	2822	363	319	303	3.54	2.58	1.90	1.84	1032	589	562	562
LARGE	29	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	70	35	35	26	0.61	0.48	0.48	0.39	69	61	61	58
	Q1	190	85	85	77	1.02	0.78	0.75	0.62	166	105	108	106
	MEDIAN	277	114	113	93	1.26	0.96	0.88	0.78	209	126	126	125
	Q3	575	182	182	159	1.64	1.32	1.22	1.08	317	151	155	150
	MAX	1542	401	401	349	5.07	3.45	2.84	2.64	895	233	233	246



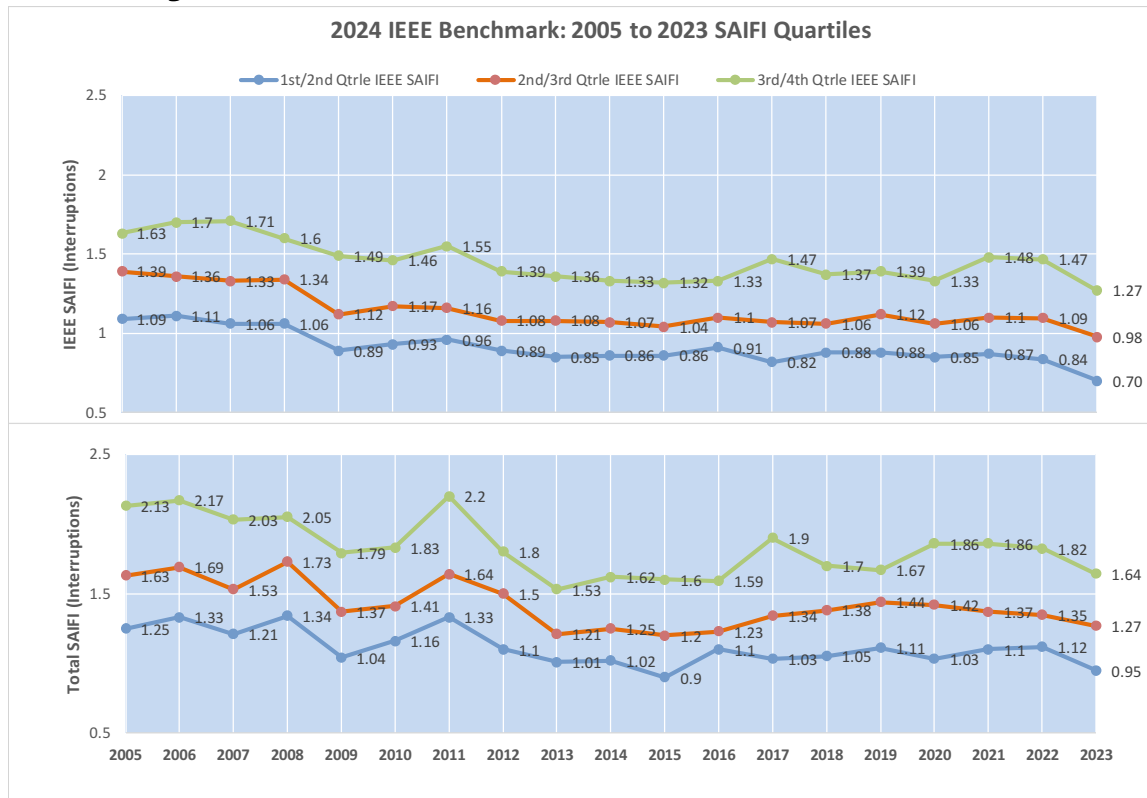
# Historic SAIDI Quartiles Without Major Events & Total





# Historic SAIFI Quartiles

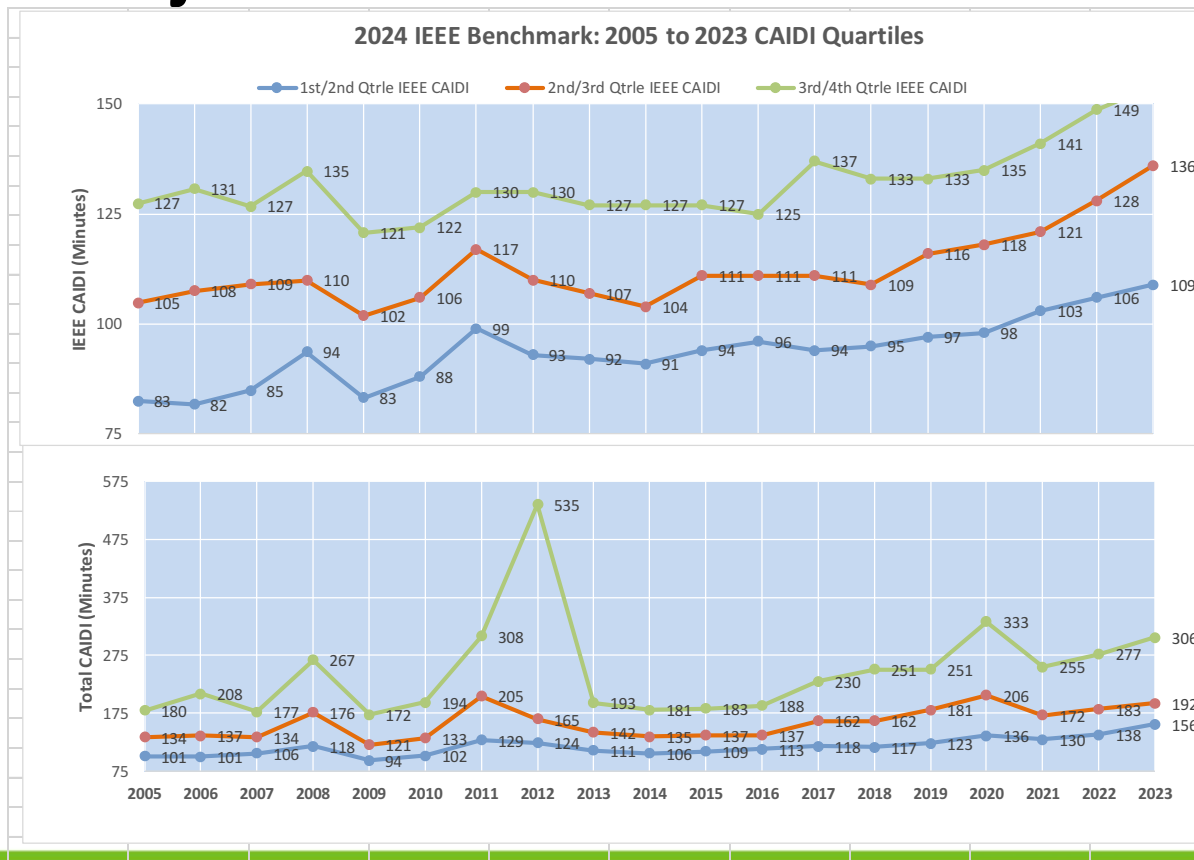
## Without Major Events & Total





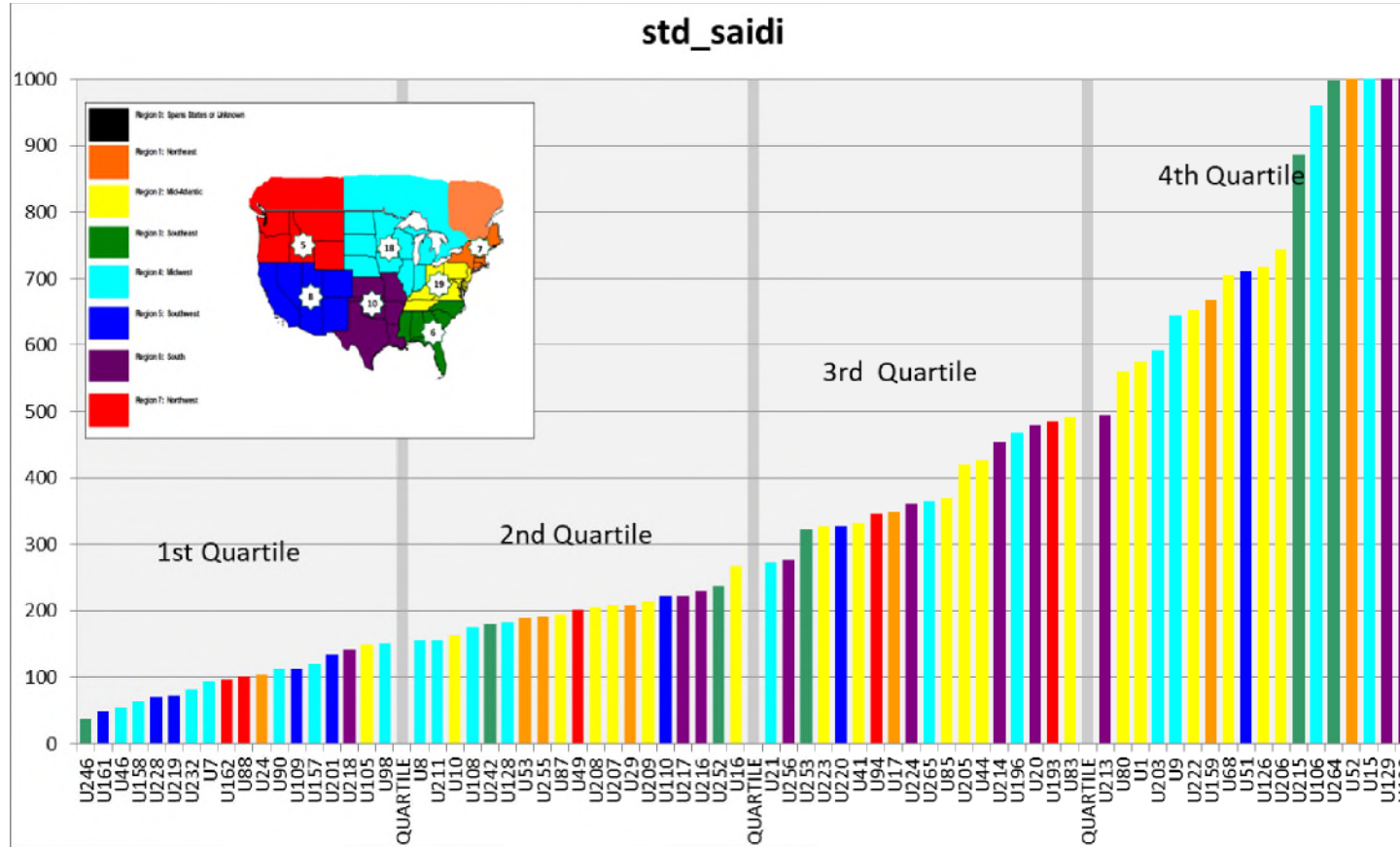
# Historic CAIDI Quartiles

## Without Major Events & Total

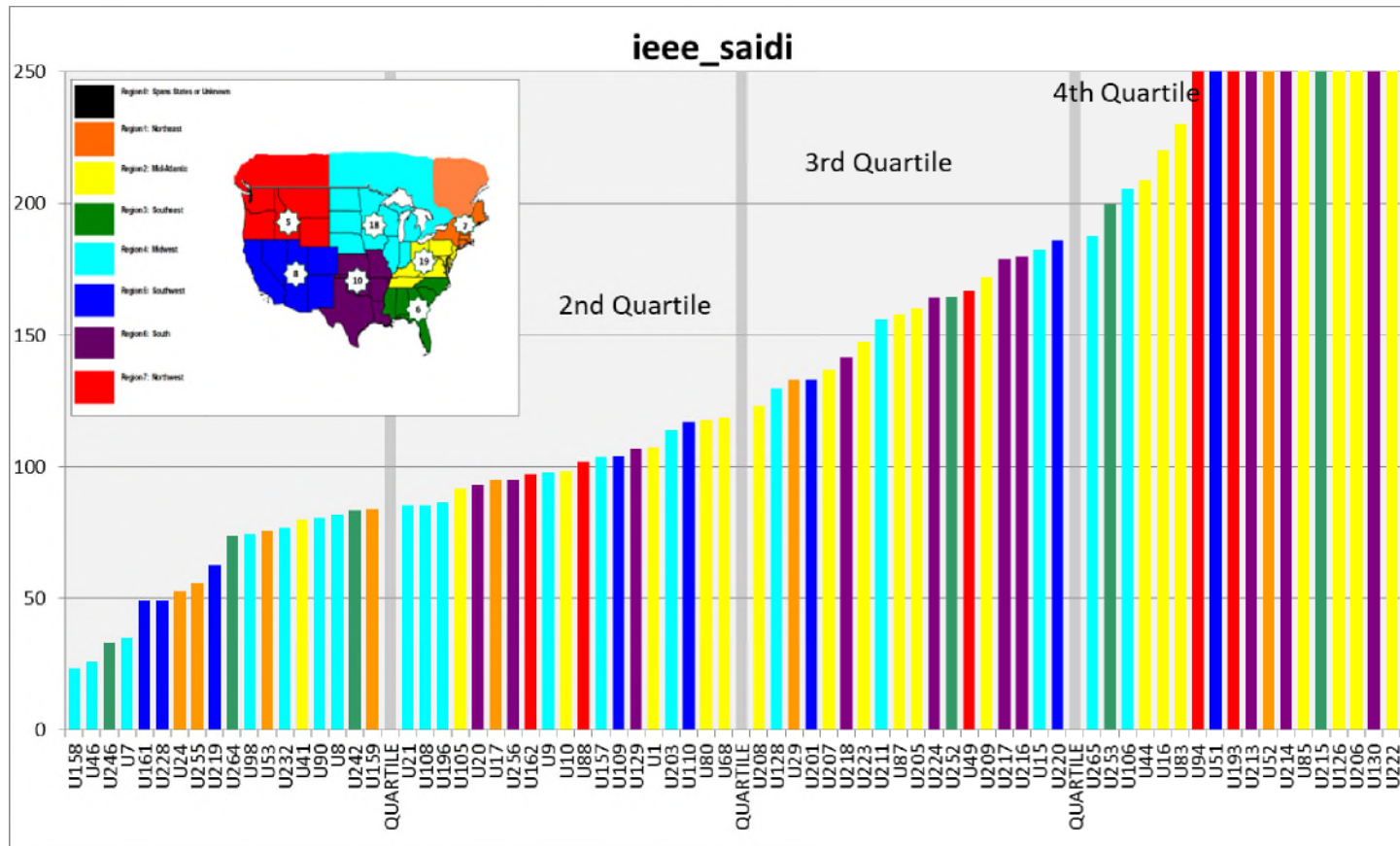




# Total SAIDI

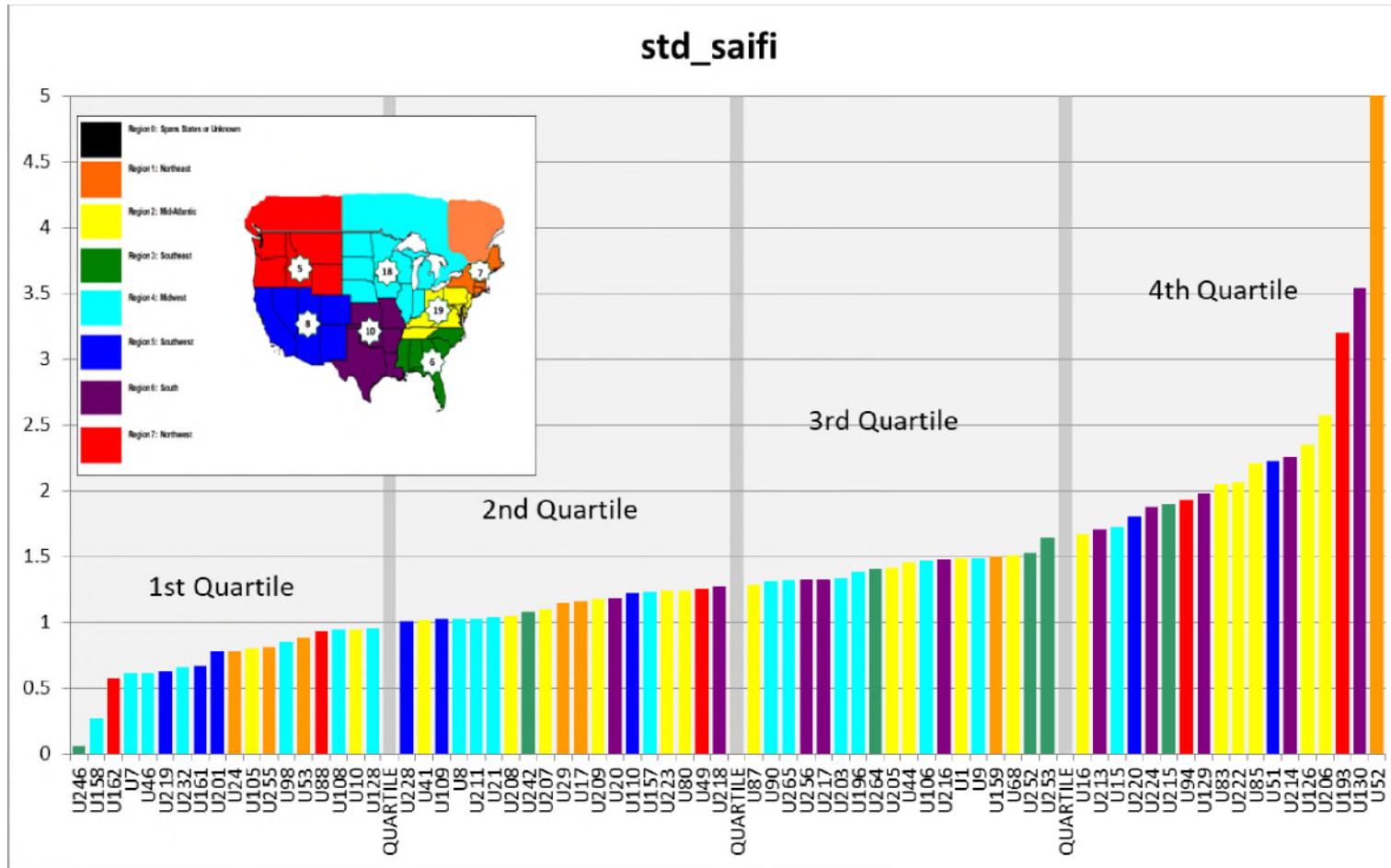


# IEEE SAIDI



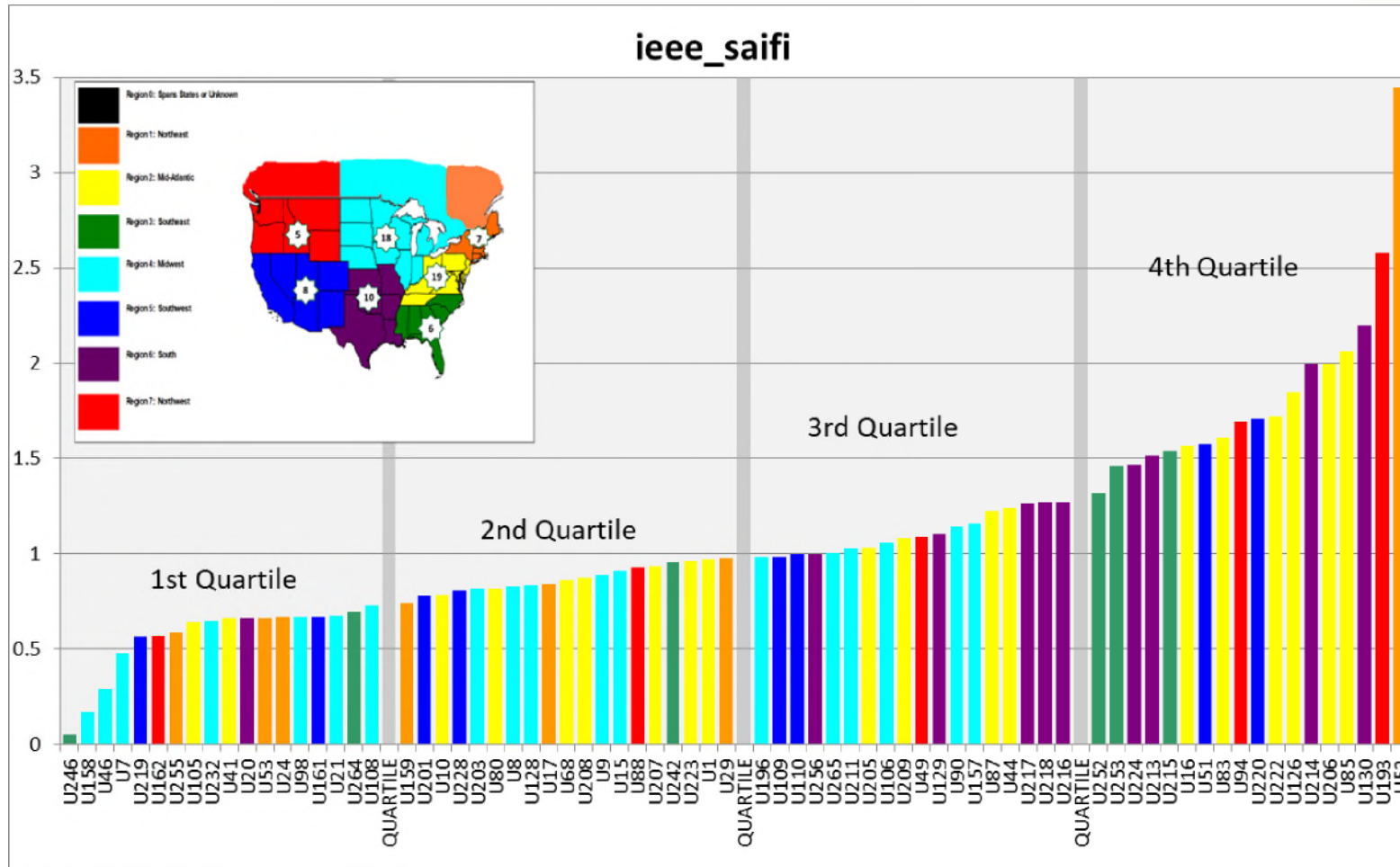


# Total SAIFI





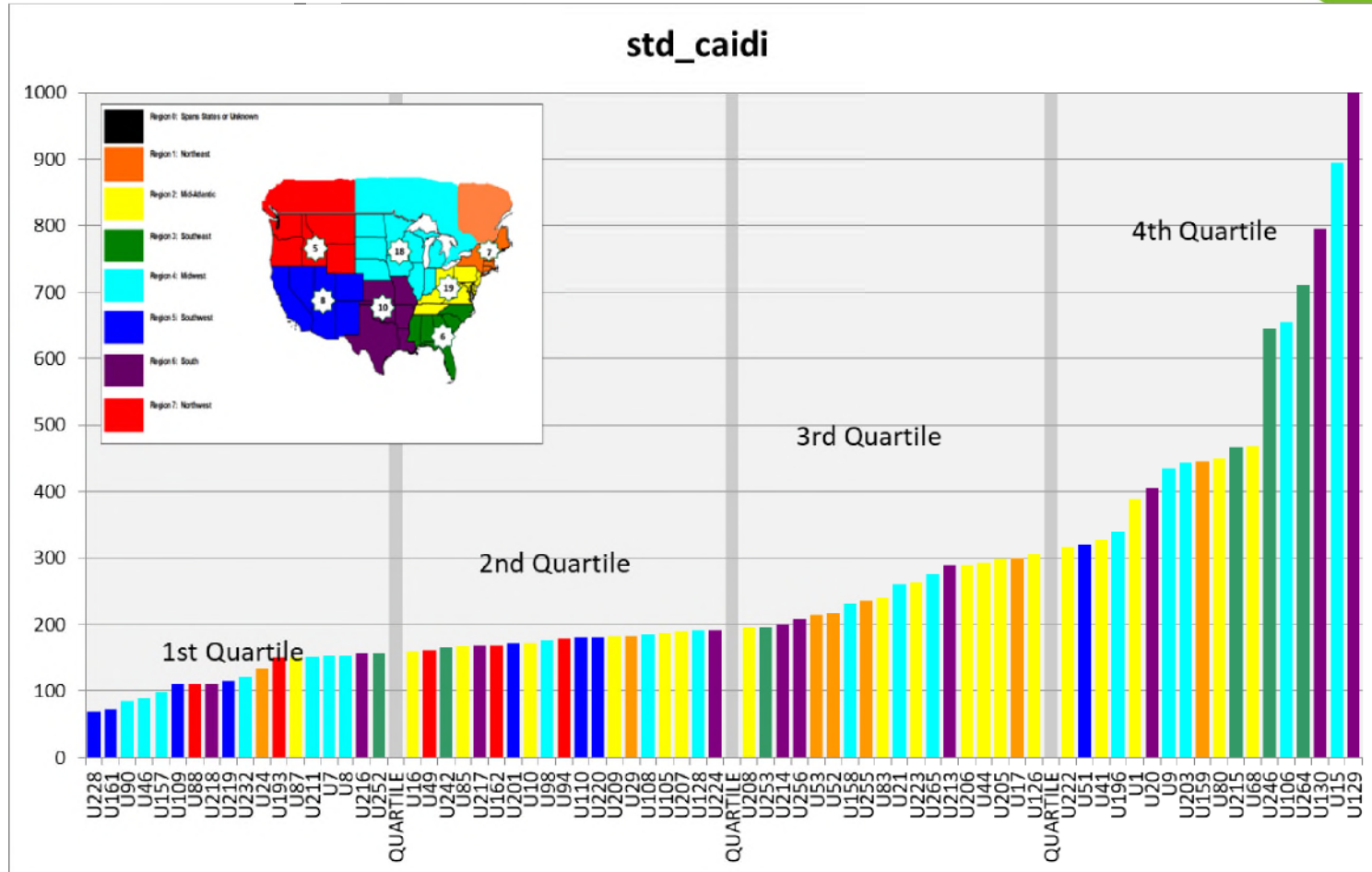
# IEEE SAIFI





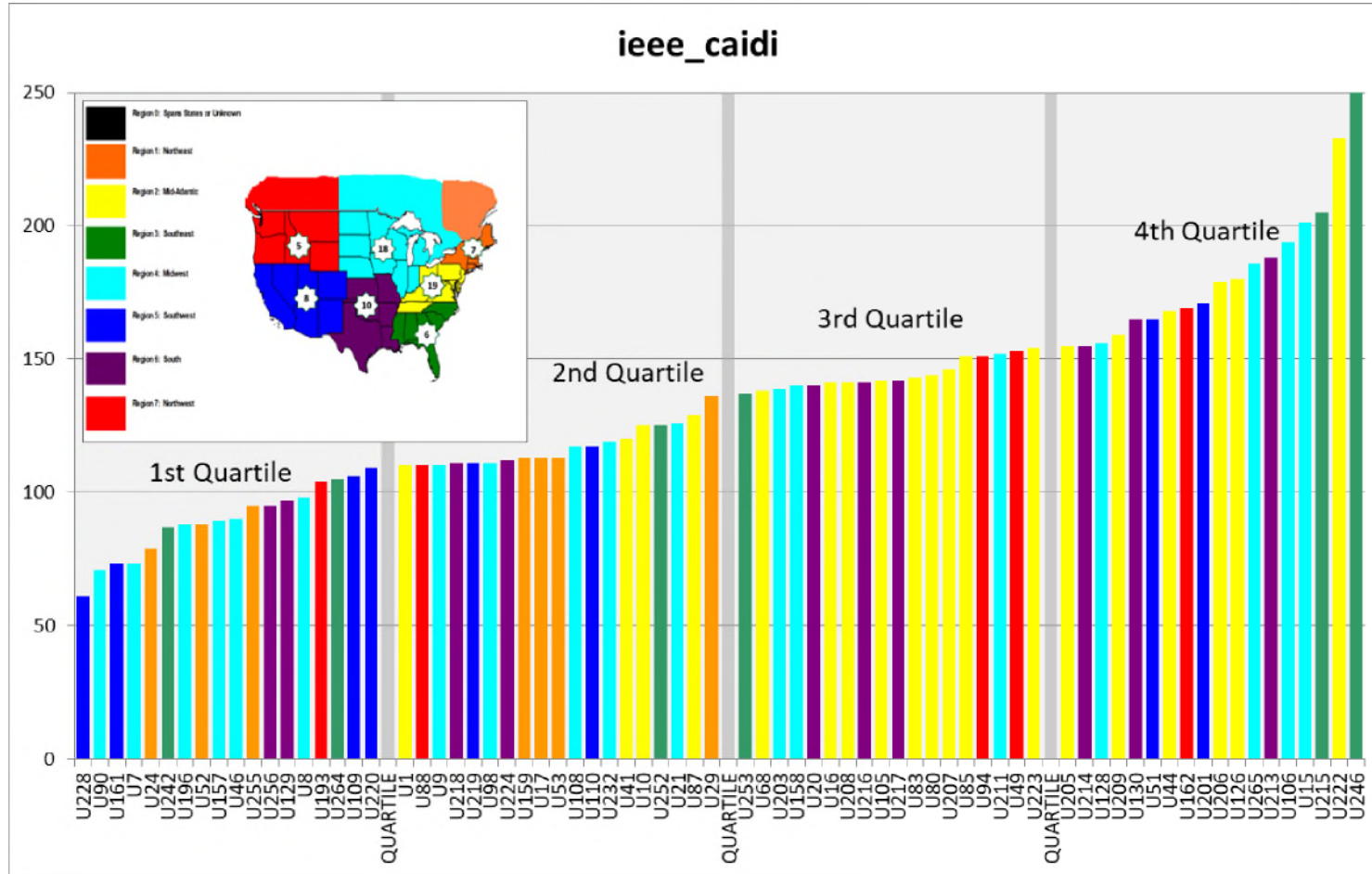


# Total CAIDI





# Total CAIDI



# Questions





# IEEE Benchmark Year 2025 Results for 2024 Data

2025 Distribution Reliability Working Group Meeting

Updated November 7, 2025 Austin, TX



# History of the Study

## Background

- 1. Initiated in 2003, conducted annually*
- 2. Participants are anonymous with key identifier to retain anonymity*
- 3. Participation list is not revealed to anyone*
- 4. Each participant can choose to share their results*
- 5. No inference is made about good or bad reliability*
- 6. Intended to provide information for users to assess their performance relative to peers*
- 7. Called the 2025 Study (for 2024 Results)*



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**Using annual key metrics (SAIDI, SAIFI and CAIDI) to assess performance of a system may be useful, however, needs to be tempered with judgment**

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- Data collection & system differences exist
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IEEE 1366-2003/2012/2022

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# 2025 Benchmark Results

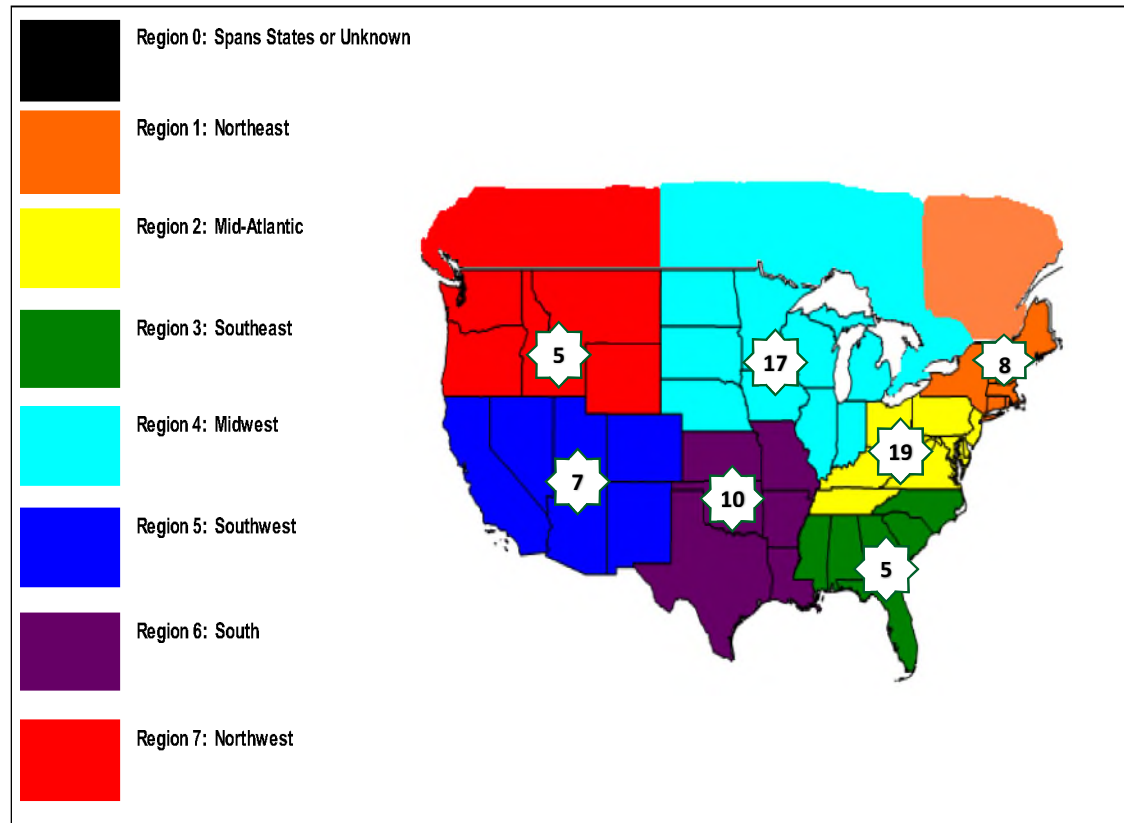
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For calendar data 2024



# Regions represented by the participants 2025 Benchmark Study

Reports on reliability for just over 70 million customers (73,203,817) represented by 74 operating companies with sizes grouped by:  
 Small ≤ 100 k  
 Medium < 1 m  
 Large > 1 m







## Respondents in 2025: 74

ALL	74	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	58	30	30	27	0.59	0.33	0.33	0.31	61	47	50	50
	Q1	205	95	89	86	1.12	0.84	0.77	0.70	164	106	110	106
	MEDIAN	319	135	123	111	1.45	1.06	0.93	0.86	206	124	129	129
	Q3	560	212	199	180	2.17	1.51	1.43	1.26	332	149	156	157
	MAX	3063	474	452	424	4.11	3.30	2.75	2.47	1388	232	240	247
	Study-Wide Weighted Results	616	168	138	119	1.74	1.31	1.07	0.95	354	128	129	126

## Updated Values: Respondents in 2024: 73

ALL	73	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	37	24	24	24	0.06	0.06	0.06	0.06	69	61	61	58
	Q1	156	85	81	75	1.01	0.74	0.65	0.59	160	110	113	111
	MEDIAN	266	119	110	94	1.27	0.98	0.86	0.78	192	136	140	140
	Q3	491	186	182	156	1.64	1.27	1.22	1.08	306	154	158	157
	MAX	2822	401	401	349	5.07	3.45	2.84	2.64	1032	589	562	562

## Original Results: Respondents in 2024: 73

ALL	73	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	37	24	24	24	0.06	0.06	0.06	0.06	69	61	61	58
	Q1	150	84	80	74	0.95	0.70	0.65	0.58	156	109	112	108
	MEDIAN	266	119	110	94	1.27	0.98	0.86	0.78	192	136	140	140
	Q3	491	186	182	156	1.64	1.27	1.22	1.08	306	154	158	157
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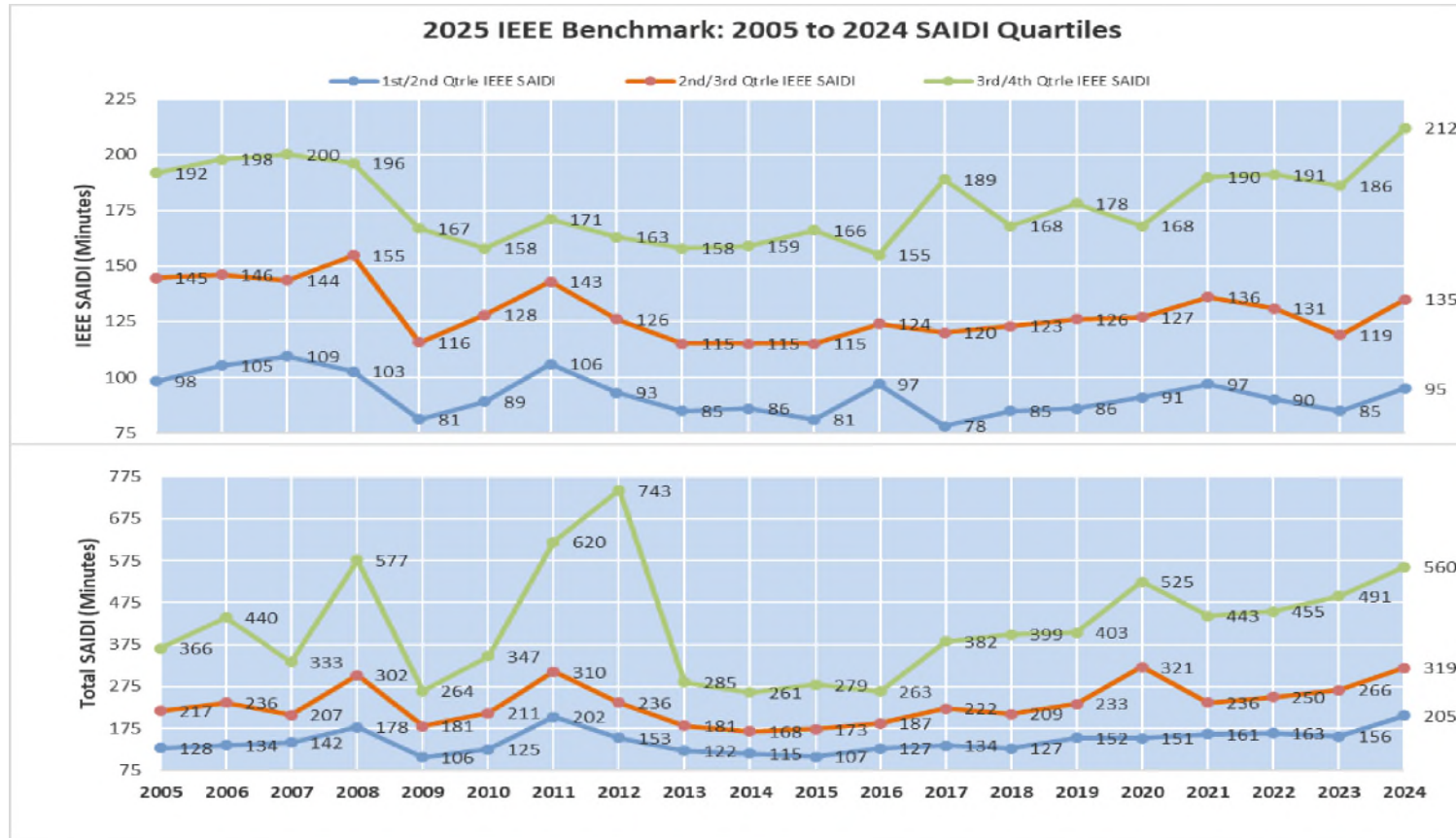


# Quartiles by Size

SIZE	COUNT	SAIDI				SAIFI				CAIDI			
		ALL	IEEE	WOF	WOP	ALL	IEEE	WOF	WOP	ALL	IEEE	WOF	WOP
LARGE	29	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	58	36	36	27	0.66	0.49	0.49	0.40	61	59	60	57
	Q1	207	90	87	78	1.04	0.83	0.76	0.65	178	101	105	104
	MEDIAN	306	120	120	101	1.38	1.01	0.90	0.84	202	118	119	119
	Q3	535	175	161	139	1.82	1.25	1.14	1.07	370	140	146	146
	MAX	3063	474	452	424	4.11	3.30	2.72	2.47	1388	232	240	247
MEDIUM	41	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	60	30	30	29	0.59	0.33	0.33	0.31	61	47	50	50
	Q1	205	101	95	88	1.18	0.87	0.77	0.72	163	110	113	115
	MEDIAN	309	150	137	135	1.44	1.15	1.04	0.97	205	128	133	132
	Q3	618	230	224	203	2.21	1.75	1.52	1.47	290	151	160	160
	MAX	1918	462	382	352	3.35	2.79	2.75	2.19	1076	198	193	197
SMALL	4	SAIDI ALL	SAIDI IEEE	SAIDI WOF	SAIDI WOP	SAIFI ALL	SAIFI IEEE	SAIFI WOF	SAIFI WOP	CAIDI ALL	CAIDI IEEE	CAIDI WOF	CAIDI WOP
	MIN	75	66	51	36	0.70	0.65	0.47	0.36	108	102	108	101
	Q1	297	82	78	74	1.36	0.75	0.71	0.68	203	108	110	108
	MEDIAN	726	112	112	99	1.65	0.91	0.85	0.82	308	113	113	112
	Q3	1144	157	157	134	2.16	1.07	0.99	0.88	444	139	145	145
	MAX	1331	218	216	205	3.49	1.19	1.19	0.98	632	213	236	242

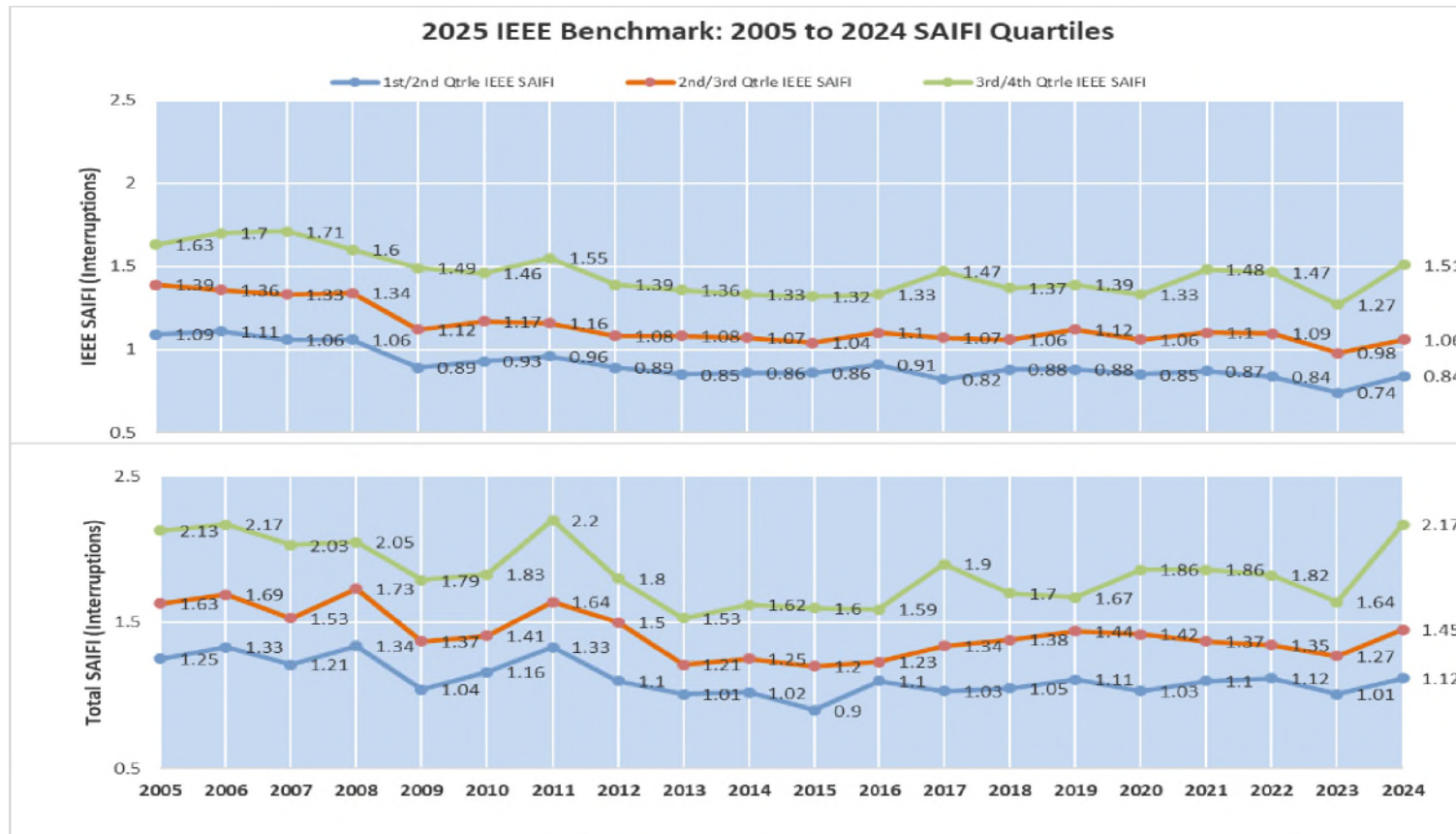


# Historic SAIDI Quartiles



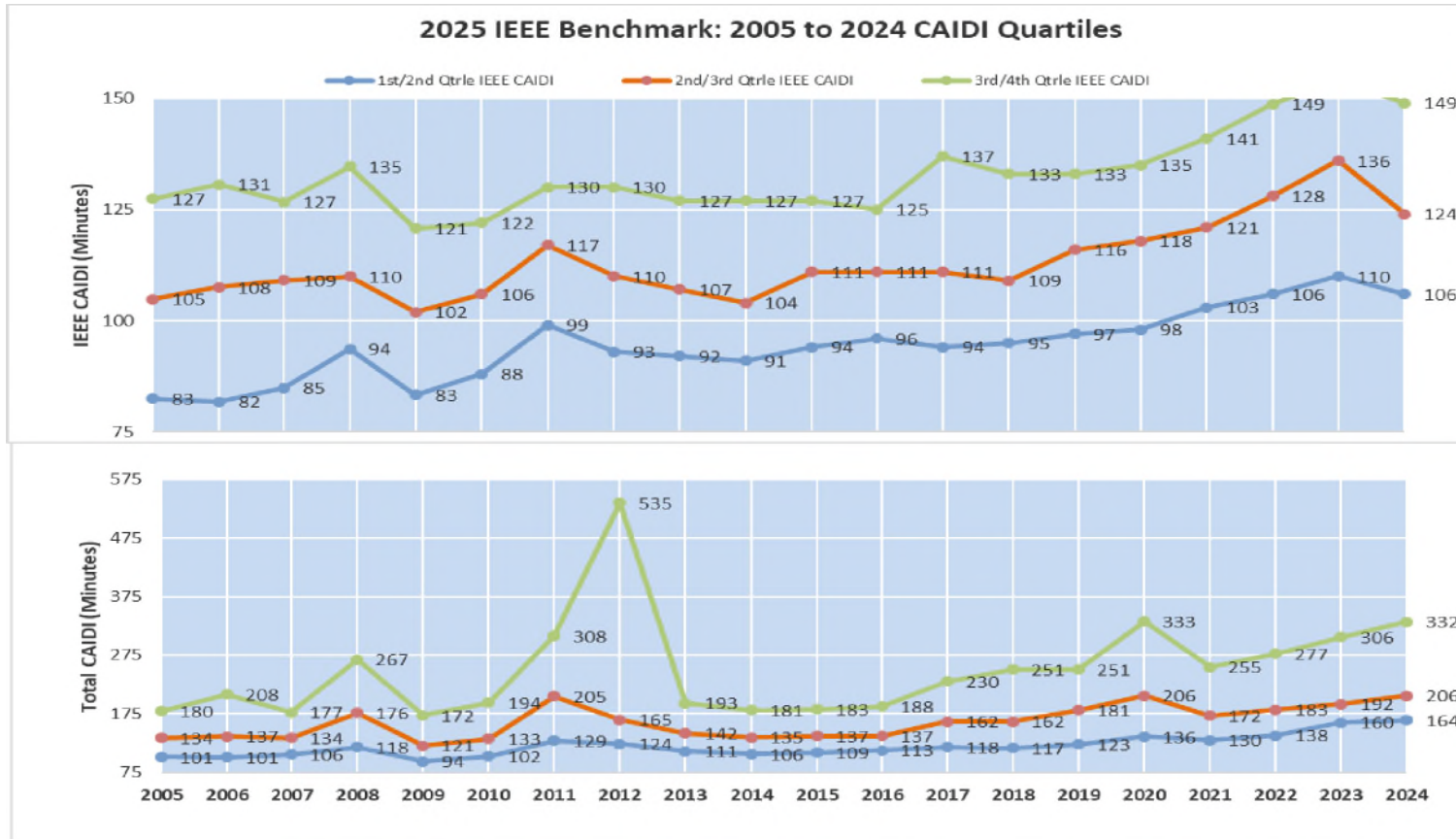


# Historic SAIFI Quartiles



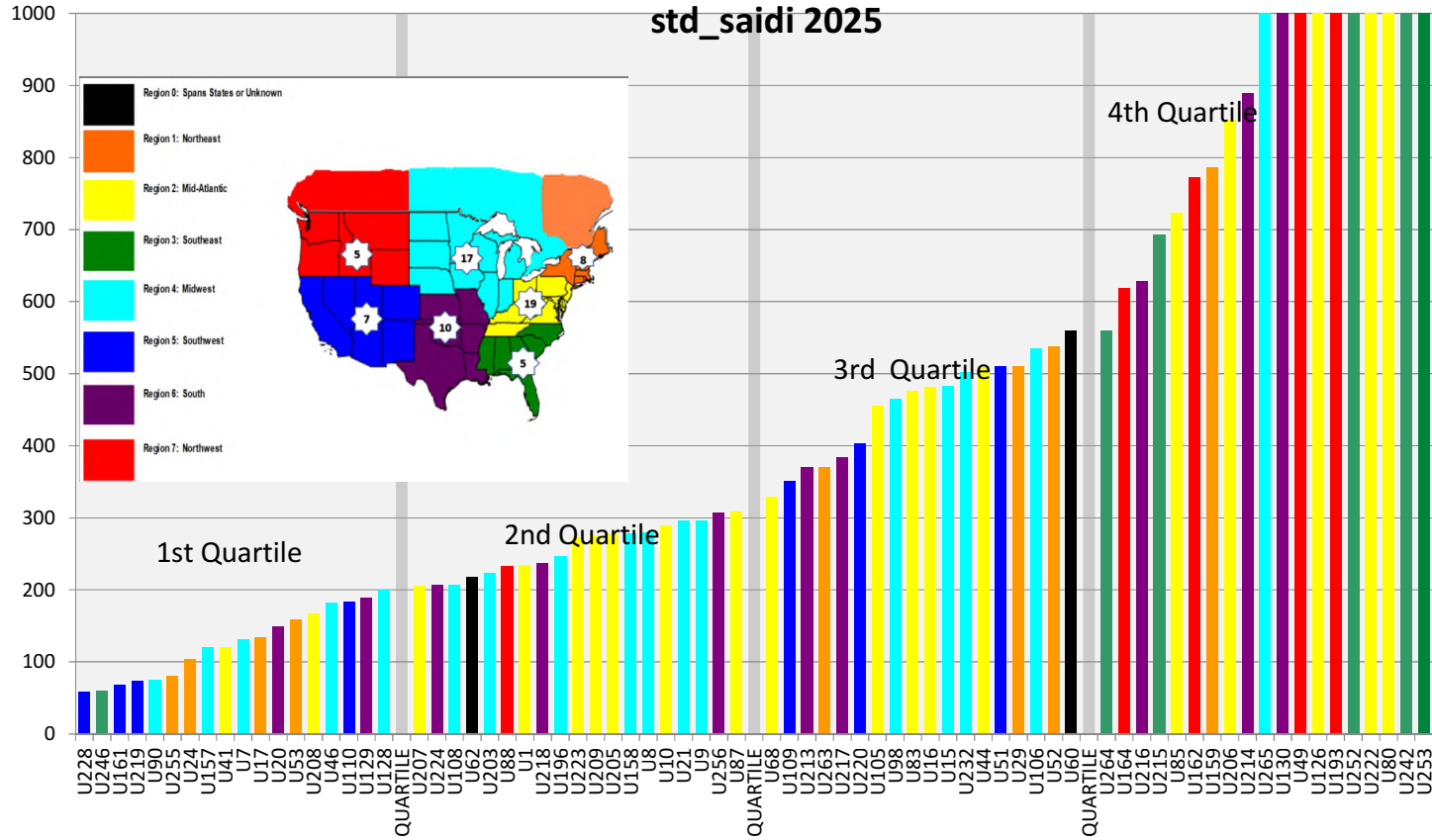


# Historic CAIDI Quartiles

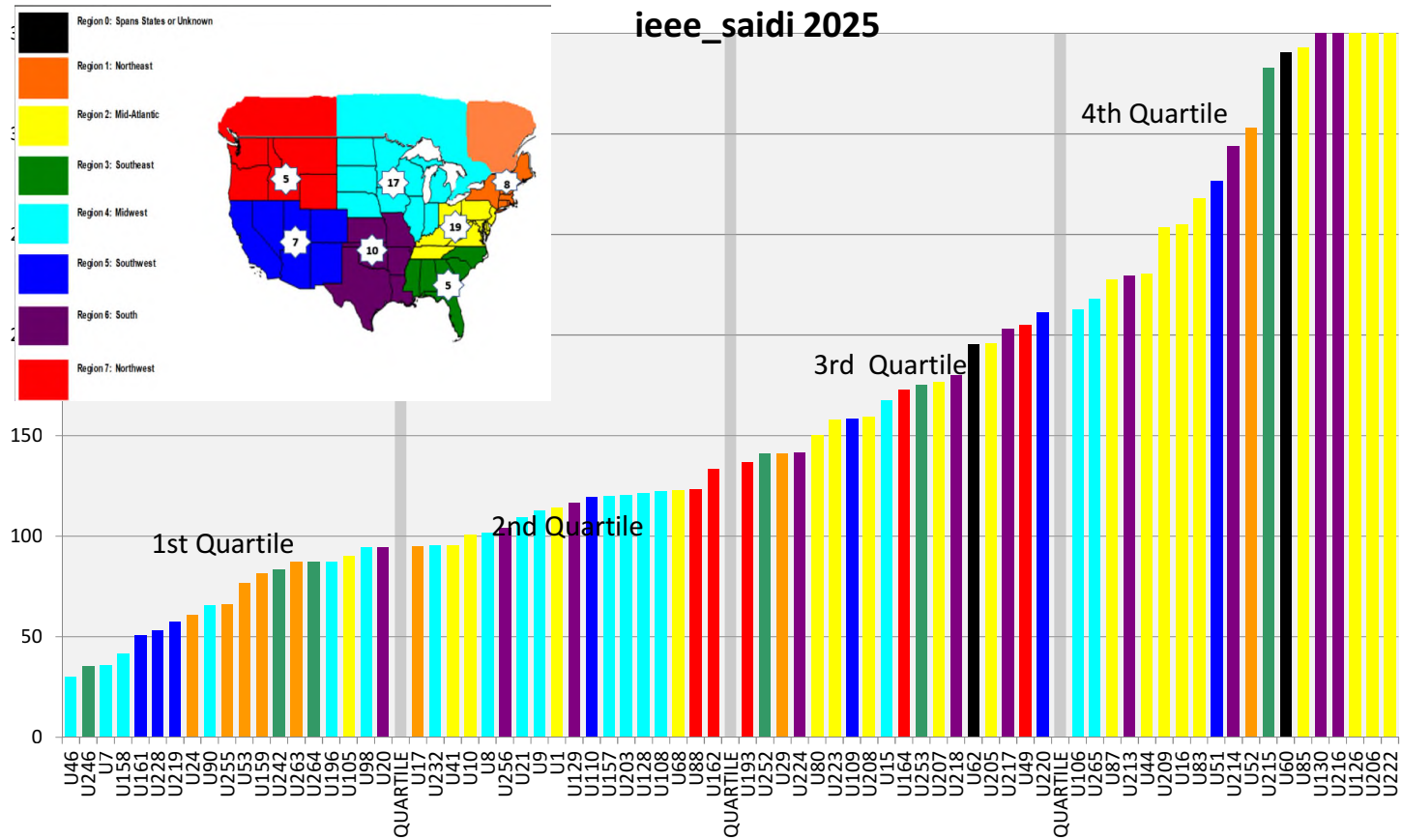




# Total SAIDI

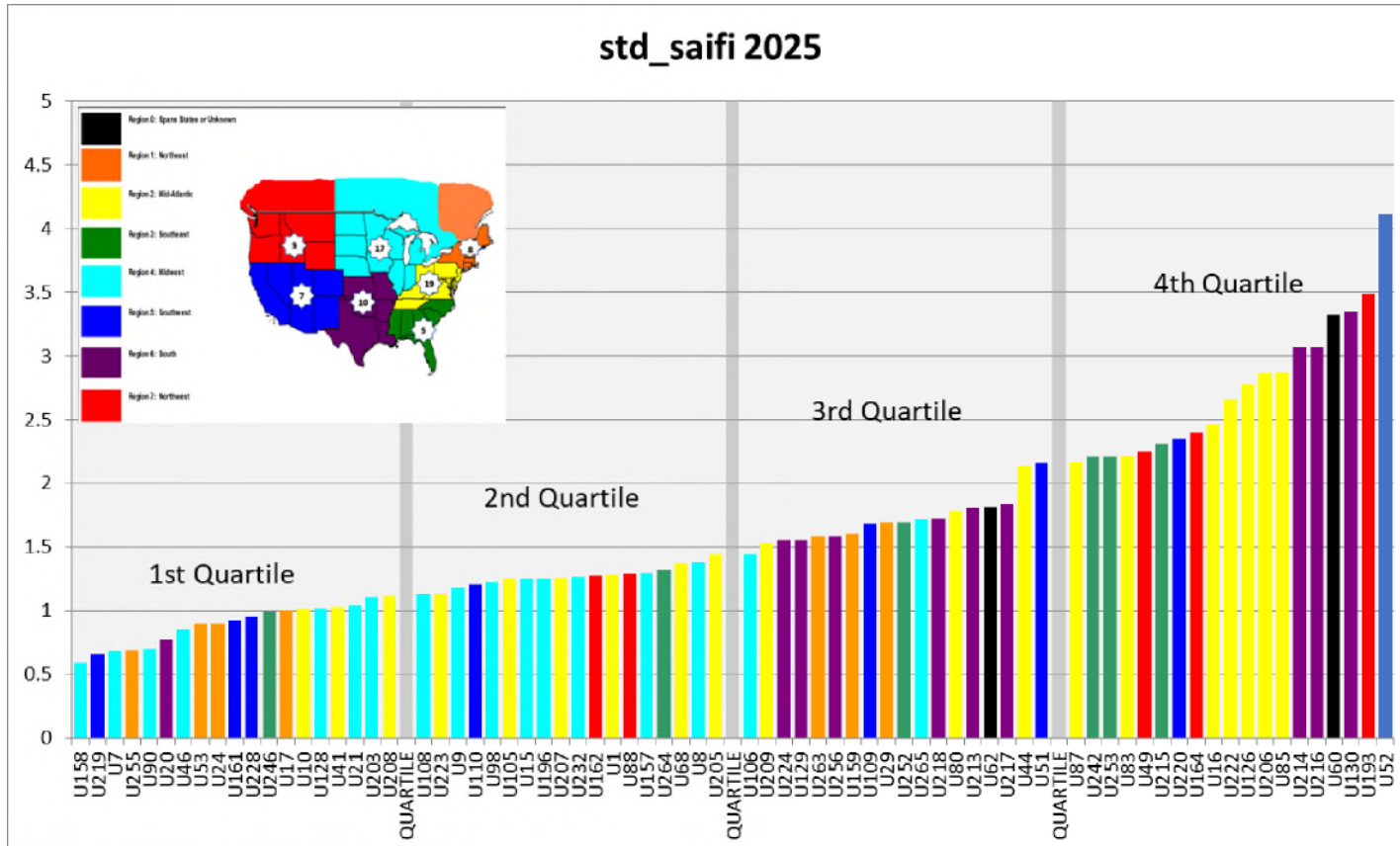


# IEEE SAIDI



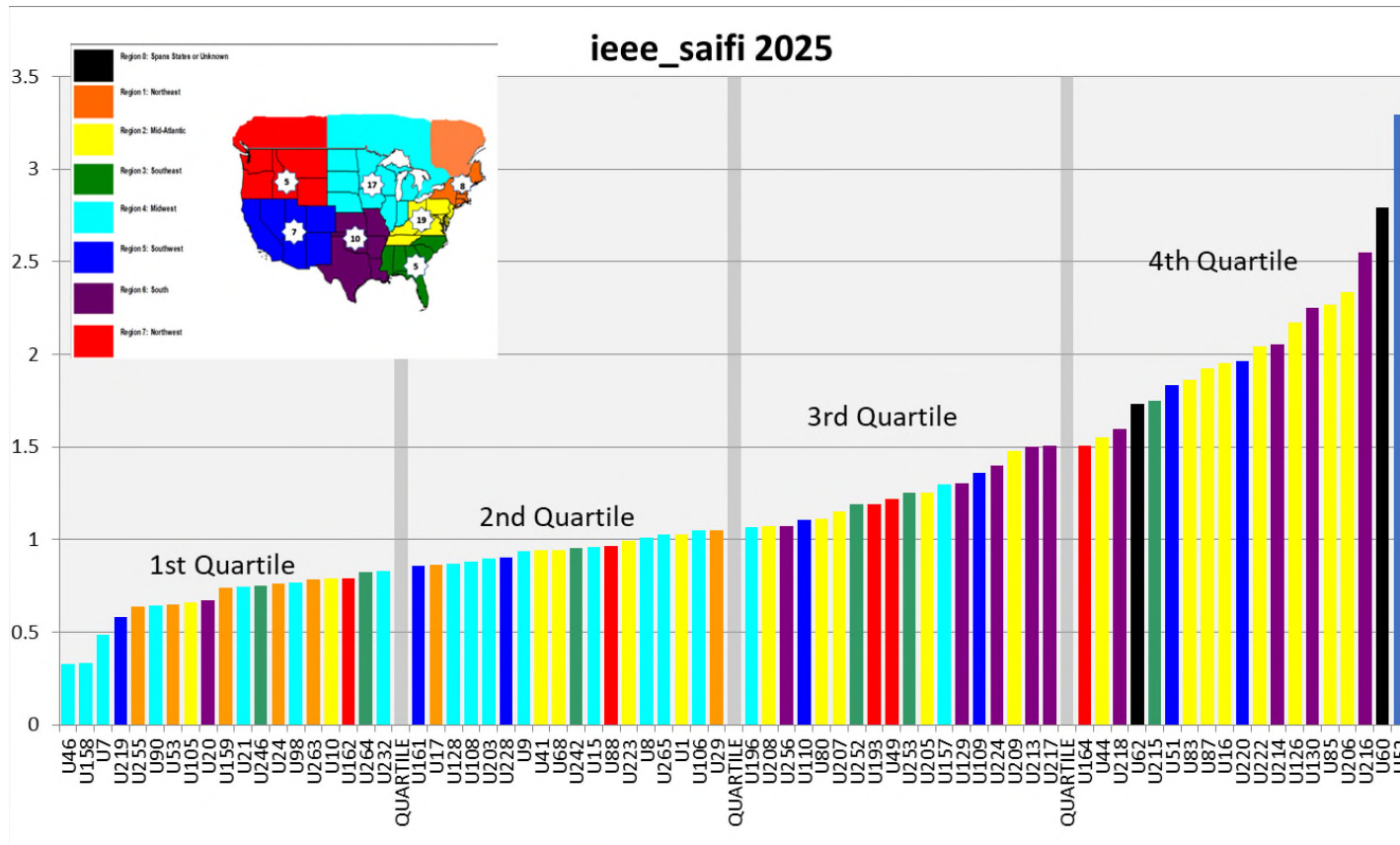


# Total SAIFI



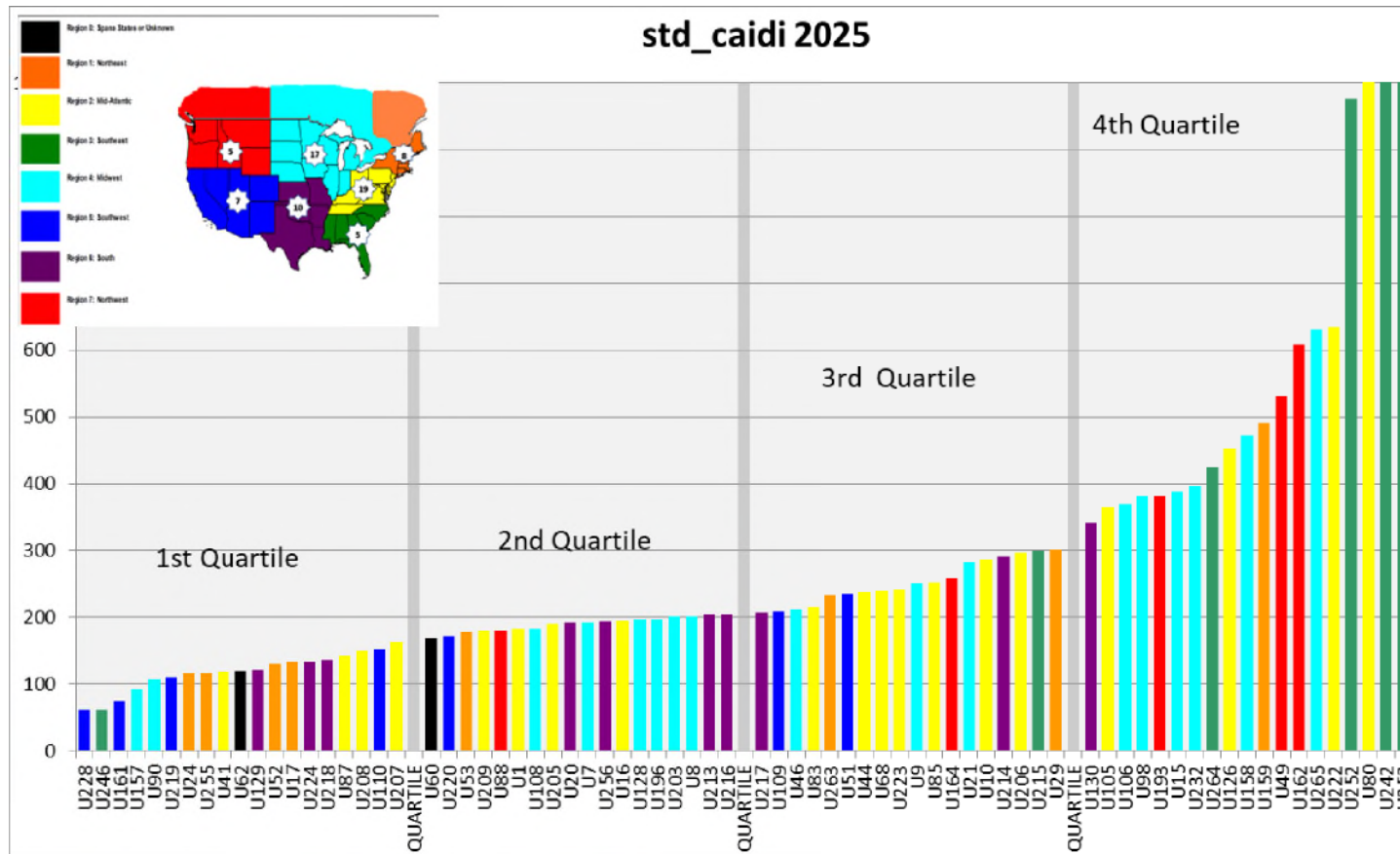


# IEEE SAIFI

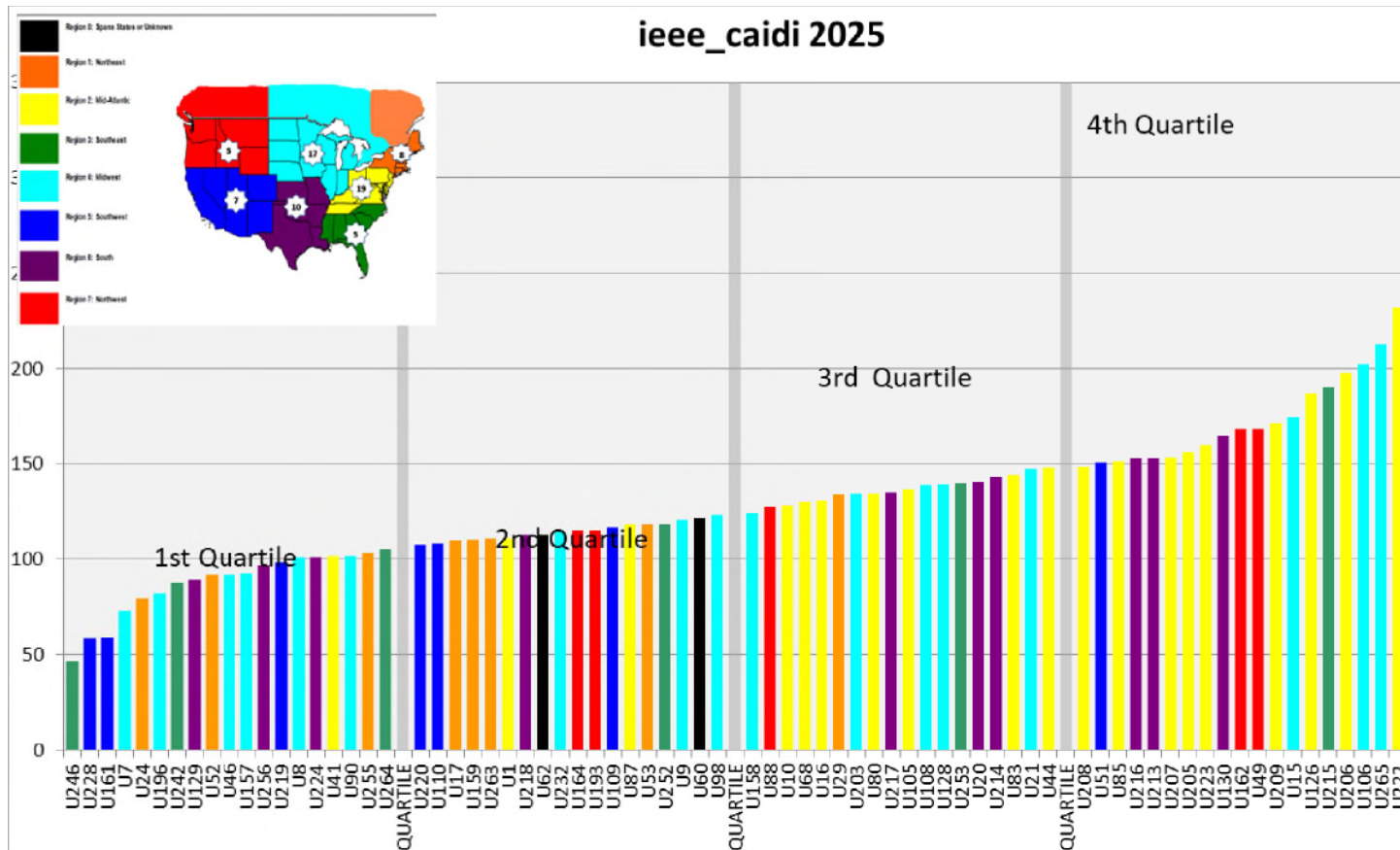




# Total CAIDI

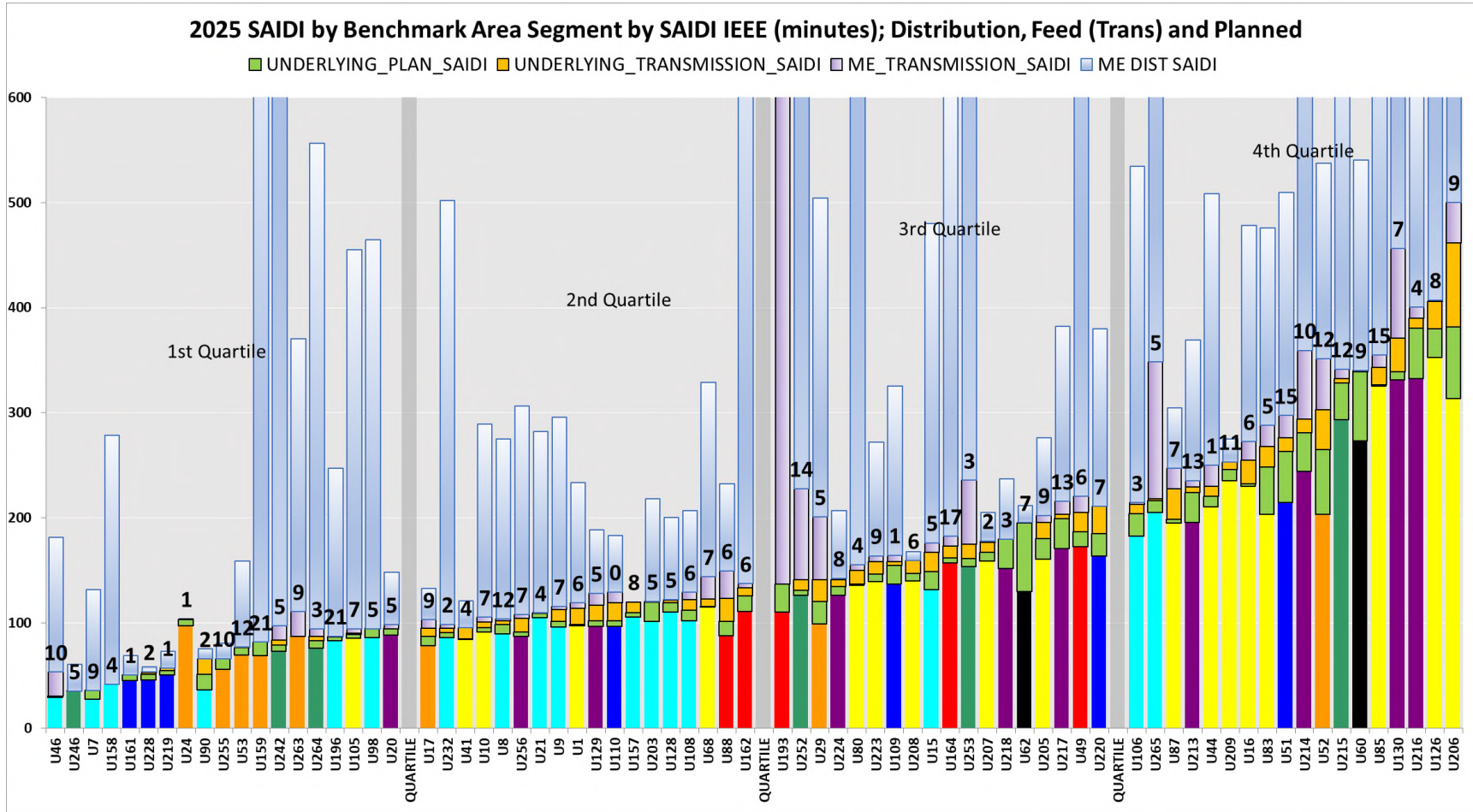


# IEEE CAIDI



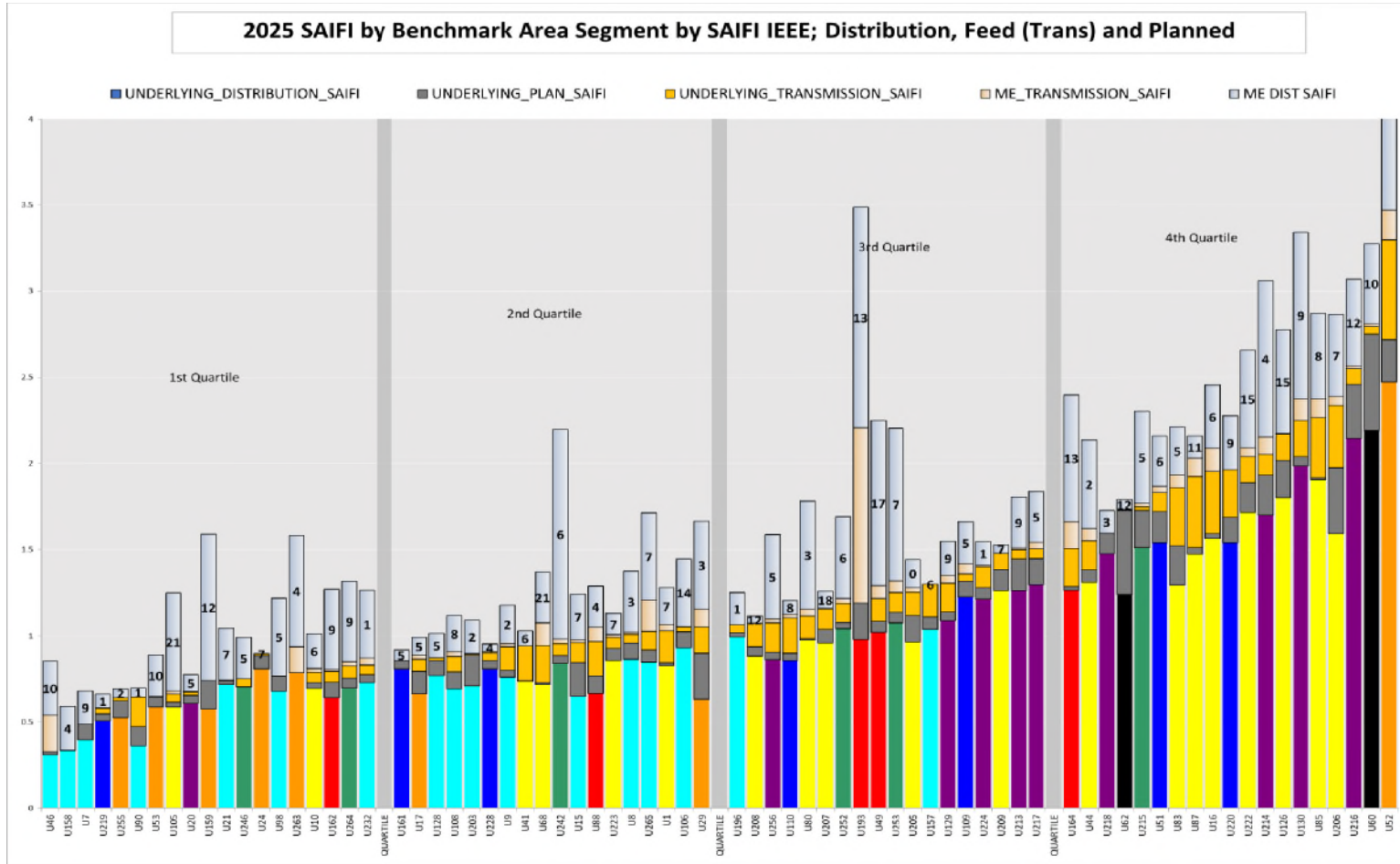


# Stacked SAIDI



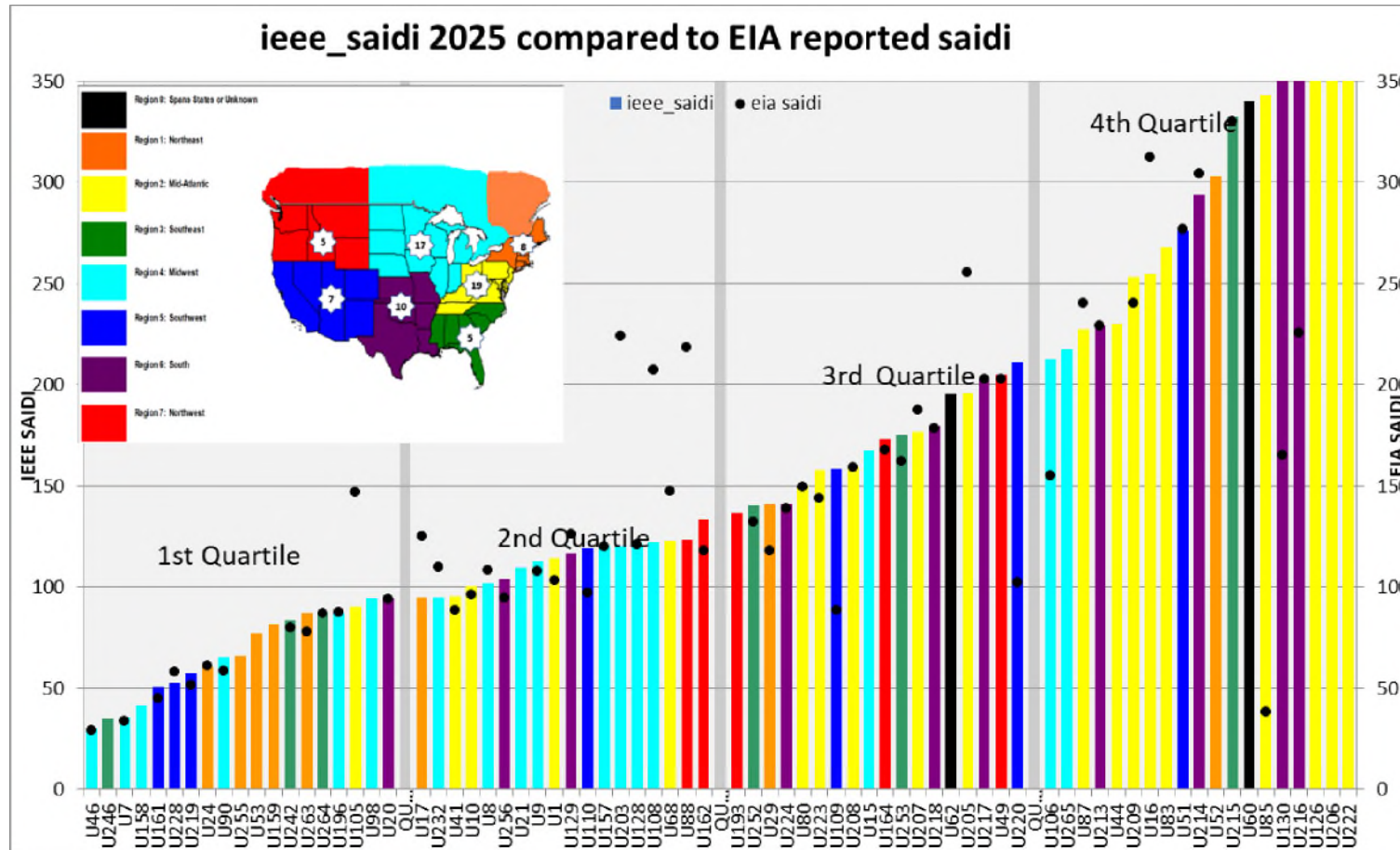


# Stacked SAIFI





# SAIDI IEEE versus EIA SAIDI



# Questions





Edison Electric  
INSTITUTE

# 2020 Reliability Survey Report

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*October 2021*



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## 2020 EEI Reliability Survey Report

The 2020 EEI Reliability Survey collected data from 81 utility companies that serve approximately 80 million retail electric customers or about 73% of customers served by EEI member companies.

For this survey, participants were asked to report data for their overall system, the distribution system and the transmission system, and results are depicted in both graphical and tabular formats.

**The EEI Reliability Survey is a confidential survey that is available for internal use only for EEI participating members.** All participants must agree to the non-disclosure agreement before being allowed to participate in the survey. Each year EEI declines numerous requests from EEI members, non-EEI members, regulatory agencies, academic institutions, etc., for copies of the Reliability Report or access to the data contained in the report. The confidentiality agreement exists because EEI members have stated that they want the data contained in the report to remain anonymous, confidential, and for internal use only. If the information is shared externally, members will stop participating, reducing the value of the survey.

Questions regarding this report should be addressed to:

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## IEEE Standard Definition for Reliability Statistics

The following definitions are the standard IEEE 1366-2012 definitions for the reliability indices:

### System Average Interruption Frequency Index

$$\text{SAIFI} = \frac{\text{Total Number of Customers Interrupted}}{\text{Total Number of Customers Served}}$$

### Customer Average Interruption Duration Index

$$\text{CAIDI} = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customer Interruptions}}$$

### System Average Interruption Duration Index

$$\text{SAIDI} = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customers Served}}$$

### Average Service Availability Index

$$\text{ASAI} = \frac{\text{Customer Hours Service Availability}}{\text{Customer Hours Service Demand}}$$

$$\text{ASAI} = \frac{8760 - \text{SAIDI}}{8760} \quad (24 \text{ Hours/day} \times 365 \text{ Days/Year} = 8,760 \text{ Hours/Year})$$

(NOTE: SAIDI is in Hours or SAIDI (minutes)/60)

### Momentary Average Interruption Frequency Index

$$\text{MAIFI} = \frac{\text{Total Number of Customer Momentary Interruptions}}{\text{Total Number of Customers Served}}$$

### Three Year Average\* of System Average Interruption Frequency Index (SAIFI)

$$3 \text{ Year Avg. SAIFI} = \text{Sum of SAIFI for Three Consecutive Years}/3$$

### Three Year Average\* of System Average Interruption Duration Index (SAIDI)

$$3 \text{ Year Avg. SAIDI} = \text{Sum of SAIDI for Three Consecutive Years}/3$$

### Customers Experiencing Multiple Interruptions (CEMI<sub>n</sub>)

$$\text{CEMI}_n = \frac{\text{Total Number of Customers that Experience } n \text{ or More Sustained Interruptions}}{\text{Total Number of Customers Served}}$$

\*Not an IEEE definition

## 2020 Reliability Survey (Overall System) Data

The following chart contains the 2020 Overall System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

<b>2020 Reliability Indices (For All Interruptions)</b>					
	<b>1st</b>	<b>2nd</b>	<b>3rd</b>	<b>4th</b>	<b>Responses</b>
<b>SAIFI</b>	<0.988	0.988 – 1.265	1.272 – 1.648	>1.648	78
<b>CAIDI</b>	<121.40	121.40 – 180.60	183.99 – 307.12	>307.12	78
<b>SAIDI</b>	<131.34	131.34 – 223.58	235.69 – 472.50	>472.50	78
<b>ASAI</b>	>99.975	99.975– 99.9576	99.955 – 99.9103	<99.9103	78
<b>MAIFI</b>	<1.085	1.085 – 1.479	1.625 – 3.864	>3.864	20
<b>3 Yr. Avg. SAIFI*</b>	<1.141	1.141 – 1.371	1.381 – 1.562	>1.562	70
<b>3 Yr. Avg. SAIDI*</b>	<158.4	158.4 – 272.49	282.37 - 401.68	>401.68	70
<b>CEMI<sub>3</sub>**</b>	<10.91	10.91 – 15.98	16.06 – 22.77	>22.77	57
<b>CEMI<sub>4</sub>**</b>	<4.67	4.67 – 7.76	7.92 – 13.05	>13.05	57
<b>CEMI<sub>5</sub>**</b>	<1.91	1.91 – 4.10	4.12 – 7.38	>7.38	57
<b>CEMI<sub>6</sub>**</b>	<0.89	0.89 – 2.065	2.15 – 4.20	>4.20	57
<b>2020 Reliability Indices (Excluding Major Events)</b>					
	<b>1st</b>	<b>2nd</b>	<b>3rd</b>	<b>4th</b>	<b>Responses</b>
<b>SAIFI</b>	<0.768	0.768 – 0.935	0.936 – 1.139	>1.139	78
<b>CAIDI</b>	<94.20	94.20 – 107.89	108.60 – 127.76	>127.76	78
<b>SAIDI</b>	<78.58	78.58 – 99.69	101.30 – 139.15	>139.15	78
<b>ASAI</b>	>99.9851	99.9851 – 99.9811	99.9808 – 99.9736	<99.9736	78
<b>MAIFI</b>	<1.178	1.178 – 1.534	1.692 – 2.847	>2.847	19
<b>3 Yr. Avg. SAIFI*</b>	<0.869	0.869 – 1.019	1.036 – 1.214	>1.214	70
<b>3 Yr. Avg. SAIDI*</b>	<85.47	85.47 – 108.36	108.95 – 151.81	>151.81	70
<b>CEMI<sub>3</sub>**</b>	<8.00	8.00 – 10.53	10.57 – 17.56	>17.56	56
<b>CEMI<sub>4</sub>**</b>	<2.89	2.89 – 4.65	4.66 – 8.69	>8.69	56
<b>CEMI<sub>5</sub>**</b>	<1.00	1.00 – 1.98	2.03 – 4.23	>4.23	56
<b>CEMI<sub>6</sub>**</b>	<0.35	0.35 – 0.83	0.89 – 1.81	>1.81	56

\* Three-year average for the period 2018-2020

\*\* Customers experiencing multiple interruptions as % of customers served per IEEE 1366-2012 Guide

## 2019 Reliability Survey (Overall System) Data

The following chart contains the 2019 Overall System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

2019 Reliability Indices (For All Interruptions)					
	1st	2nd	3rd	4th	Responses
SAIFI	<1.108	1.108 – 1.356	1.358 – 1.654	>1.654	80
CAIDI	<119.99	119.99 – 170.01	171.17 – 231.33	>231.33	80
SAIDI	<159.91	159.91 – 218.96	227.68 – 334.44	>334.44	80
ASAI	>99.9696	99.9696– 99.9583	99.9567 – 99.9364	<99.9364	80
MAIFI	<1.450	1.450 – 1.745	1.793 – 2.720	>2.720	21
3 Yr. Avg. SAIFI*	<1.086	1.086 – 1.358	1.359 – 1.573	>1.573	71
3 Yr. Avg. SAIDI*	<156.14	156.14 – 225.17	239.32 - 461.66	>461.66	71
CEMI <sub>3</sub> **	<13.06	13.06 – 18.95	19.04 – 27.47	>27.47	57
CEMI <sub>4</sub> **	<6.20	6.20 – 8.83	8.85 – 14.08	>14.08	57
CEMI <sub>5</sub> **	<2.91	2.91 – 4.36	4.51 – 8.10	>8.10	57
CEMI <sub>6</sub> **	<1.39	1.39 – 2.33	2.36 – 4.64	>4.64	57
2019 Reliability Indices (Excluding Major Events)					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.875	0.875 – 1.036	1.056 – 1.322	>1.322	80
CAIDI	<95.28	95.28 – 110.01	110.47 – 130.80	>130.80	80
SAIDI	<82.63	82.63 – 113.45	114.56 – 160.55	>160.55	80
ASAI	>99.9843	99.9843 – 99.9784	99.9782 – 99.9703	<99.9703	80
MAIFI	<1.228	1.228 – 1.542	1.621 – 2.650	>2.650	19
3 Yr. Avg. SAIFI*	<0.899	0.899 – 1.040	1.041 – 1.226	>1.226	71
3 Yr. Avg. SAIDI*	<88.08	88.08 – 116.62	116.73 – 155.25	>155.25	71
CEMI <sub>3</sub> **	<9.33	9.33 – 12.48	13.19 – 19.81	>19.81	56
CEMI <sub>4</sub> **	<3.39	3.39 – 5.64	5.75 – 10.38	>10.38	56
CEMI <sub>5</sub> **	<1.32	1.32 – 2.51	2.71 – 5.33	>5.33	56
CEMI <sub>6</sub> **	<0.54	0.54 – 1.19	1.39 – 2.48	>2.48	56

\* Three-year average for the period 2016-2019

\*\* Customers experiencing multiple interruptions as % of customers served per IEEE 1366-2012 Guide



## 2020 Distribution System Reliability Survey Data

The following chart contains the 2020 Distribution System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

<b>2020 Distribution System Reliability Indices (For All Interruptions)</b>					
	1st	2nd	3rd	4th	Responses
<b>SAIFI</b>	<0.837	0.837 – 1.126	1.126 – 1.520	>1.520	77
<b>CAIDI</b>	<126.21	126.21 – 190.39	190.48 – 316.52	>316.52	77
<b>SAIDI</b>	<125.70	125.70 – 196.65	198.93– 453.30	>453.30	77
<b>ASAI</b>	>99.9763	99.9763 – 99.9629	99.9627 – 99.9170	<99.9170	77
<b>MAIFI</b>	<0.64	0.64 – 1.23	1.29 – 1.46	>1.46	17
<b>2020 Distribution System Reliability Indices (Excluding Major Events)</b>					
	1st	2nd	3rd	4th	Responses
<b>SAIFI</b>	<0.672	0.672 – 0.840	0.852 – 1.006	>1.006	77
<b>CAIDI</b>	<98.91	98.91 – 114.30	116.42 – 134.56	>134.56	77
<b>SAIDI</b>	<71.20	71.20 – 92.04	92.24 – 126.32	>126.32	77
<b>ASAI</b>	>99.9868	99.9868 – 99.9830	99.9830 – 99.9767	<99.9767	77
<b>MAIFI</b>	<0.923	0.923 – 1.178	1.191 – 1.273	>1.273	18

## 2020 Transmission System Reliability Survey Data

The following chart contains the 2020 Transmission System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

<b>2020 Transmission System Reliability Indices (For All Interruptions)</b>					
	1st	2nd	3rd	4th	Responses
<b>SAIFI</b>	<0.042	0.042 – 0.089	0.120 – 0.211	>0.211	70
<b>CAIDI</b>	<70.99	70.99 – 109.77	111.00 – 200.82	>200.82	70
<b>SAIDI</b>	<4.112	4.112 – 14.642	14.66 – 43.49	>43.49	70
<b>ASAI</b>	>99.99922	99.99922 – 99.99819	99.99722 – 99.99175	<99.99175	70
<b>MAIFI</b>	<0.012	0.012 – 0.042	0.048 – 0.393	>0.393	17
<b>2020 Transmission System Reliability Indices (Excluding Major Events)</b>					
	1st	2nd	3rd	4th	Responses
<b>SAIFI</b>	<0.032	0.032 – 0.082	0.086 – 0.165	>0.165	69
<b>CAIDI</b>	<51.79	51.79 – 75.68	76.18 – 111.19	>111.19	69
<b>SAIDI</b>	<2.322	2.322 – 5.059	5.090 – 16.574	>16.574	69
<b>ASAI</b>	>99.99959	99.99959 – 99.99907	99.99904 – 99.99690	<99.99690	69
<b>MAIFI</b>	<0.020	0.020 – 0.047	0.057 – 0.355	>0.355	17

## 2019 Distribution System Reliability Survey Data

The following chart contains the 2019 Distribution System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

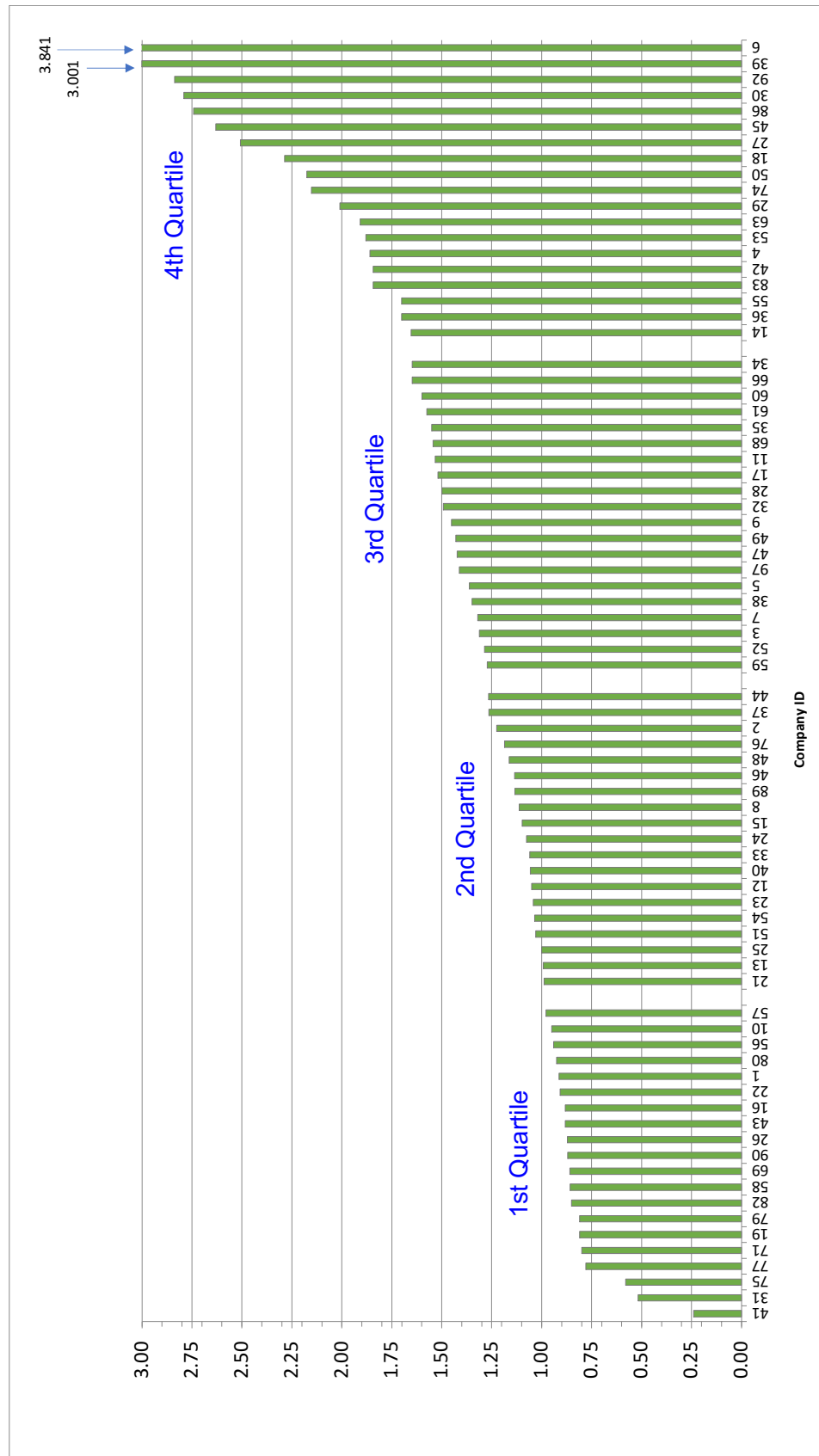
2019 Distribution System Reliability Indices (For All Interruptions)					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.956	0.956 – 1.147	1.154 – 1.406	>1.406	80
CAIDI	<121.81	121.81 – 177.35	179.65 – 240.12	>240.12	80
SAIDI	<131.32	131.32 – 205.73	205.80– 308.48	>308.48	80
ASAI	>99.9750	99.9750 – 99.9621	99.9609 – 99.9413	<99.9413	80
MAIFI	<0.84	0.84 – 1.32	1.55 – 1.94	>1.94	20
2019 Distribution System Reliability Indices (Excluding Major Events)					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.789	0.789 – 0.870	0.880 – 1.115	>1.115	80
CAIDI	<100.78	100.78 – 112.14	112.15 – 133.70	>133.70	80
SAIDI	<79.60	79.60 – 96.15	96.22 – 144.02	>144.02	80
ASAI	>99.9849	99.9849 – 99.9819	99.9817 – 99.9726	<99.9726	80
MAIFI	<0.929	0.929 – 1.168	1.184 – 1.610	>1.610	20

## 2019 Transmission System Reliability Survey Data

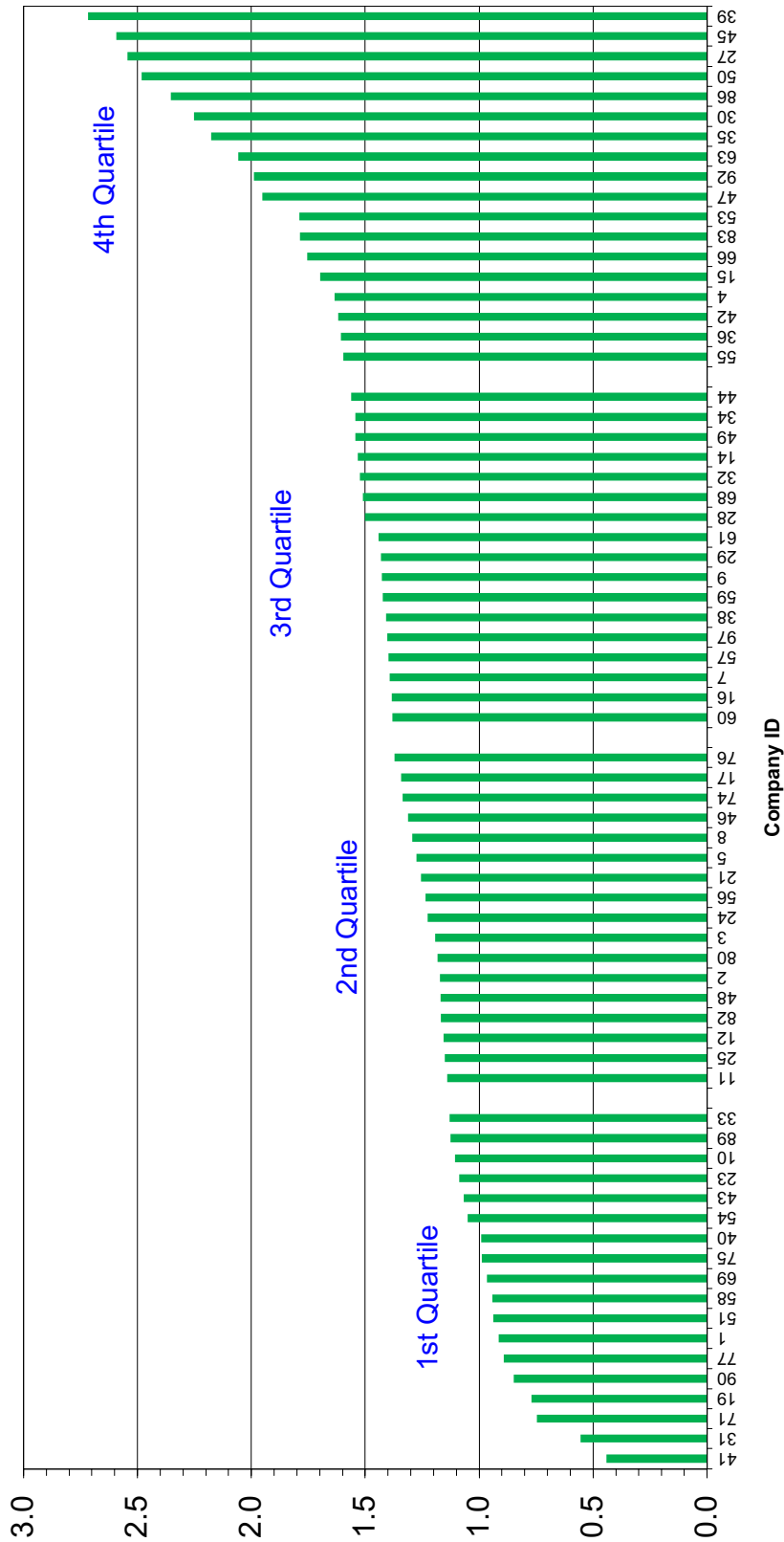
The following chart contains the 2019 Transmission System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

2019 Transmission System Reliability Indices (For All Interruptions)					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.078	0.078 – 0.131	0.136 – 0.243	>0.243	74
CAIDI	<70.76	70.76 – 96.23	97.80 – 152.06	>152.06	73
SAIDI	<5.938	5.938 – 15.000	15.34 – 28.09	>28.09	74
ASAI	>99.9989	99.9989 – 99.99715	99.99708 – 99.99466	<99.99466	74
MAIFI	<0.043	0.043 – 0.150	0.184 – 0.601	>0.601	17
2019 Transmission System Reliability Indices (Excluding Major Events)					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.052	0.052 – 0.108	0.104 – 0.199	>0.199	74
CAIDI	<48.29	48.29 – 76.39	76.80 – 104.72	>104.72	73
SAIDI	<2.665	2.665 – 7.175	7.694 – 14.686	>14.686	74
ASAI	>99.99950	99.99950 – 99.99863	99.99854 – 99.997206	<99.997206	74
MAIFI	<0.043	0.043 – 0.130	0.134 – 0.520	>0.520	17

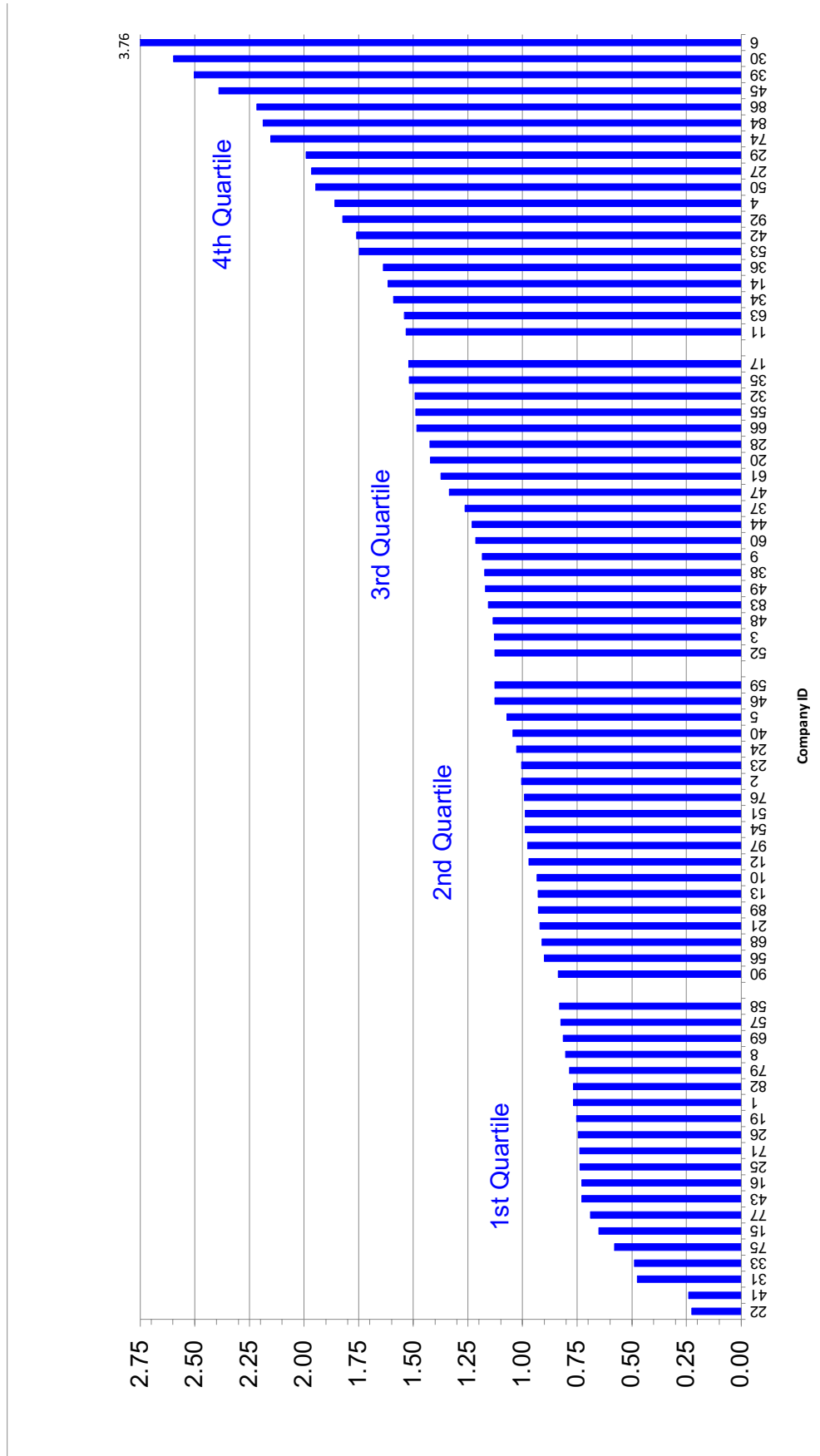
### 2020 Overall System – SAIFI For All Interruptions



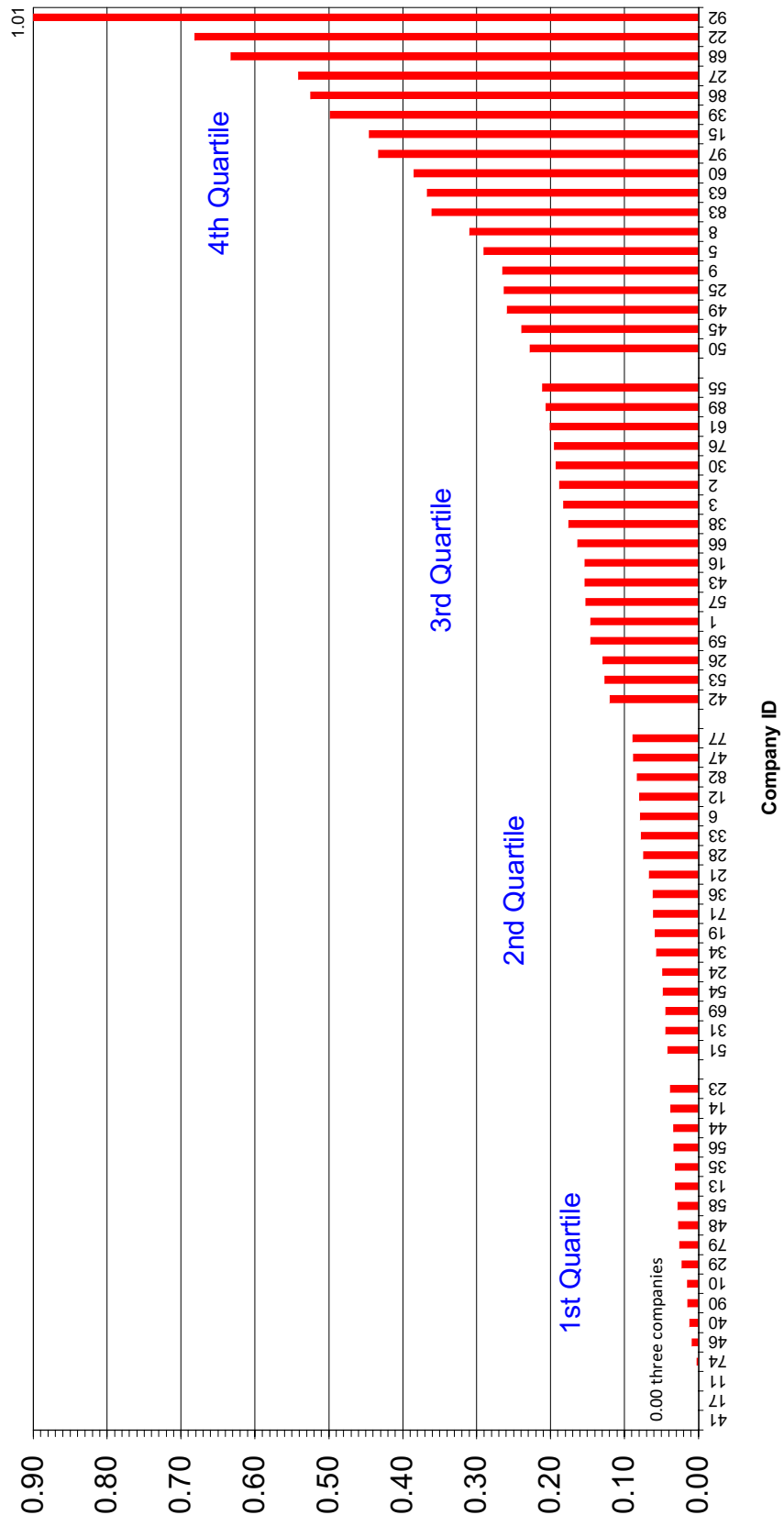
### 2018-2020 Overall System – Three Year Average SAIFI For All Interruptions



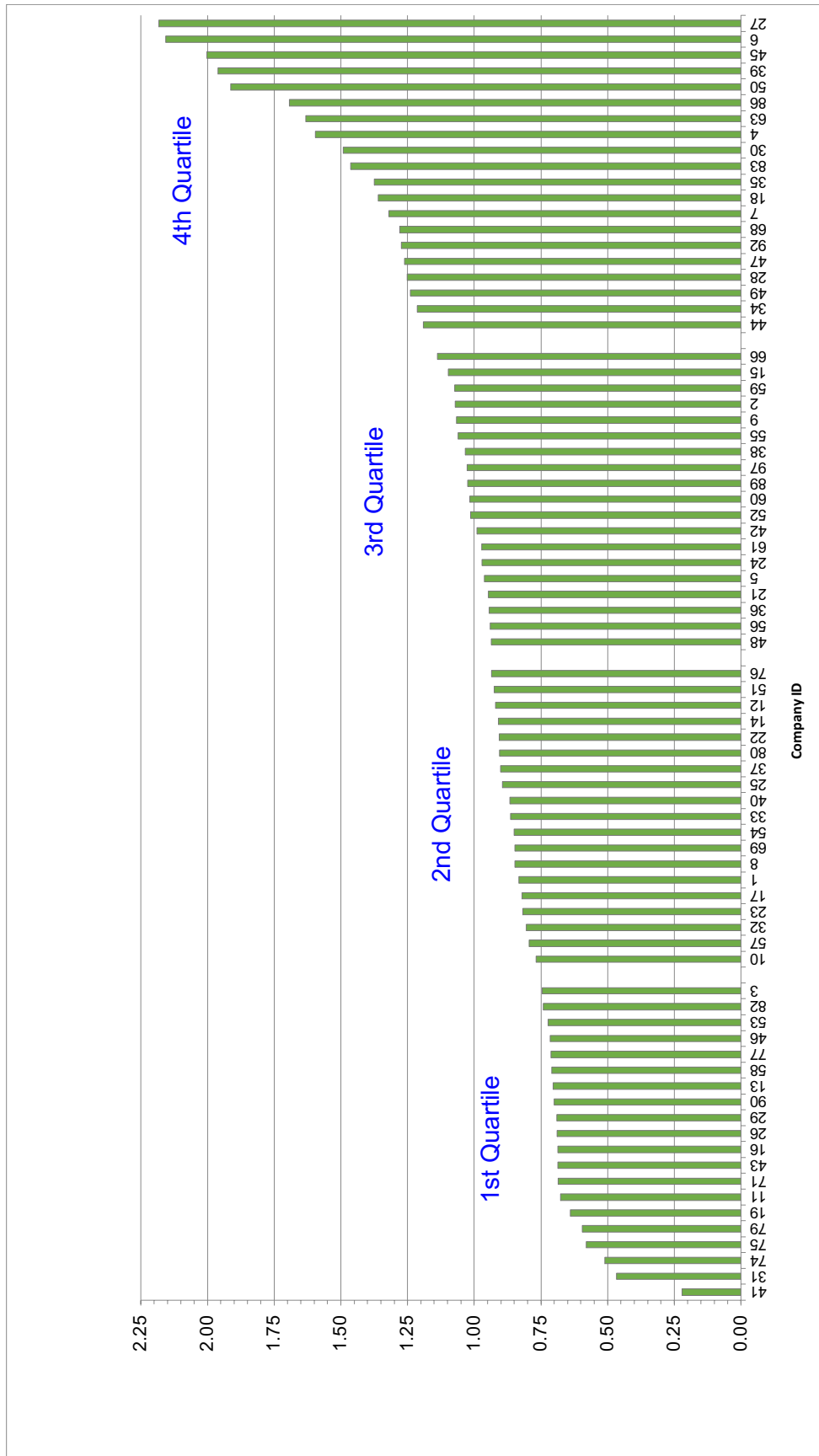
### 2020 Distribution System – SAIFI (For All Interruptions)



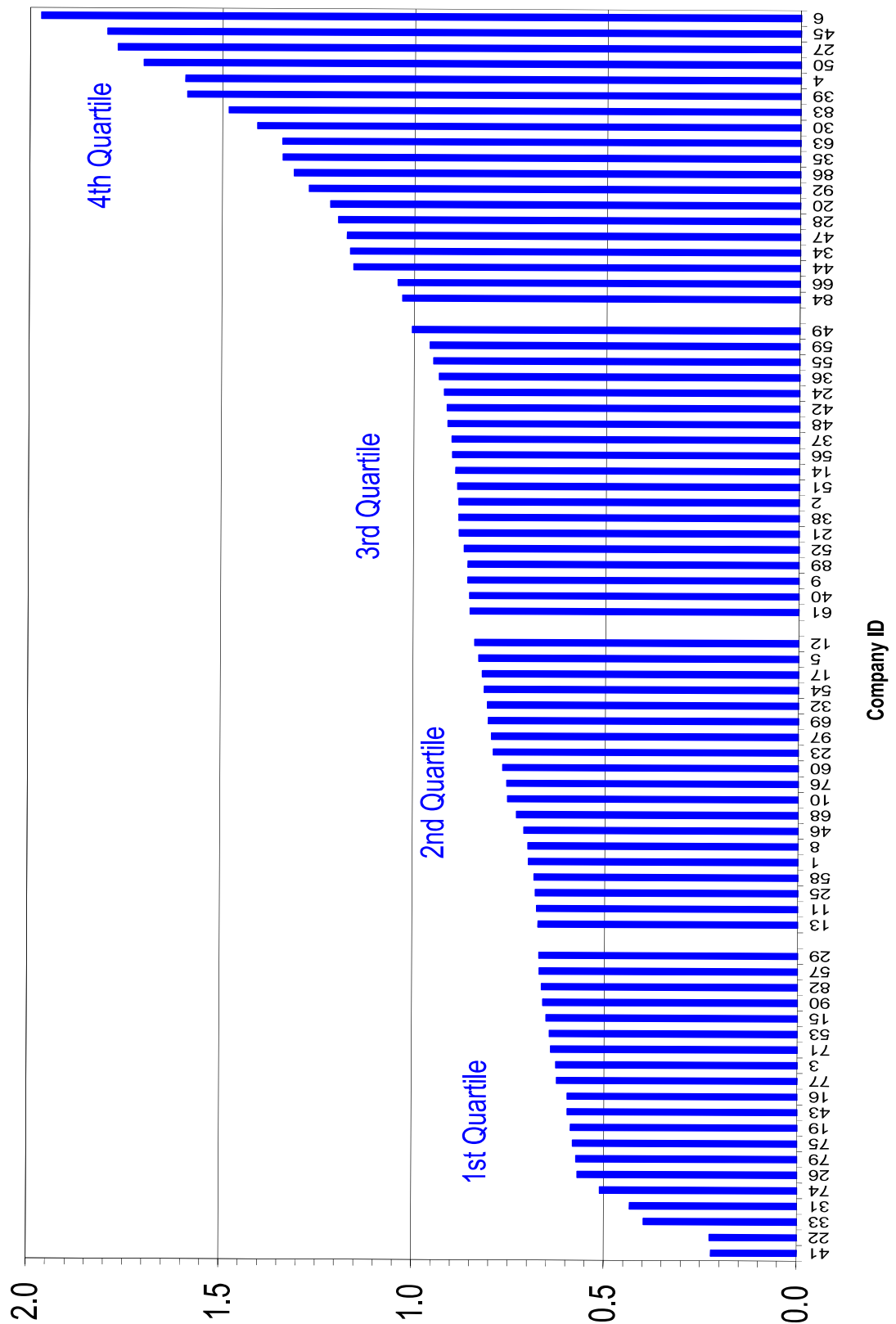
### 2020 Transmission System – SAIFI (For All Interruptions)



### 2020 Overall System – SAIFI (Excluding Major Events)

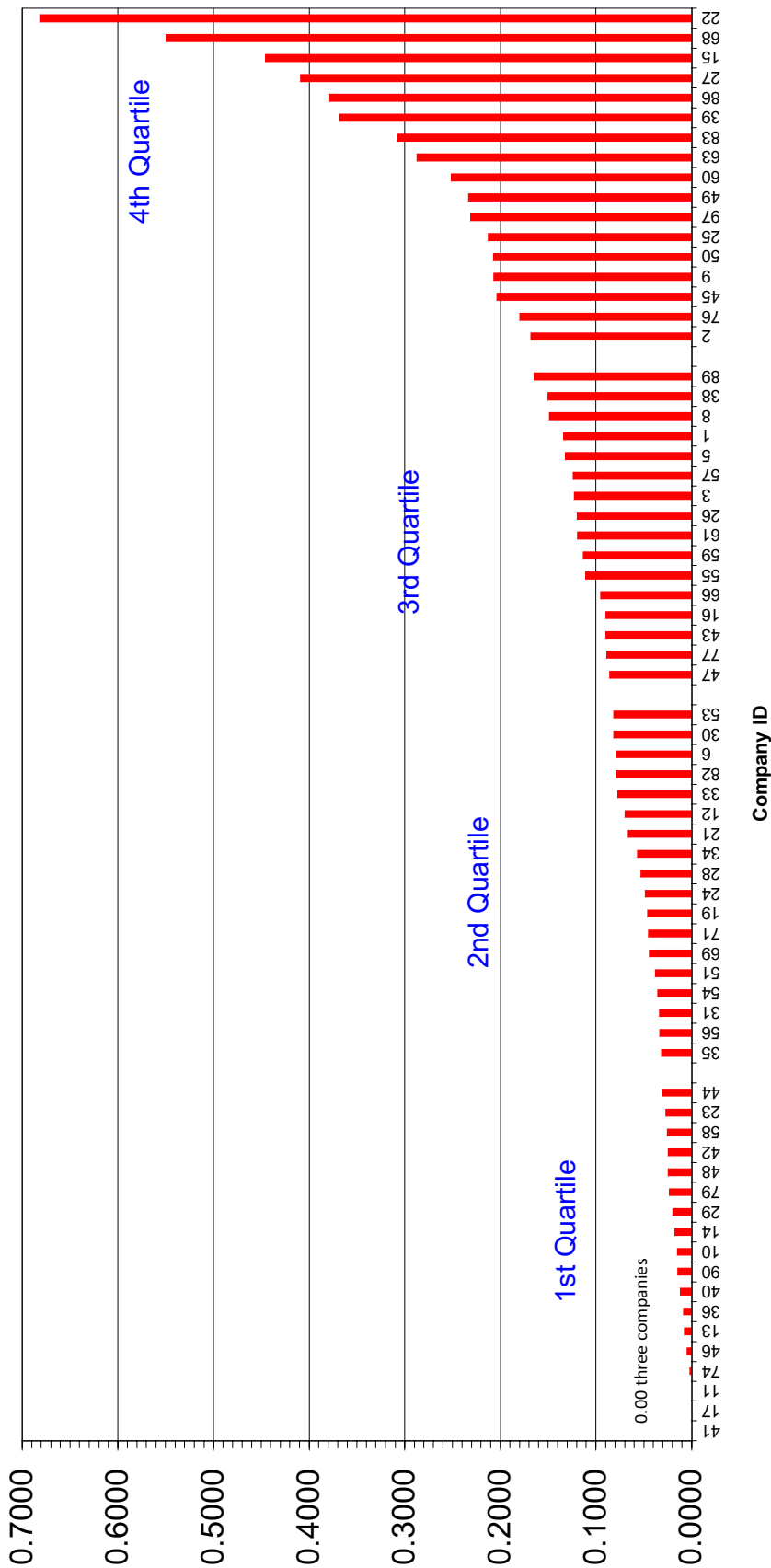


### 2020 Distribution System – SAIFI (Excluding Major Events)

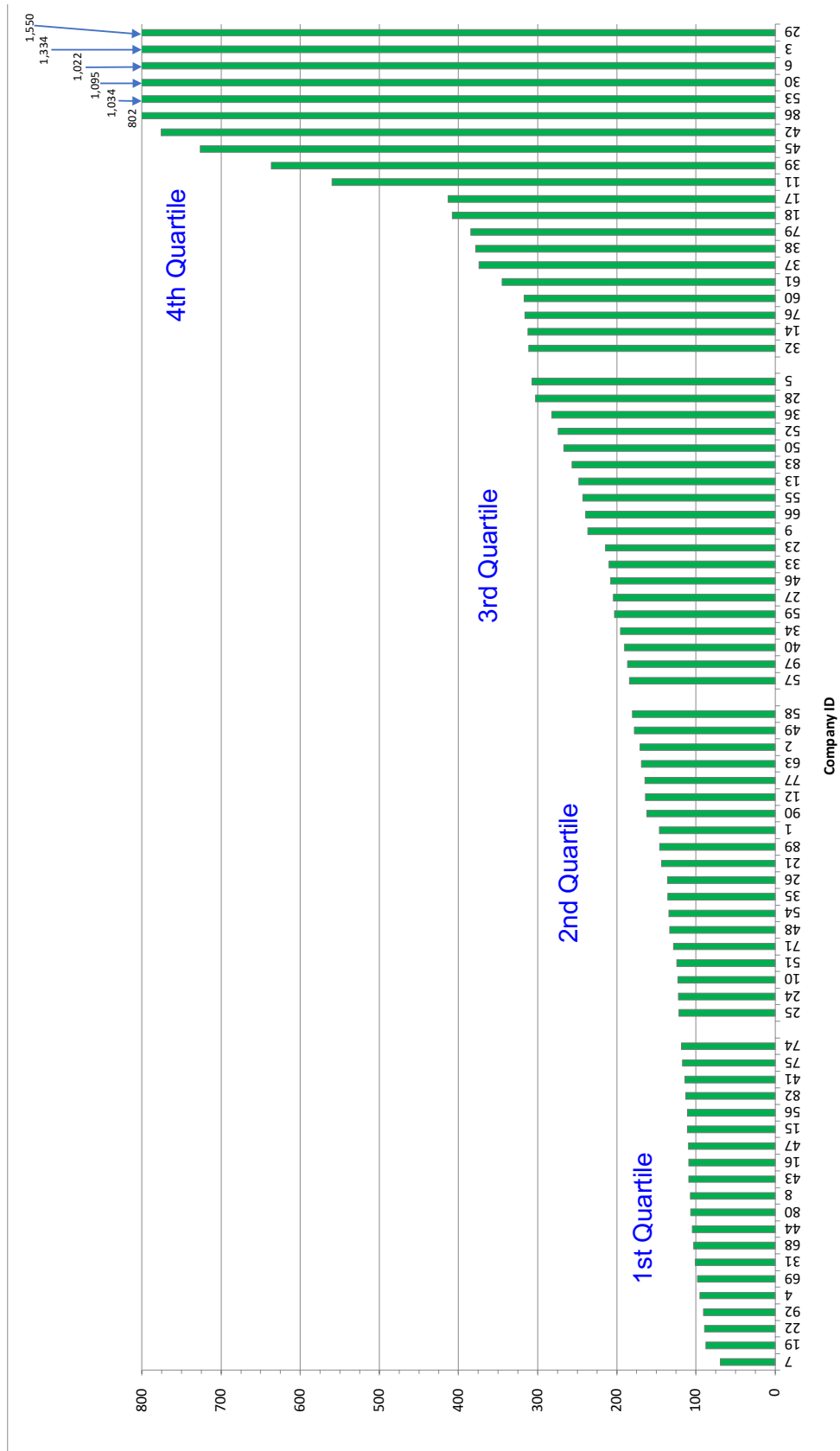




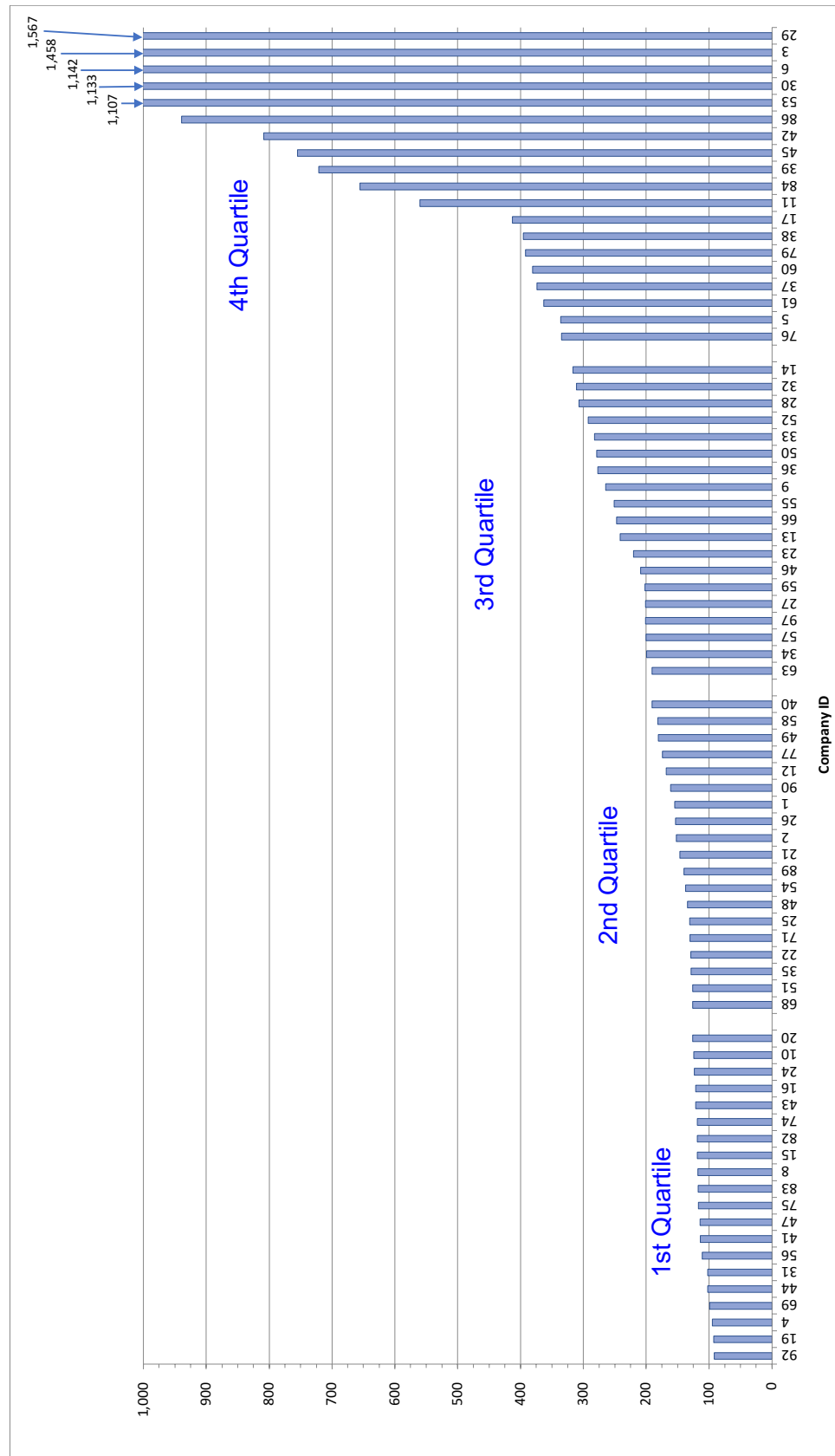
### 2020 Transmission System – SAIFI (Excluding Major Events)



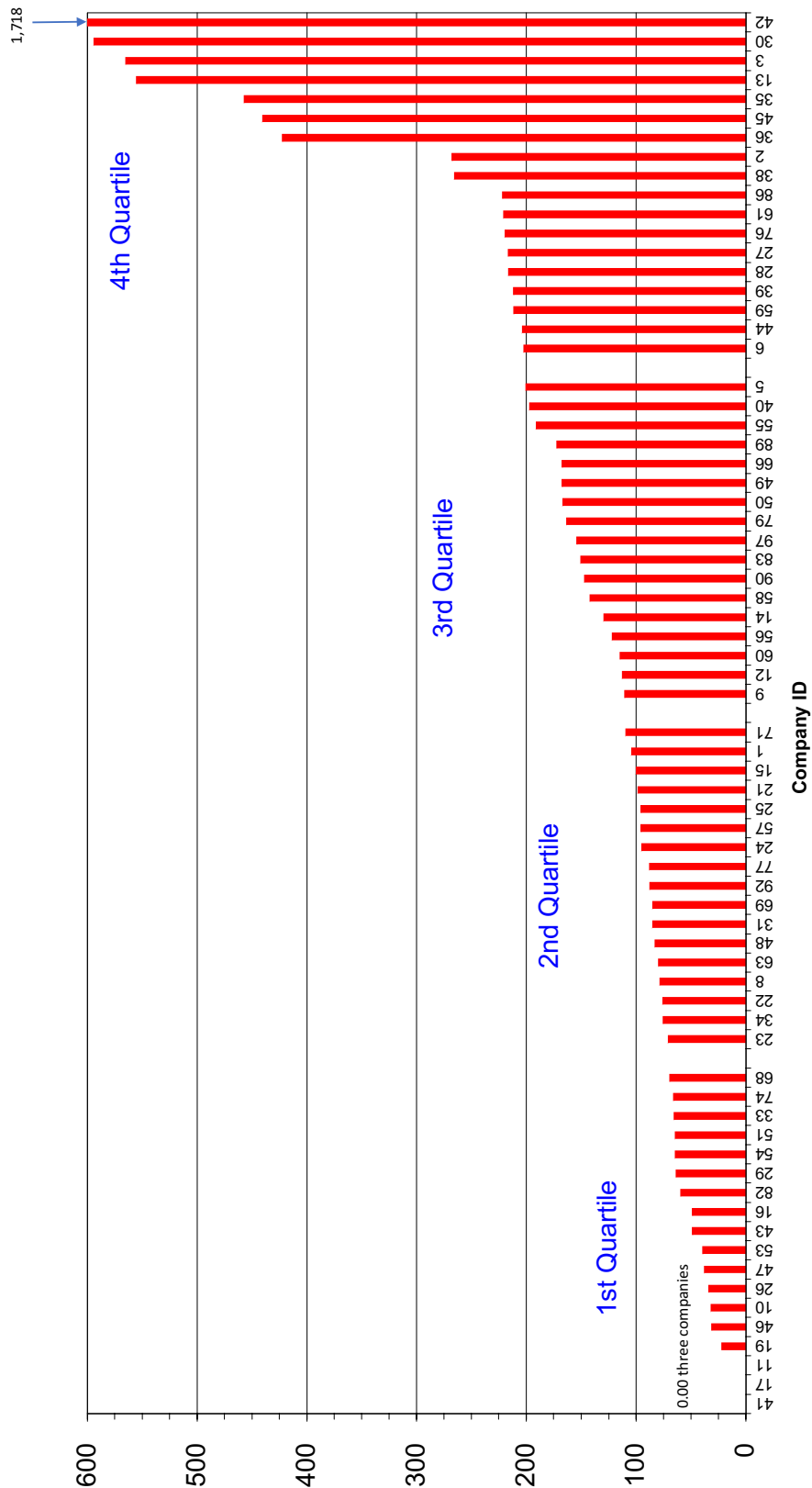
### 2020 Overall System – CAIDI (For All Interruptions)



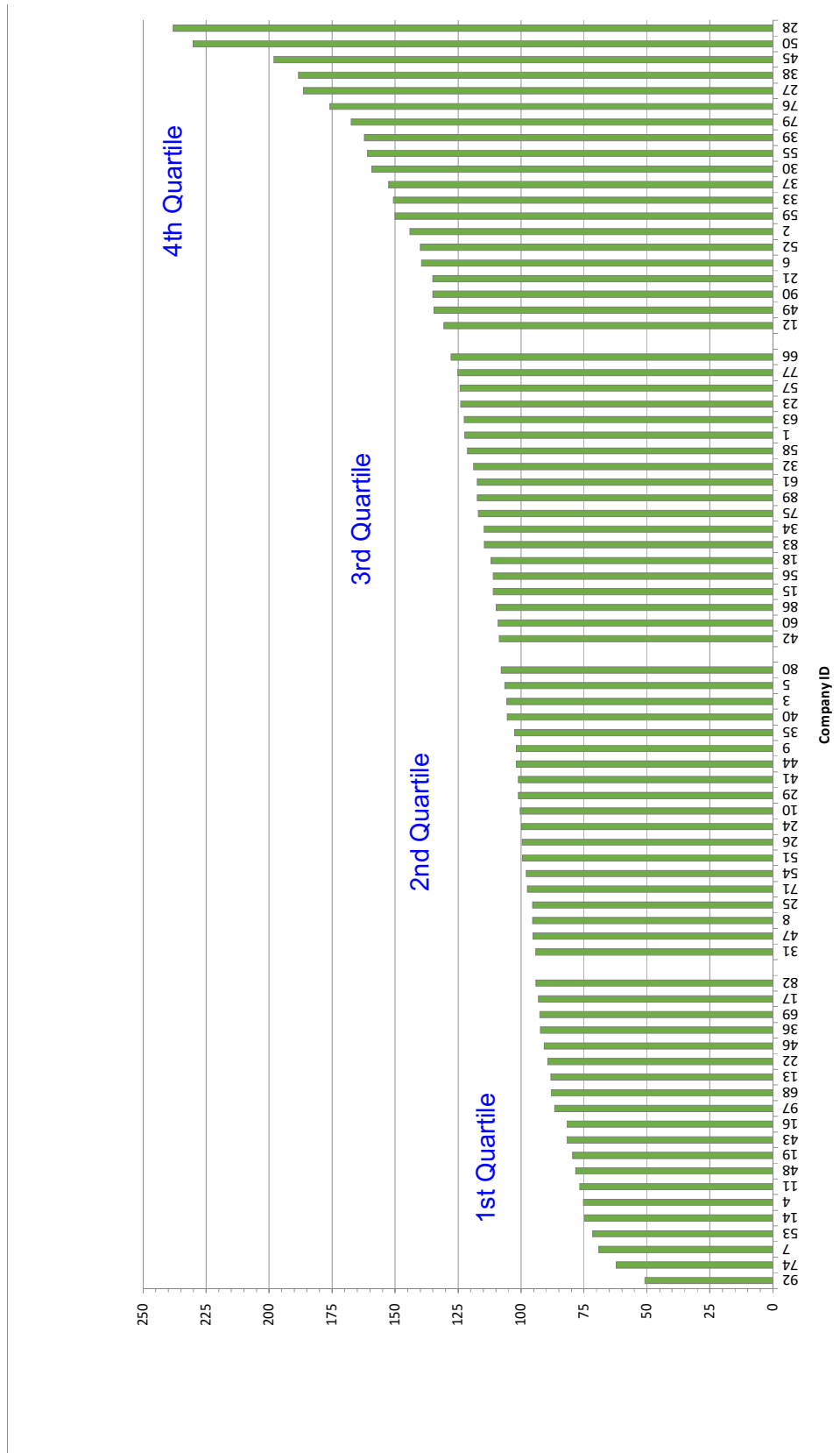
### 2020 Distribution System – CAIDI (For All Interruptions)



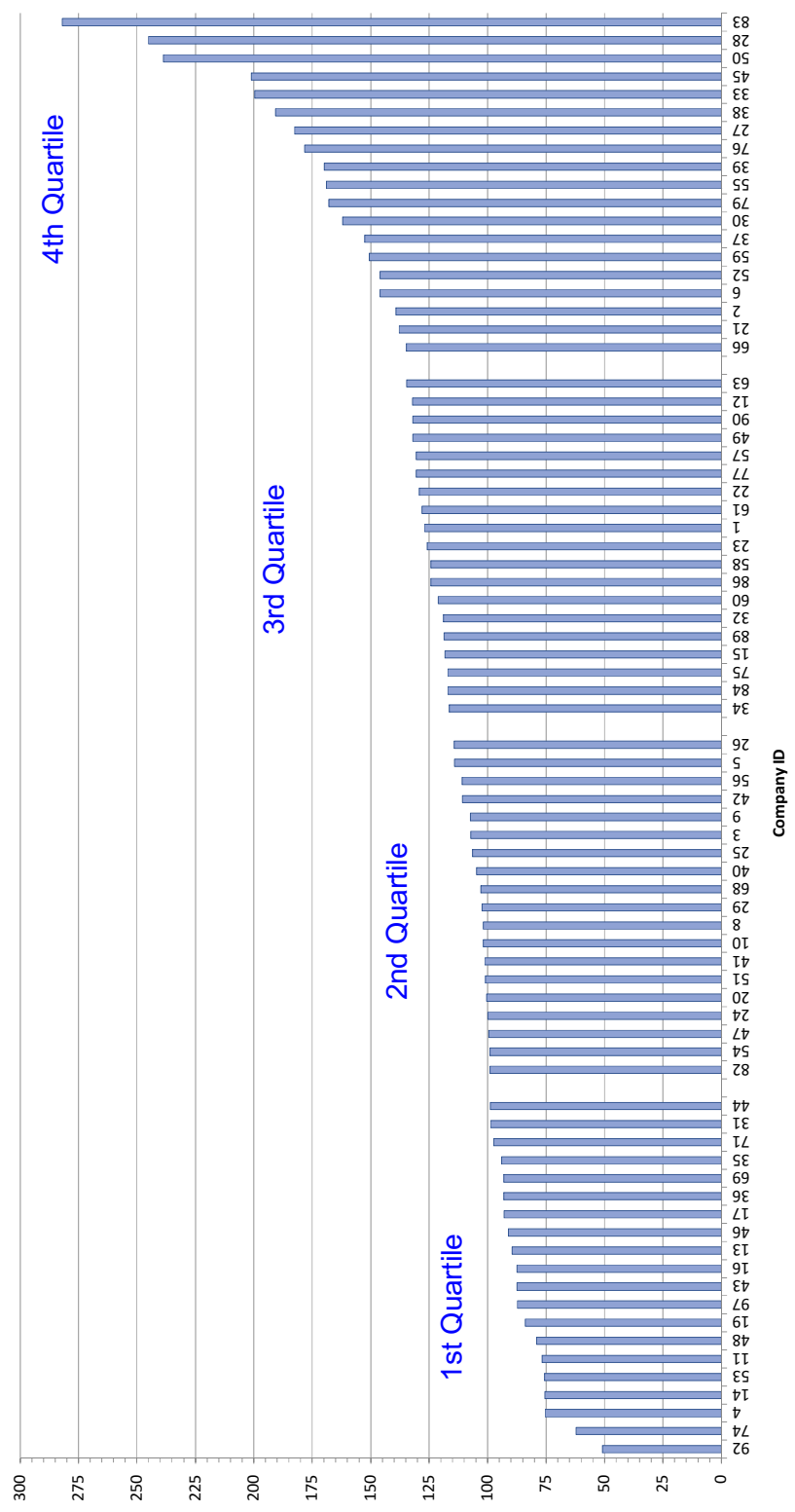
### 2020 Transmission System – CAIDI (For All Interruptions)



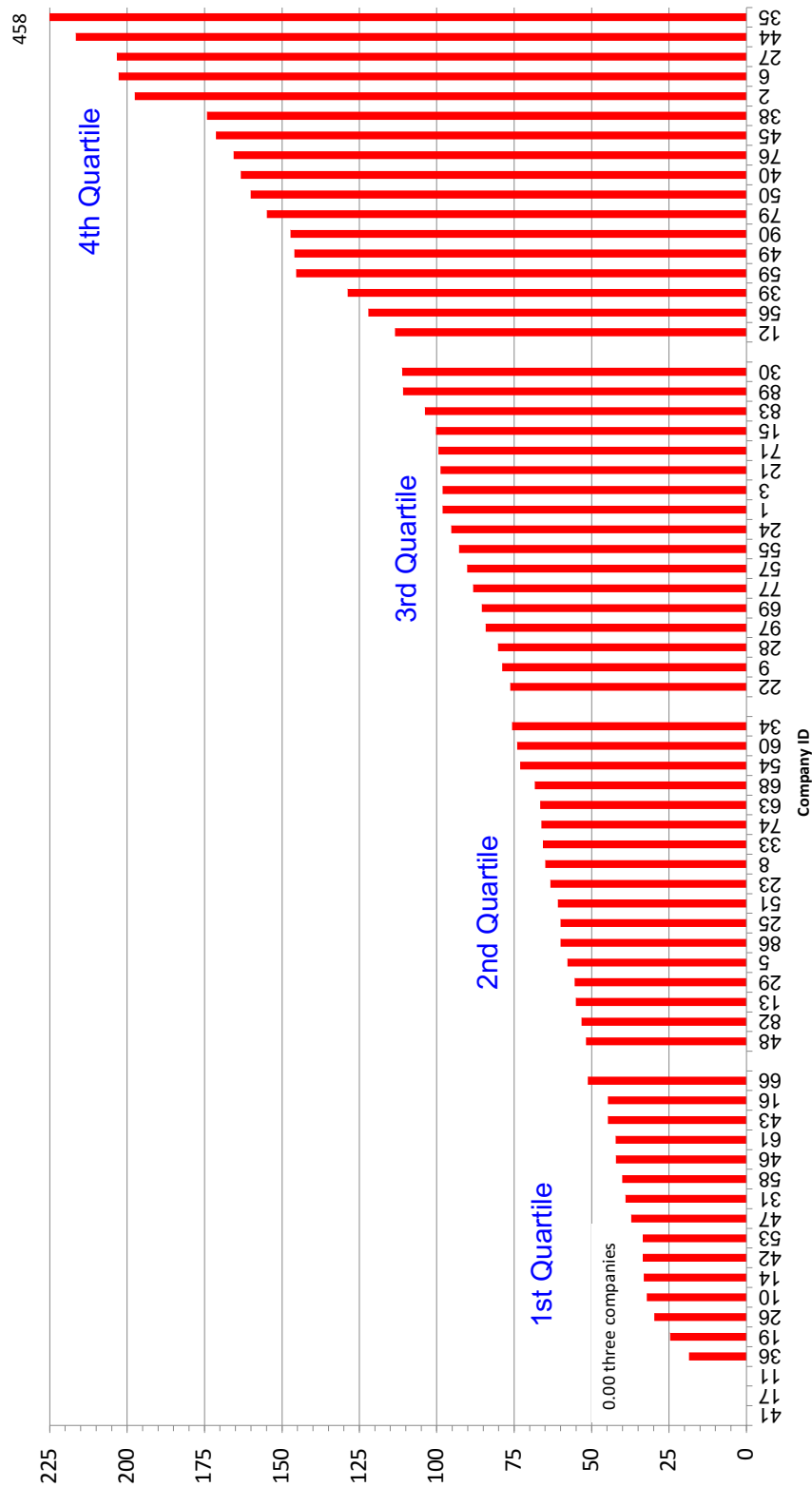
### 2020 Overall System – CAIDI (Excluding Major Events)



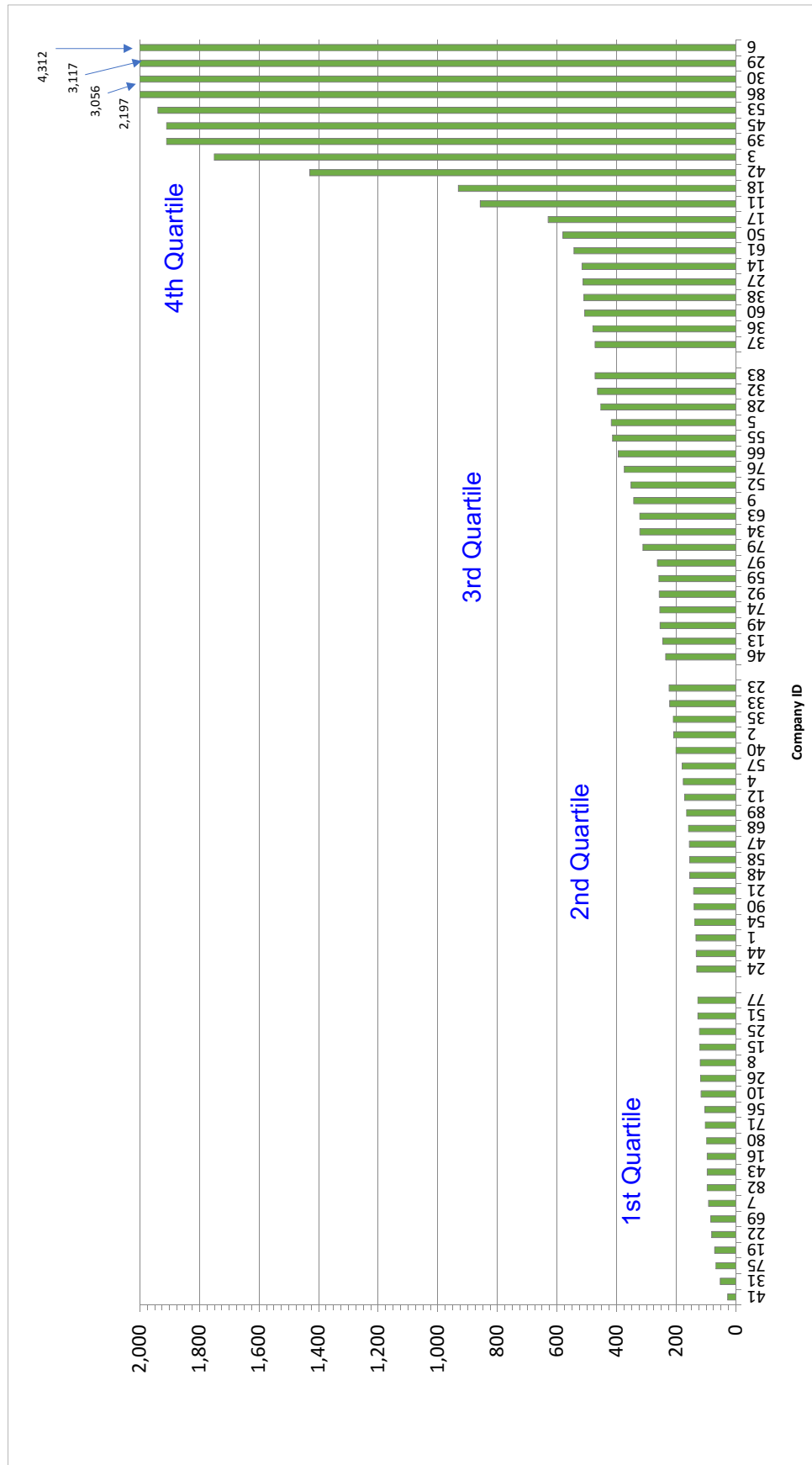
### 2020 Distribution System – CAIDI (Excluding Major Events)



## 2020 Transmission System – CAIDI (Excluding Major Events)

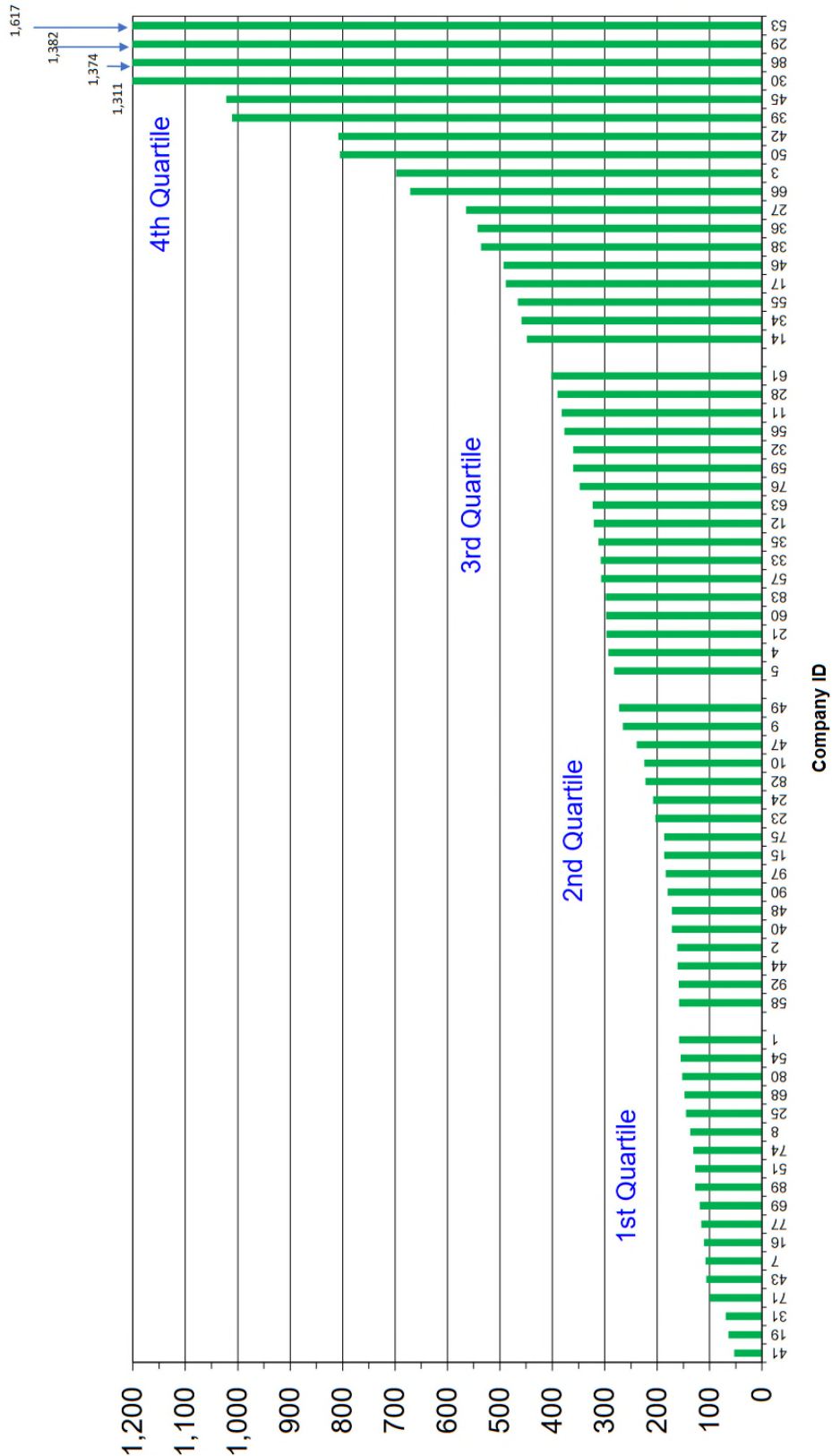


### 2020 Overall System – SAIDI (For All Interruptions)

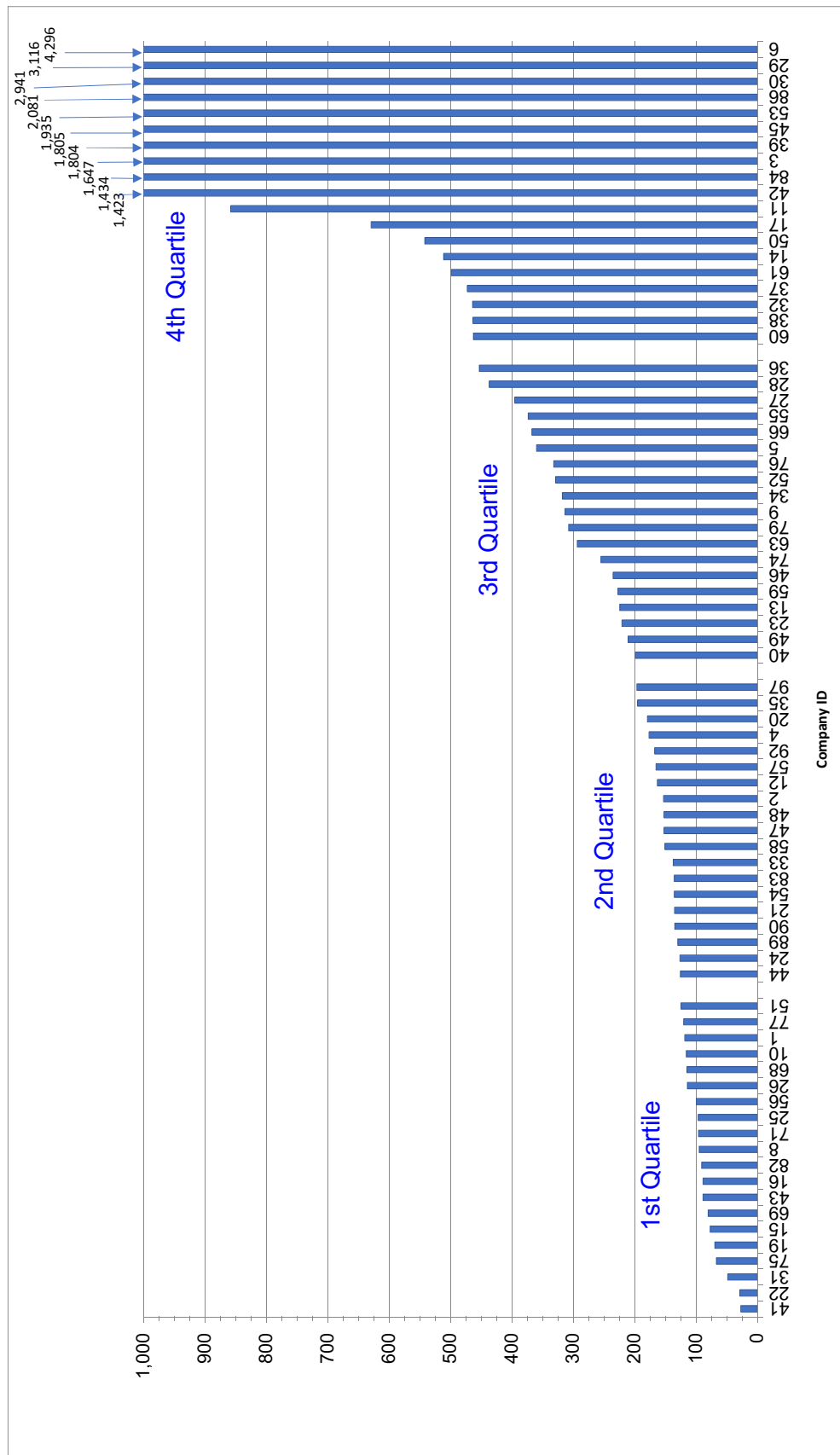




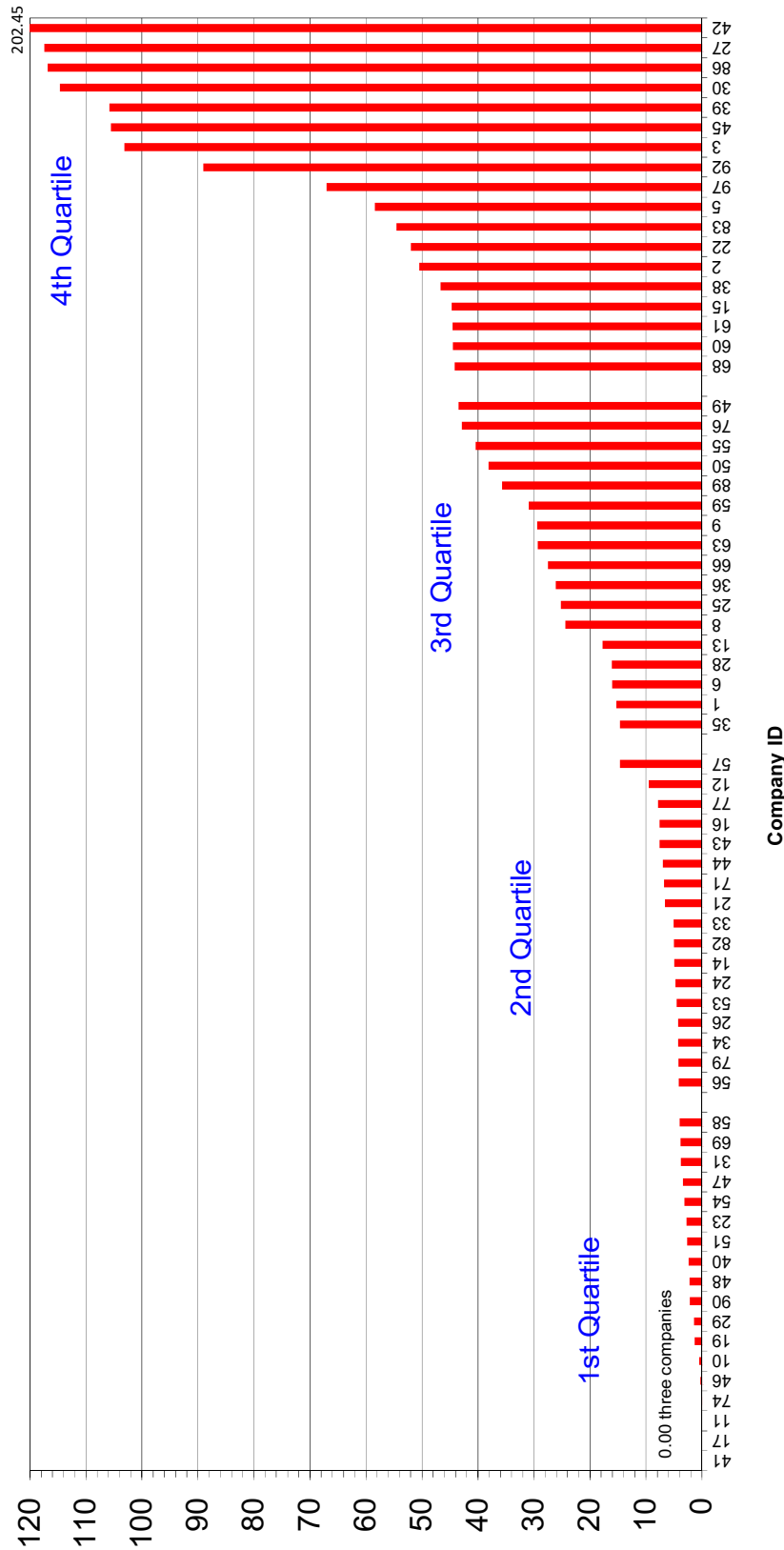
### 2018-2020 Overall System – Three Year Average SAIDI (For All Interruptions)



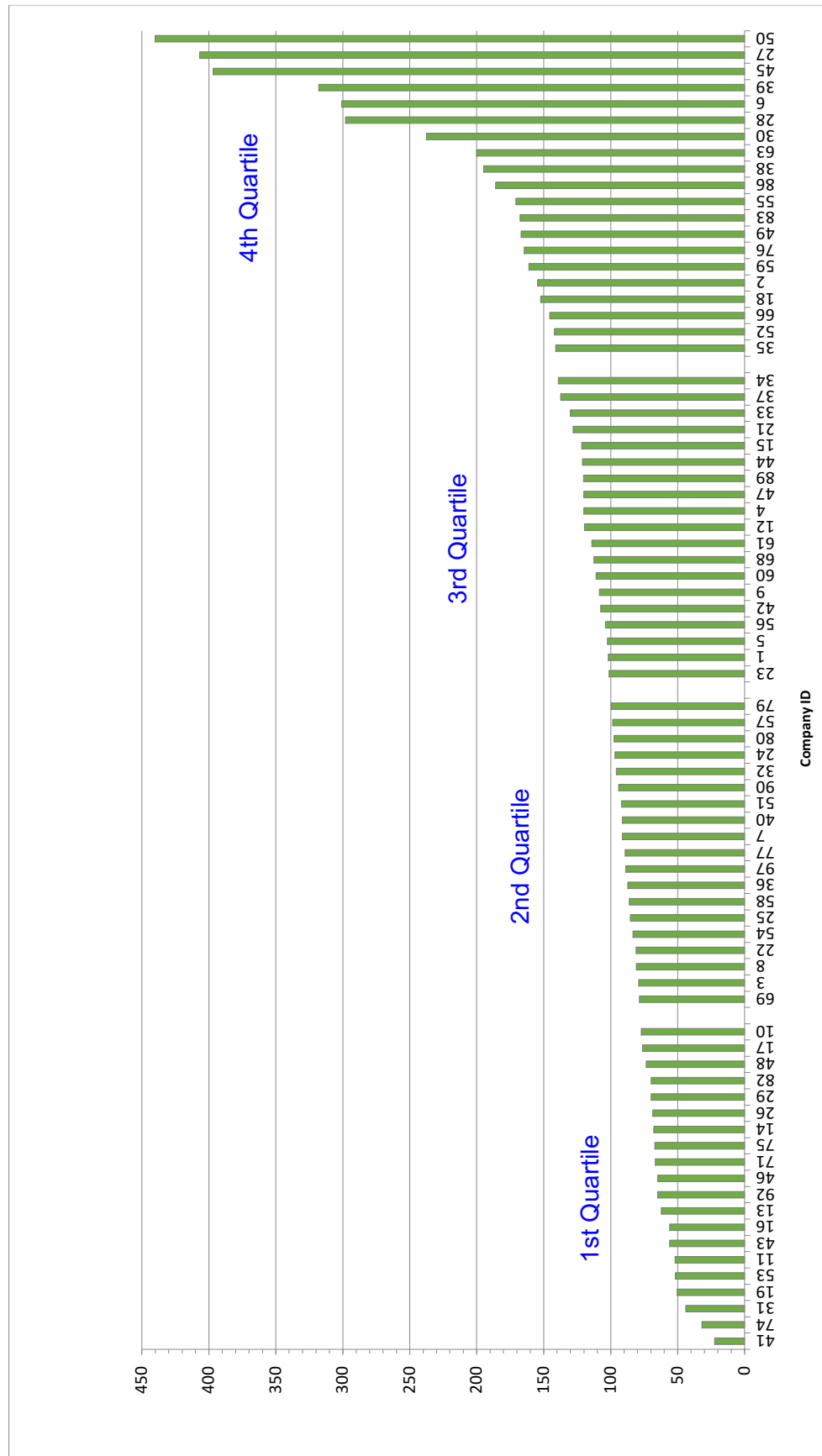
### 2020 Distribution System – SAIDI (For All Interruptions)



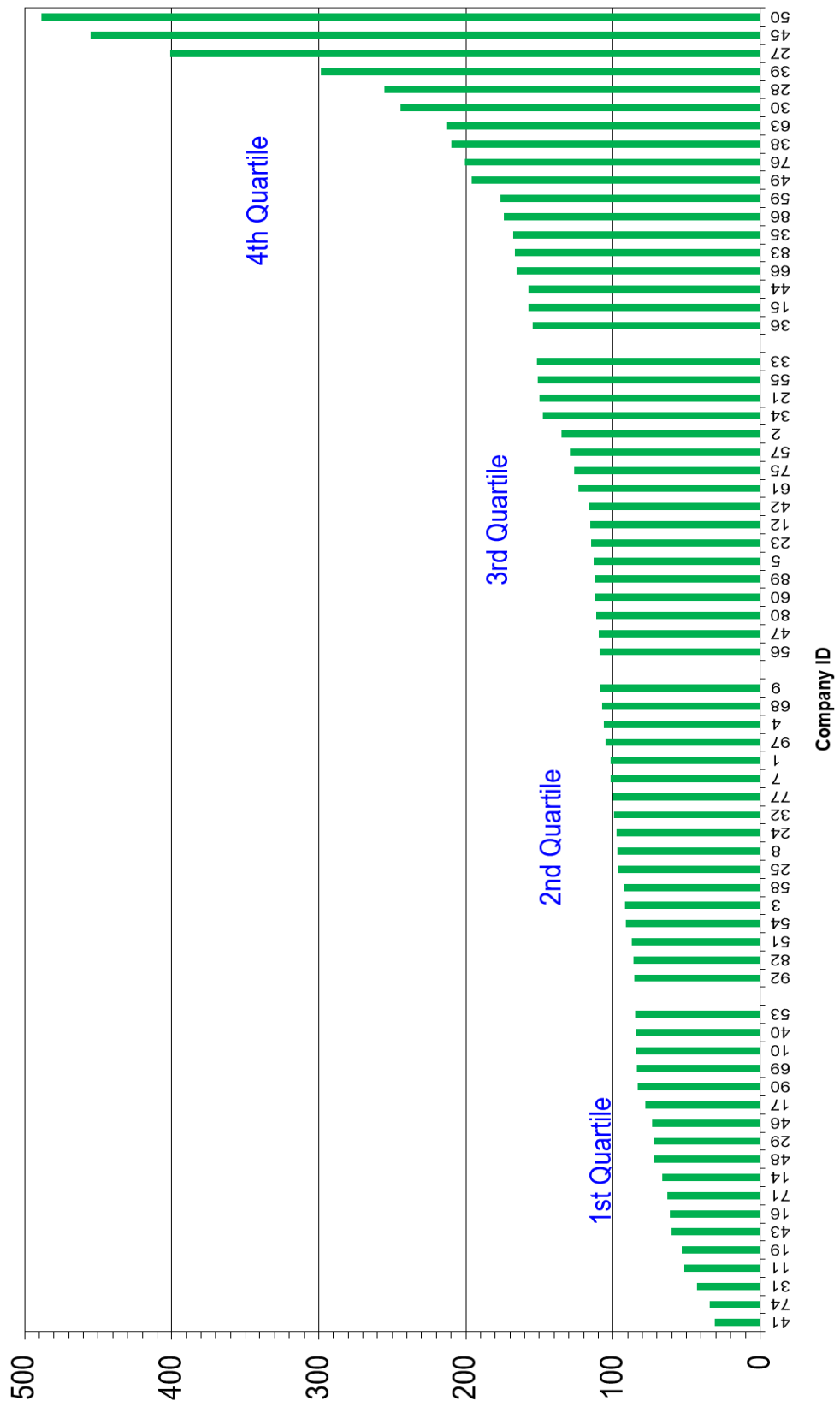
### 2020 Transmission System – SAIDI (For All Interruptions)



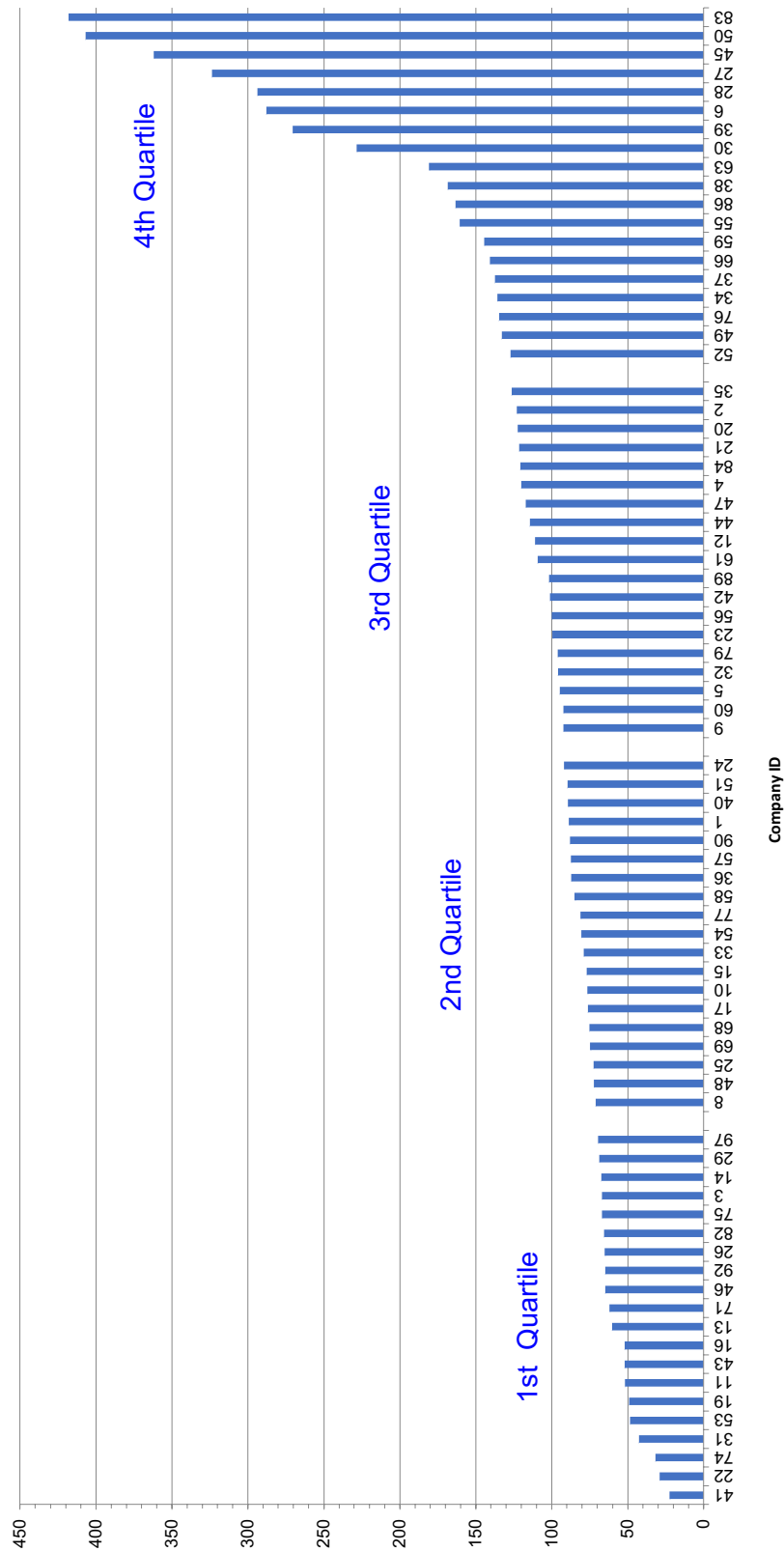
### 2020 Overall System – SAIDI (Excluding Major Events)



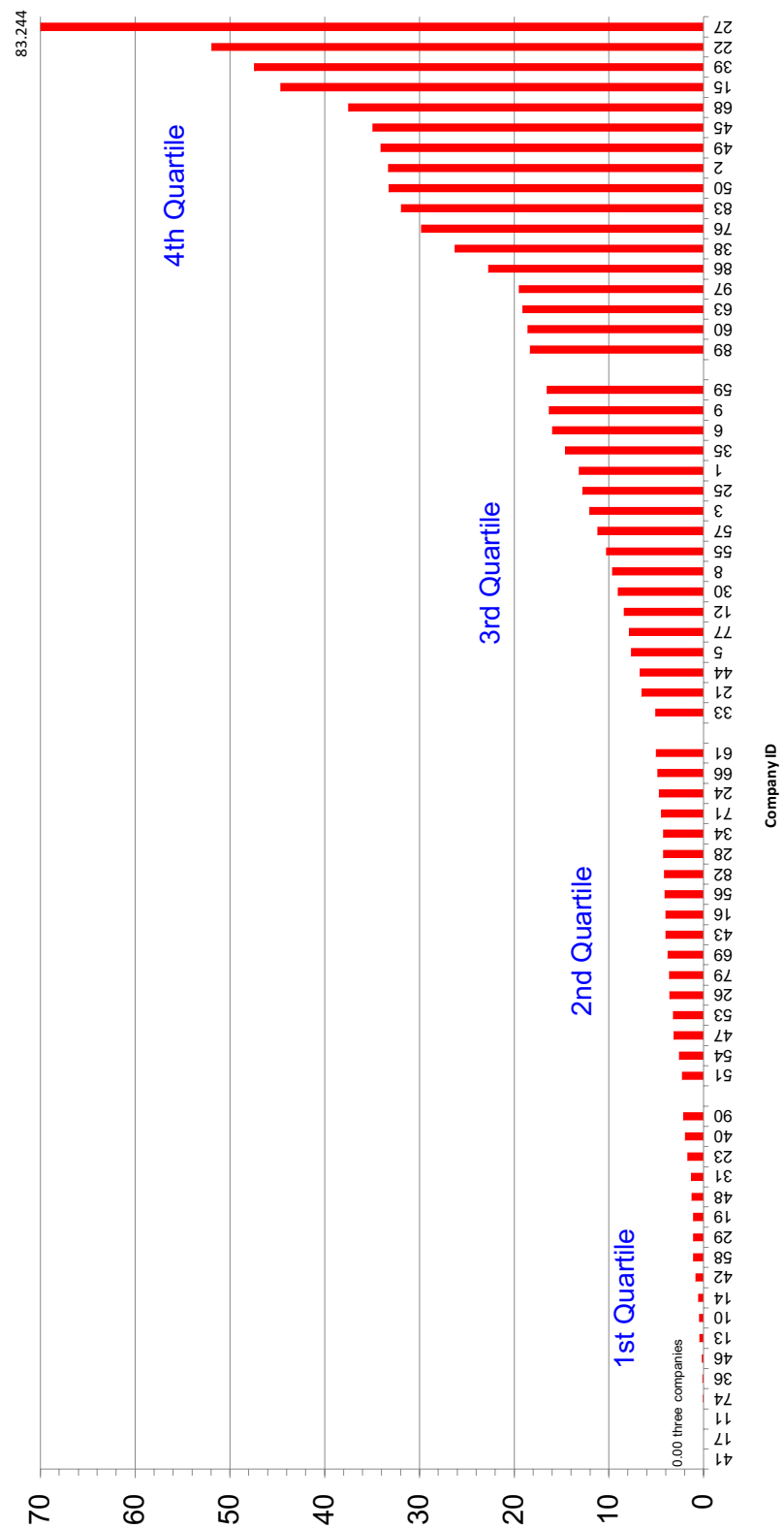
### 2018-2020 Overall System – Three Year Average SAIDI (Excluding Major Events)



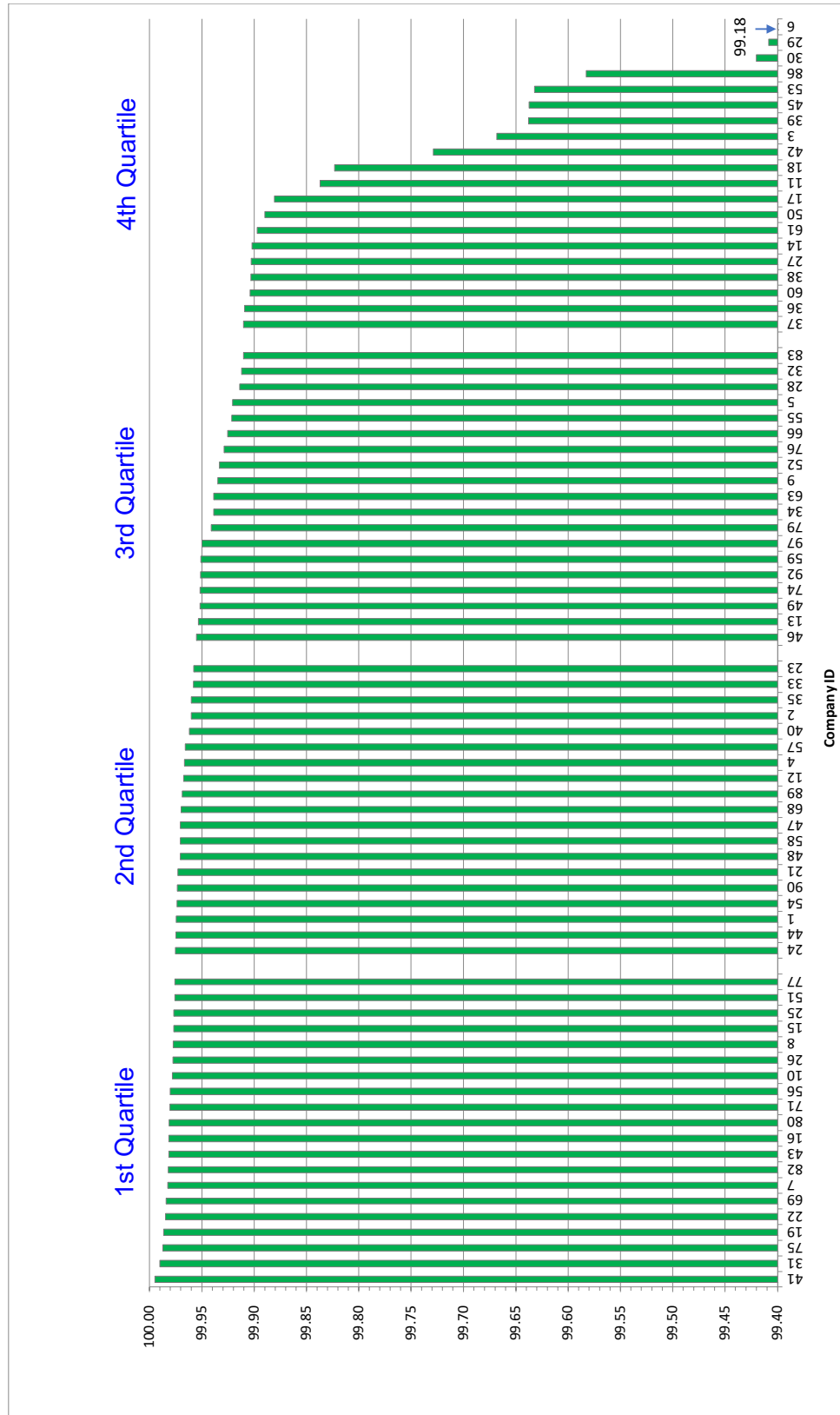
### 2020 Distribution System – SAIDI (Excluding Major Events)



### 2020 Transmission System – SAIDI (Excluding Major Events)

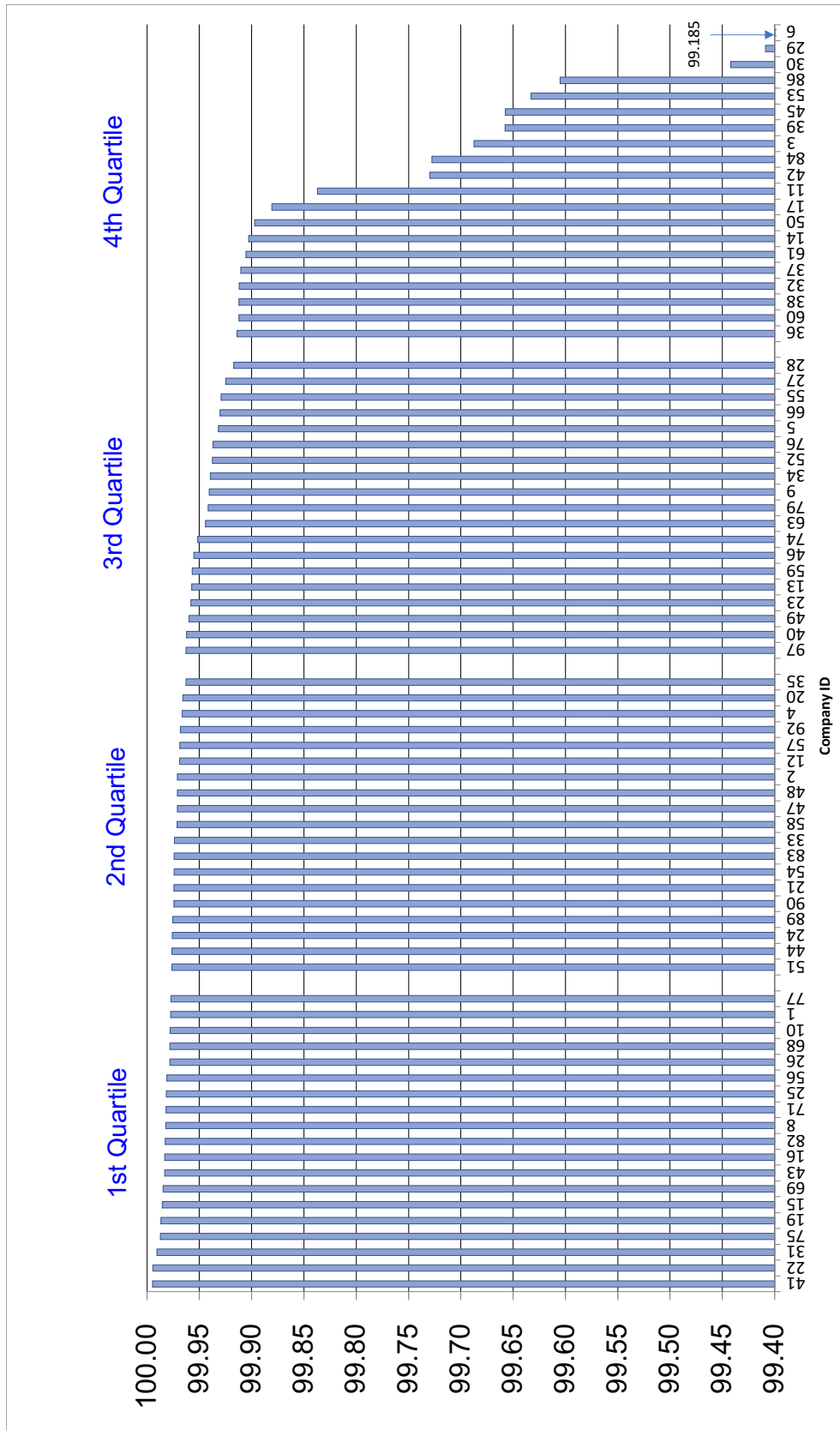


### 2020 Overall System – ASAI (For All Interruptions)

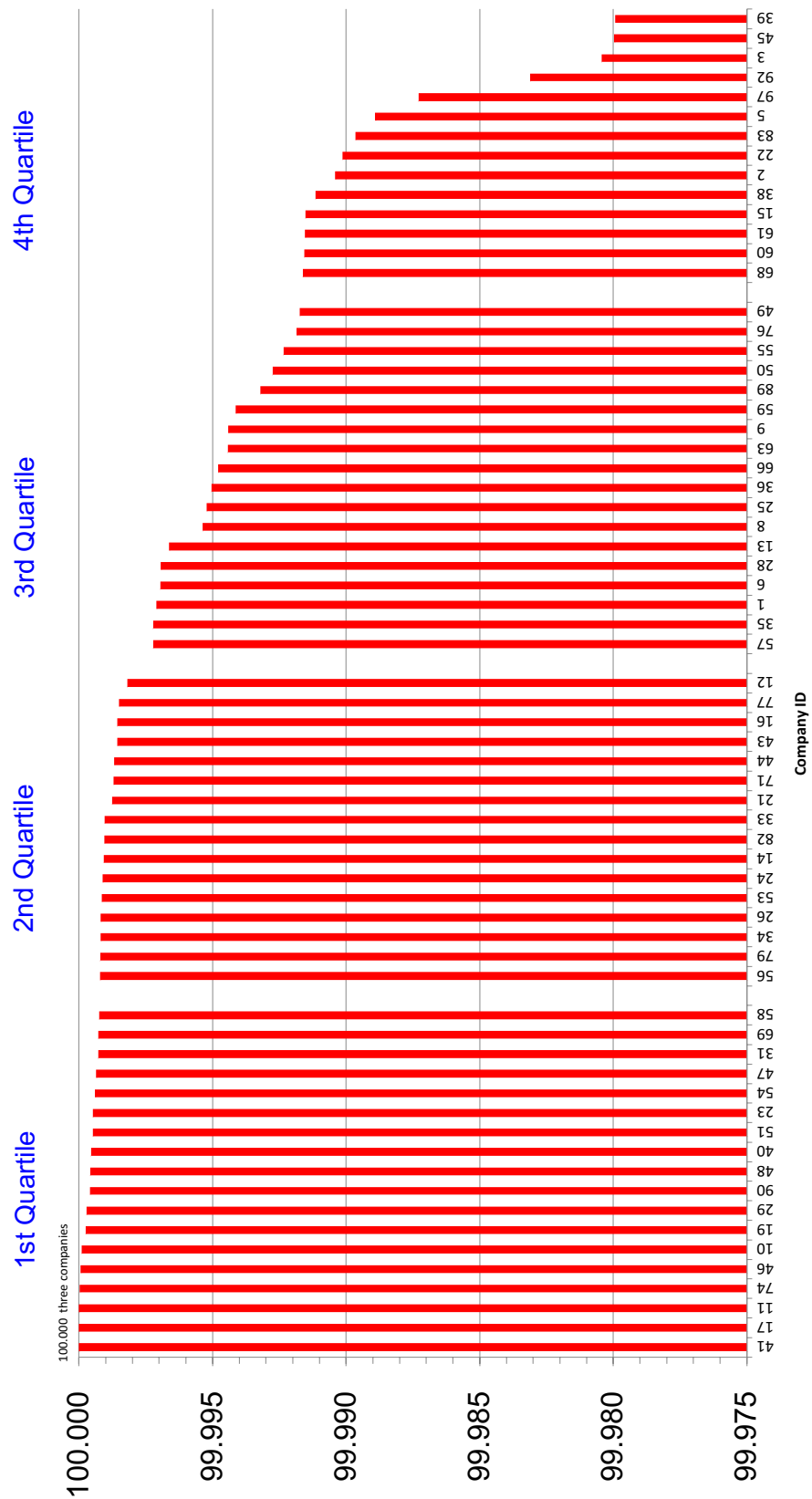




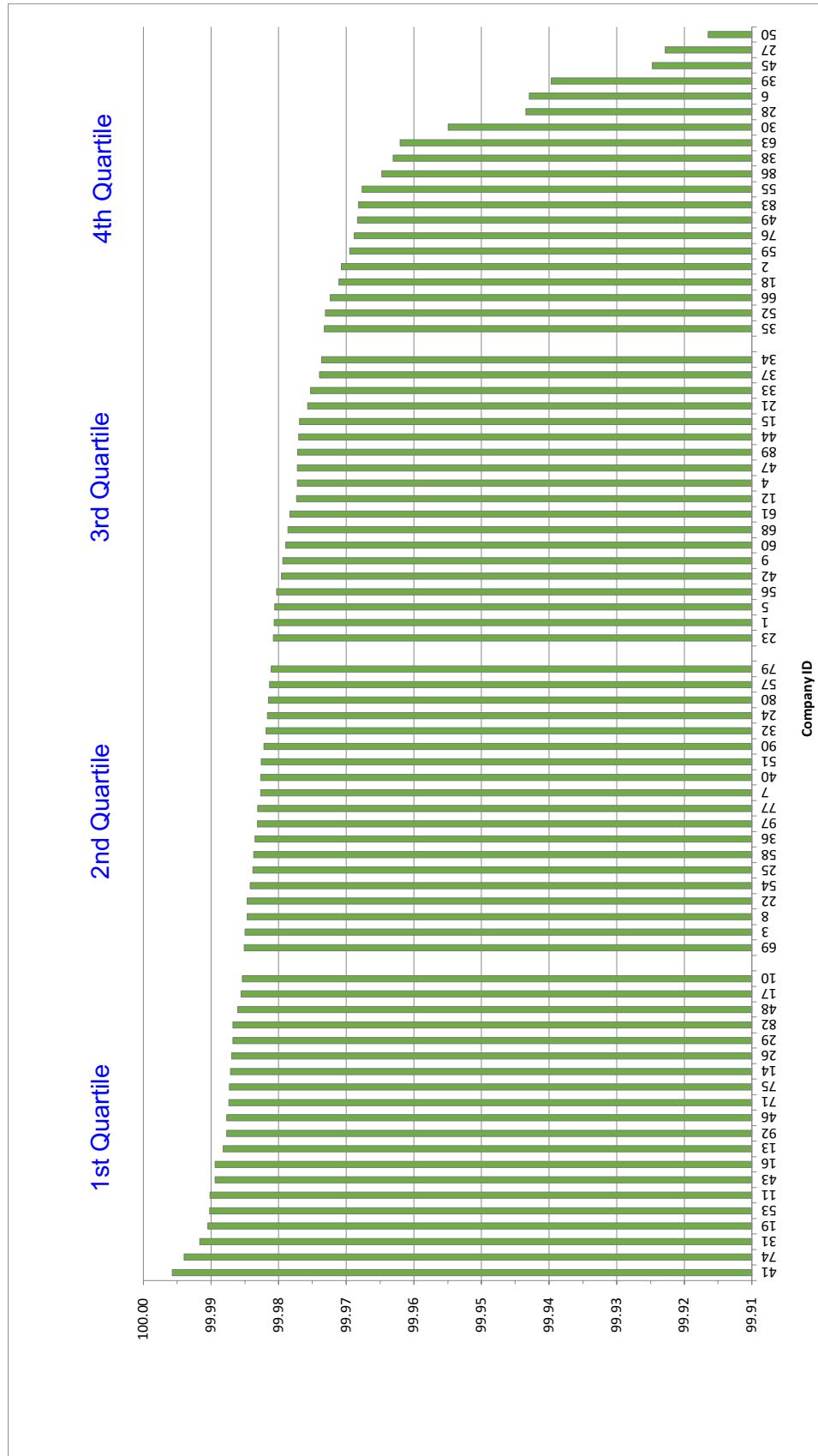
### 2020 Distribution System – ASAI (For All Interruptions)



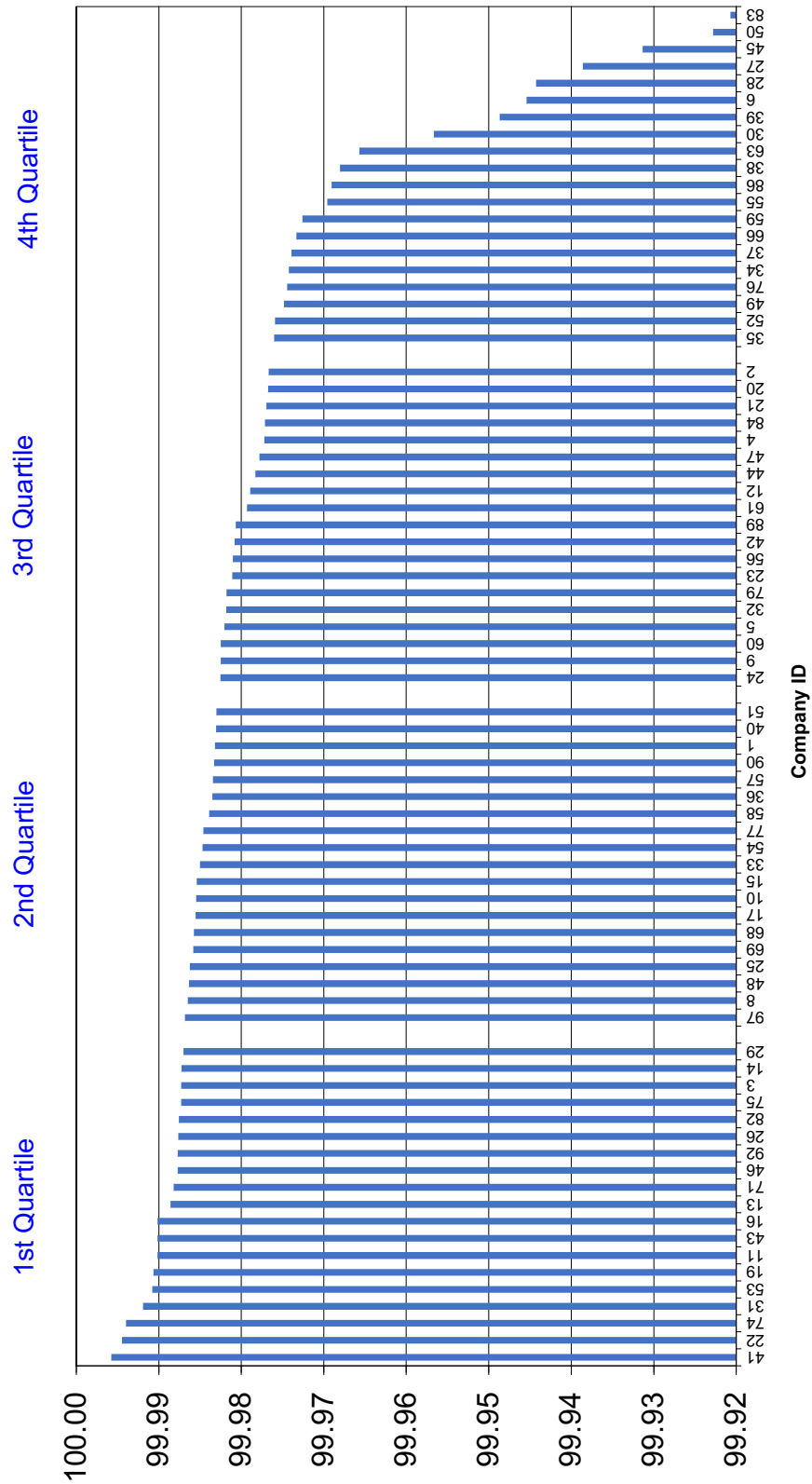
### 2020 Transmission System – ASAI (For All Interruptions)



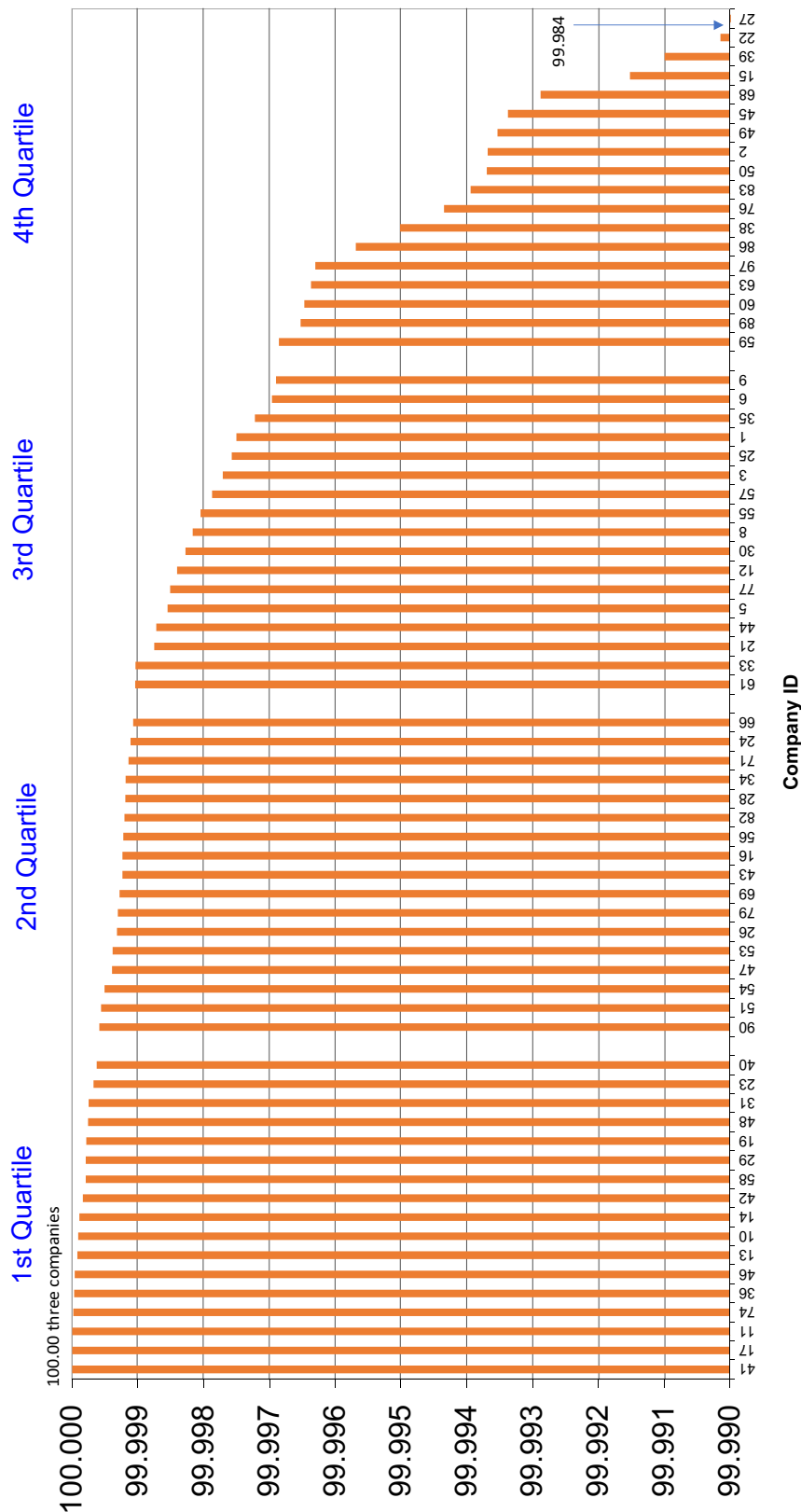
### 2020 Overall System – ASAI (Excluding Major Events)



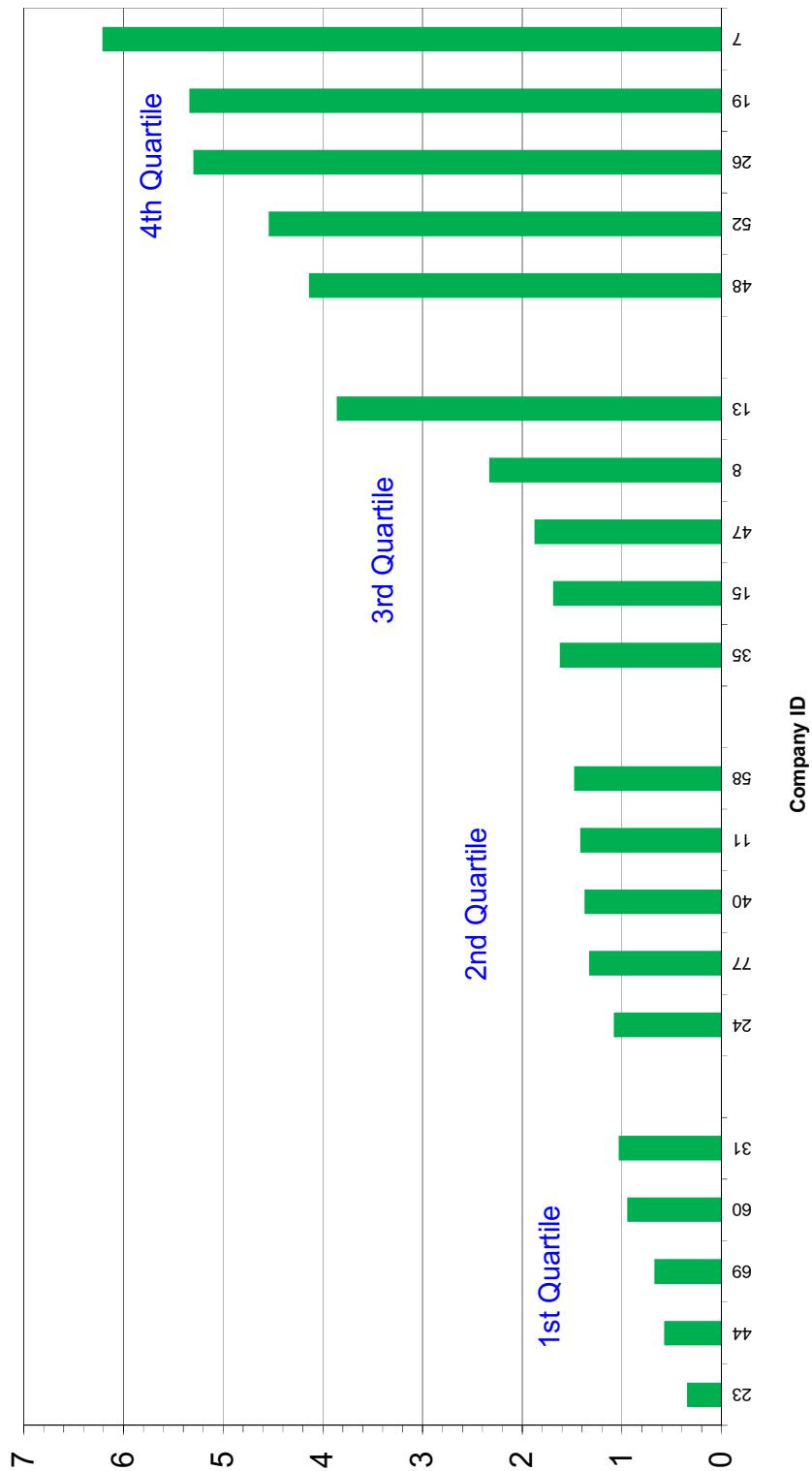
### 2020 Distribution System – ASAI (Excluding Major Events)



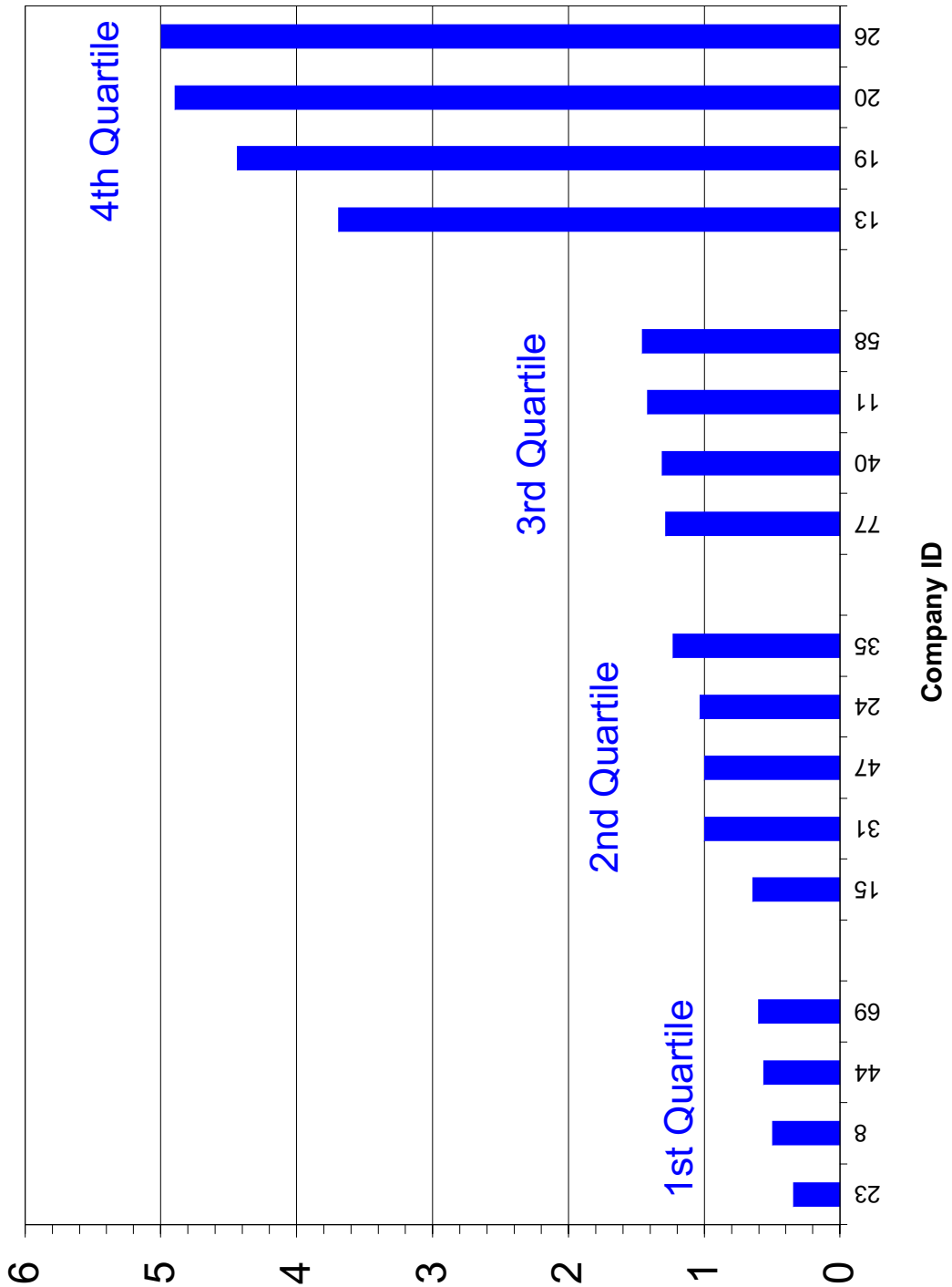
### 2020 Transmission System – ASAI (Excluding Major Events)



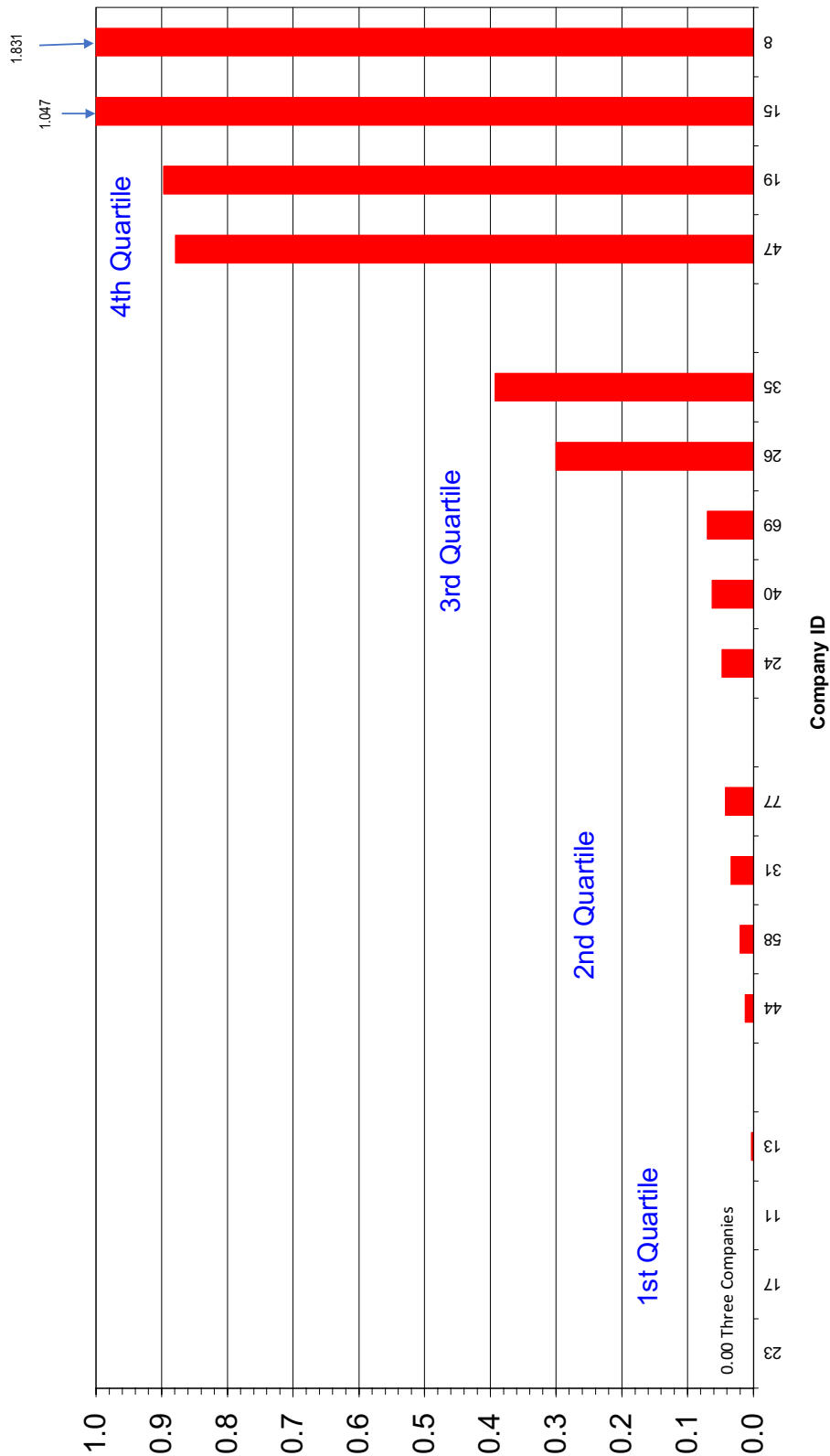
### 2020 Overall System – MAIFI (For All Interruptions)



**2020 Distribution System – MAIFI (For All Interruptions)**

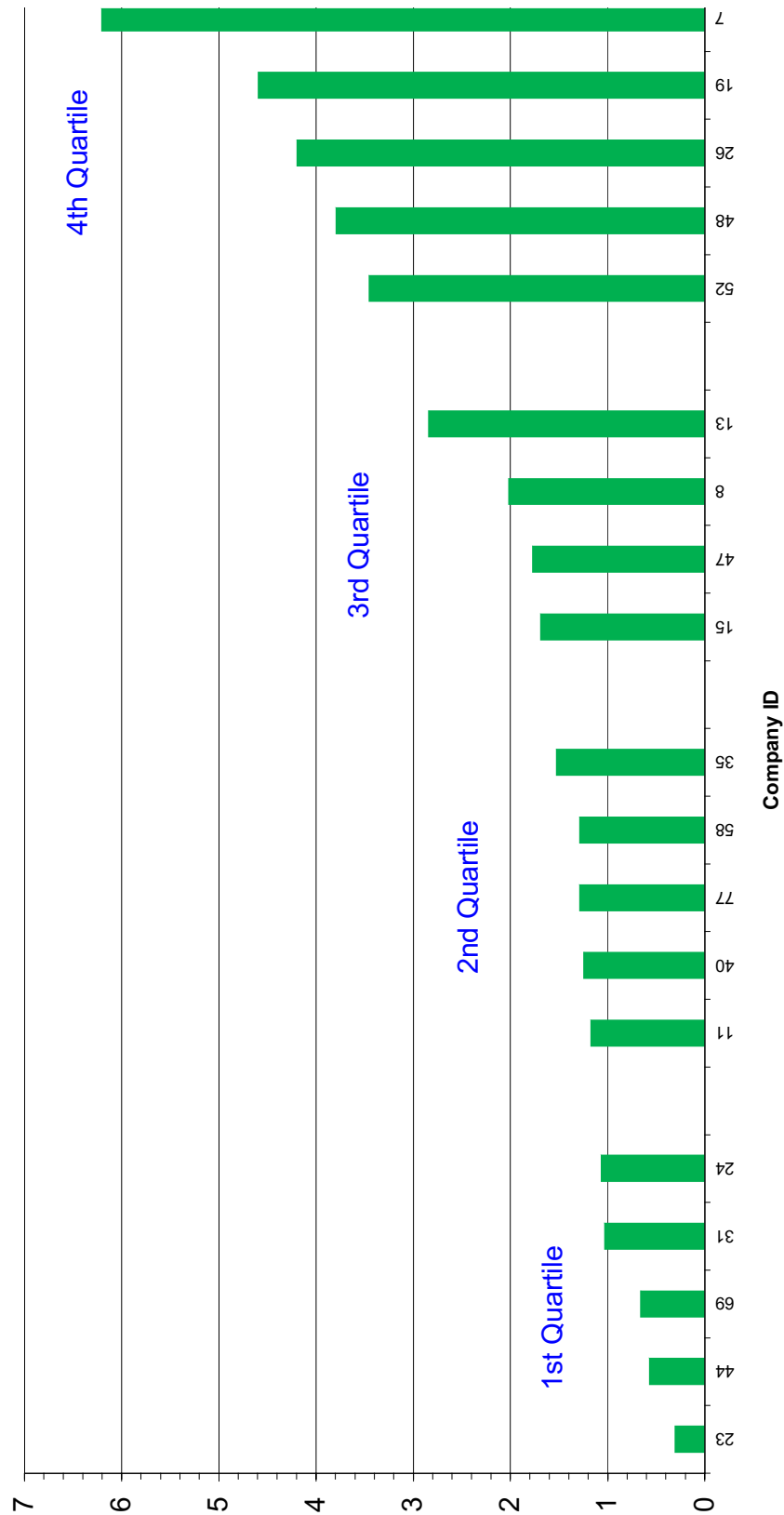


## 2020 Transmission System – MAIFI (For All Interruptions)

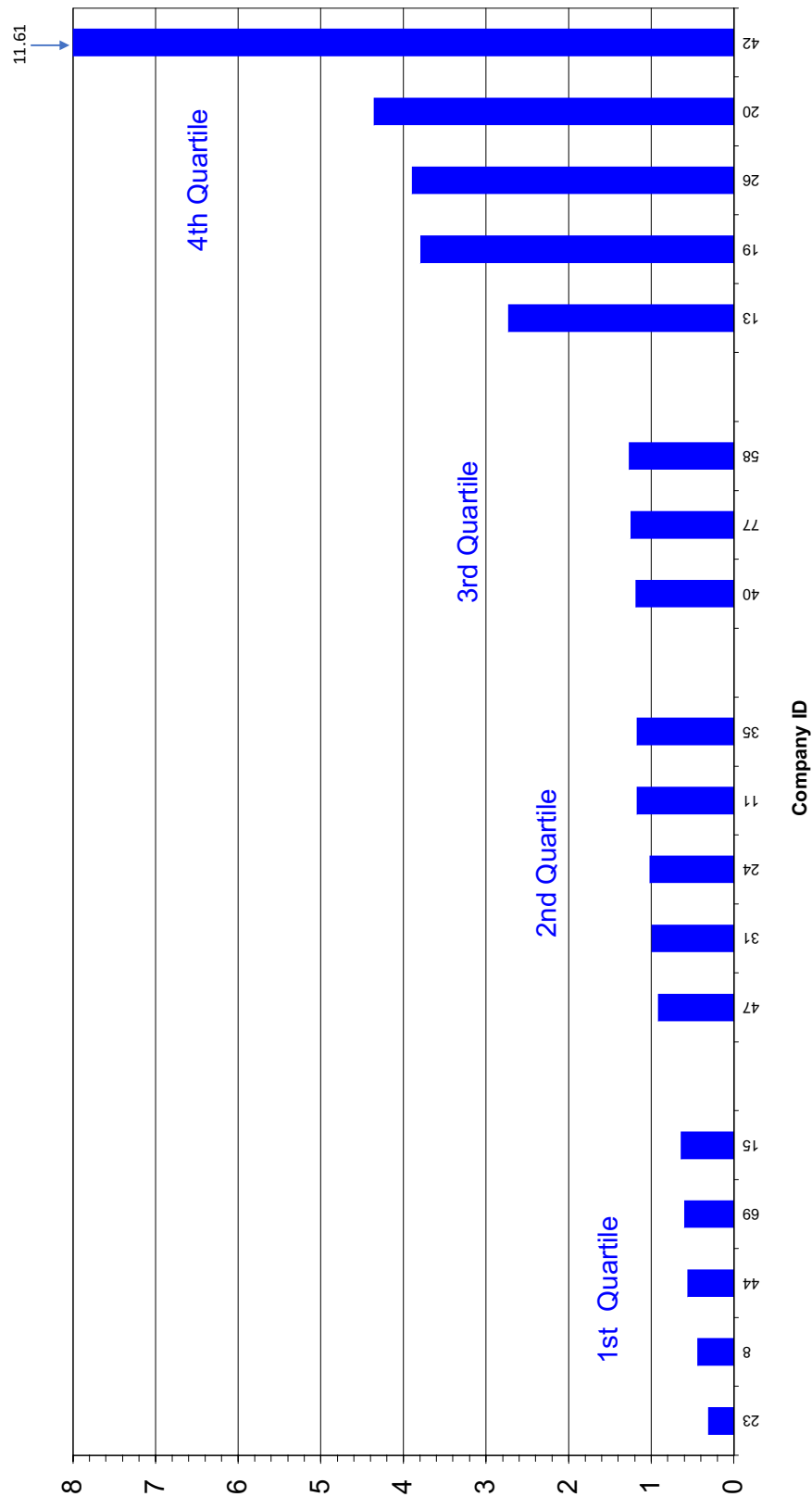




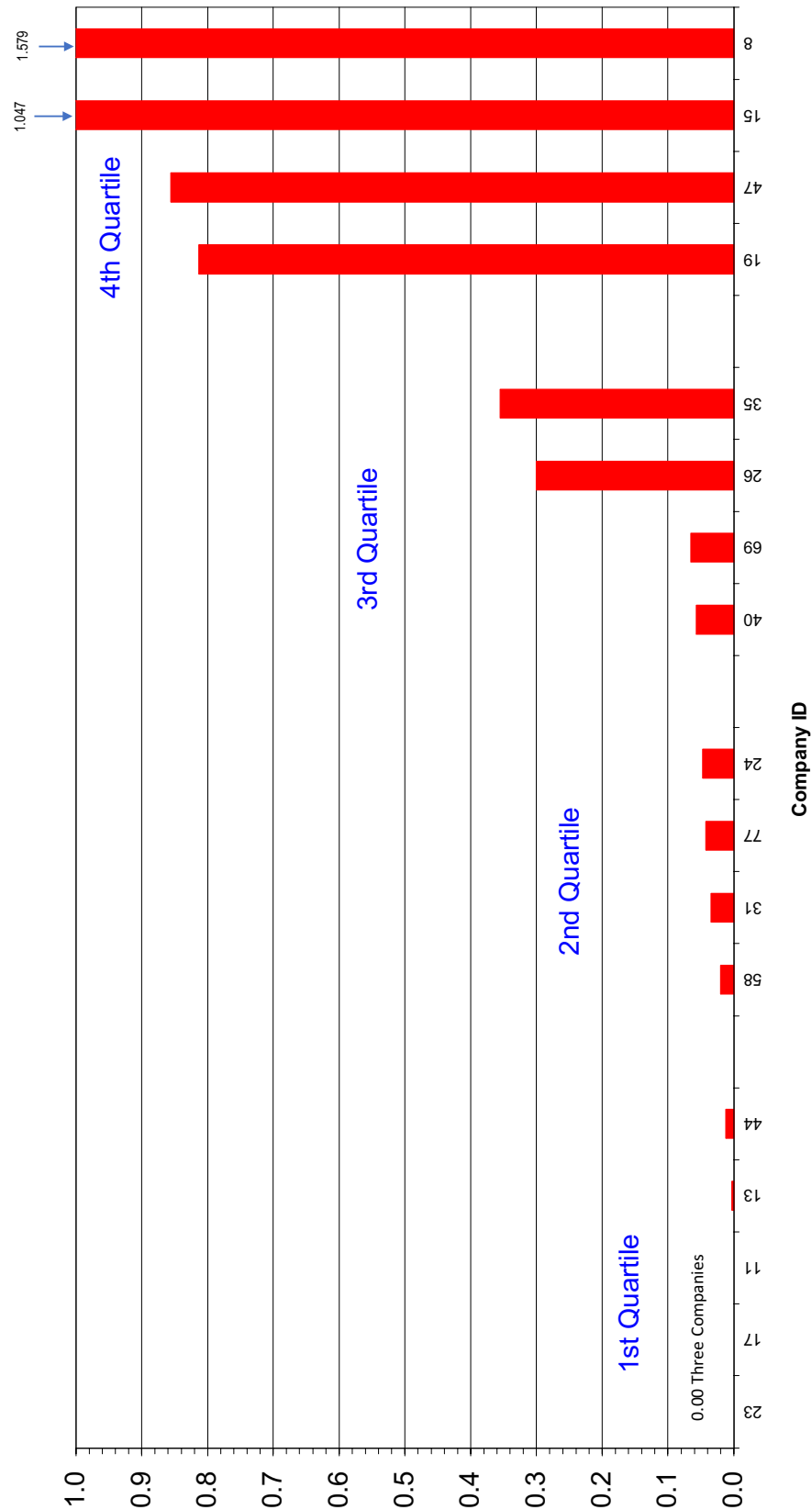
### 2020 Overall System – MAIFI (Excluding Major Events)



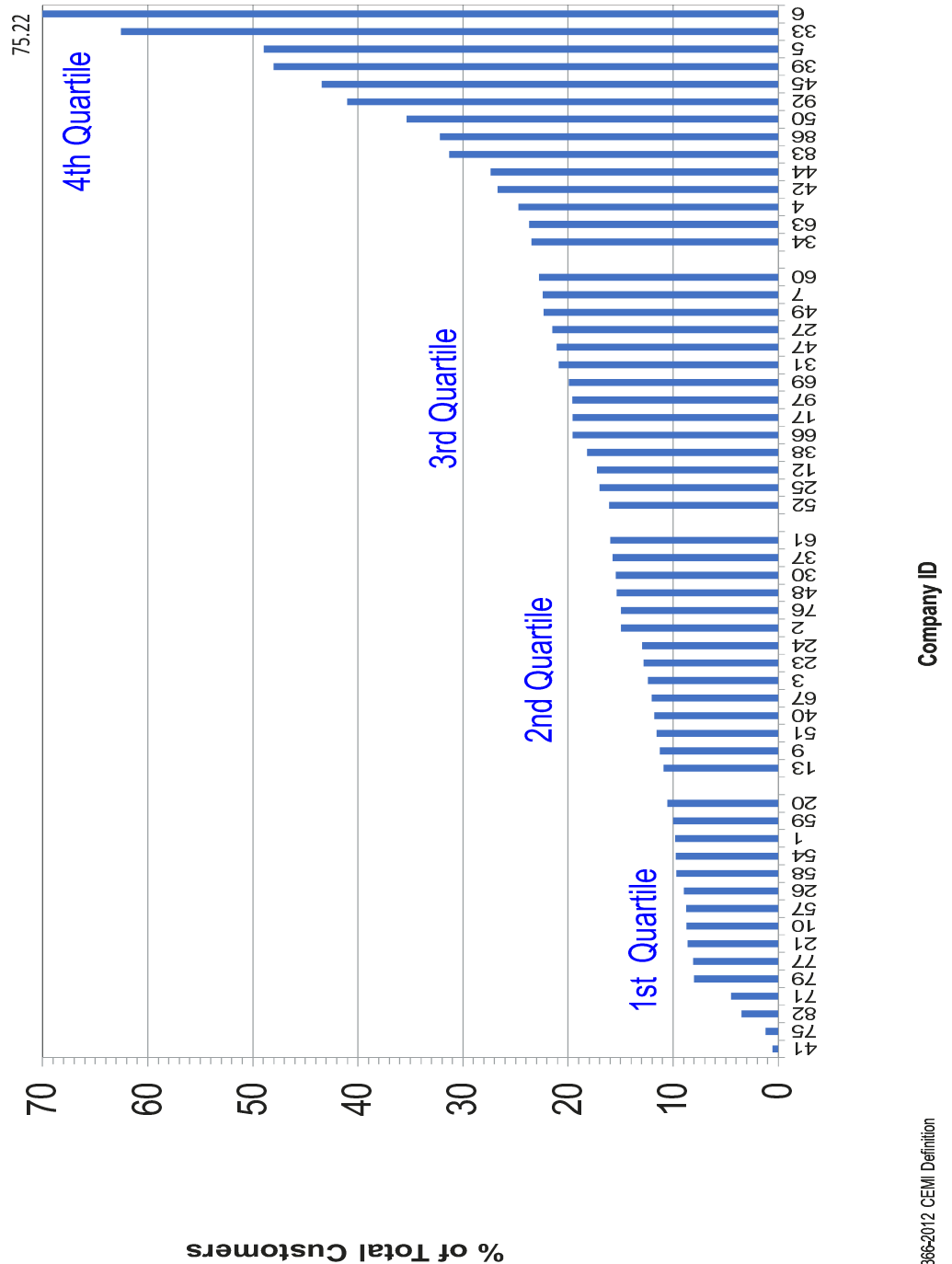
### 2020 Distribution System – MAIFI (Excluding Major Events)



### 2020 Transmission System – MAIFI (Excluding Major Events)

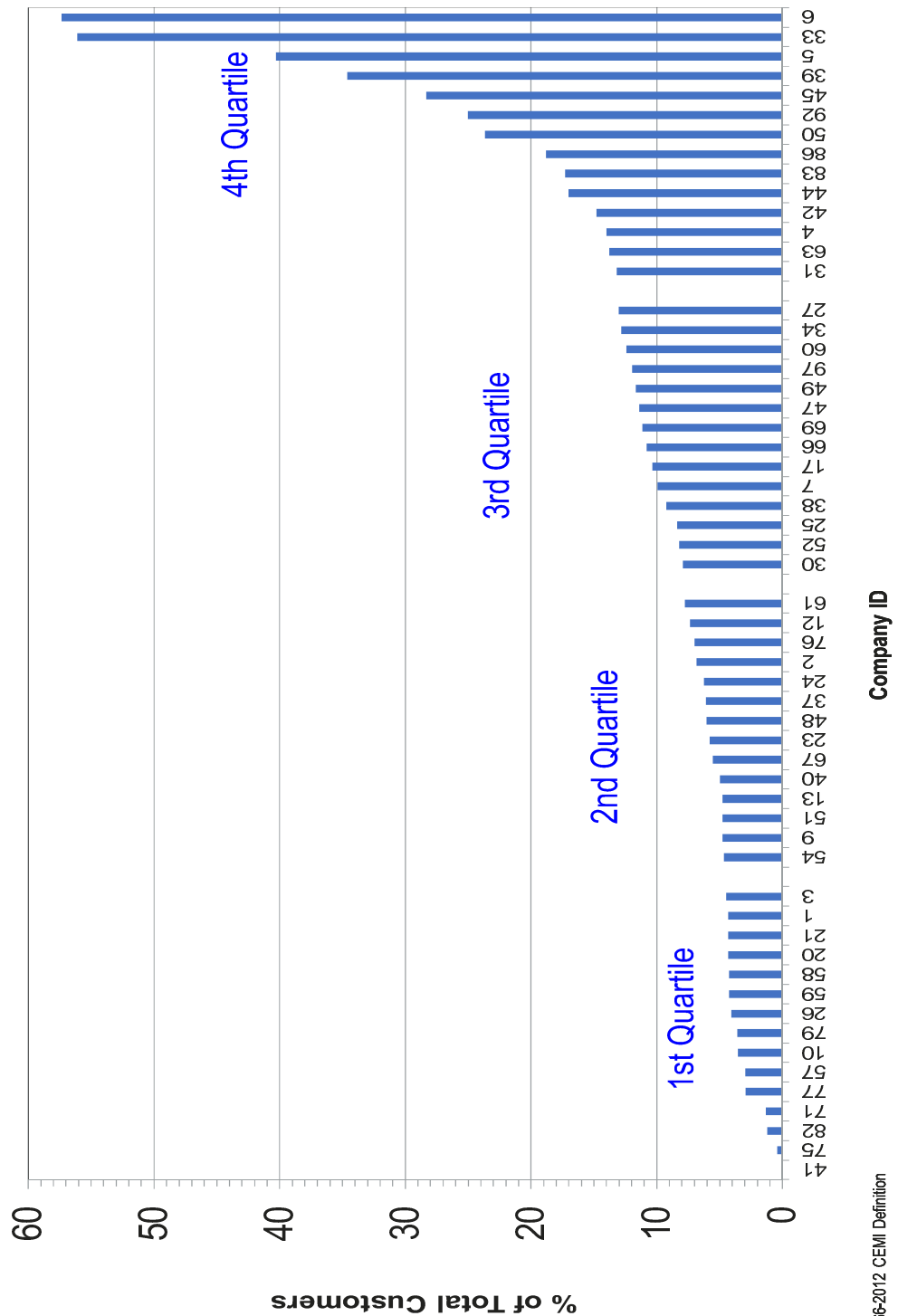


### 2020 - Customers Experiencing $\geq$ Three Interruptions (CEMI<sub>3</sub>)\* as % of Total Customers Served (For All Interruptions)



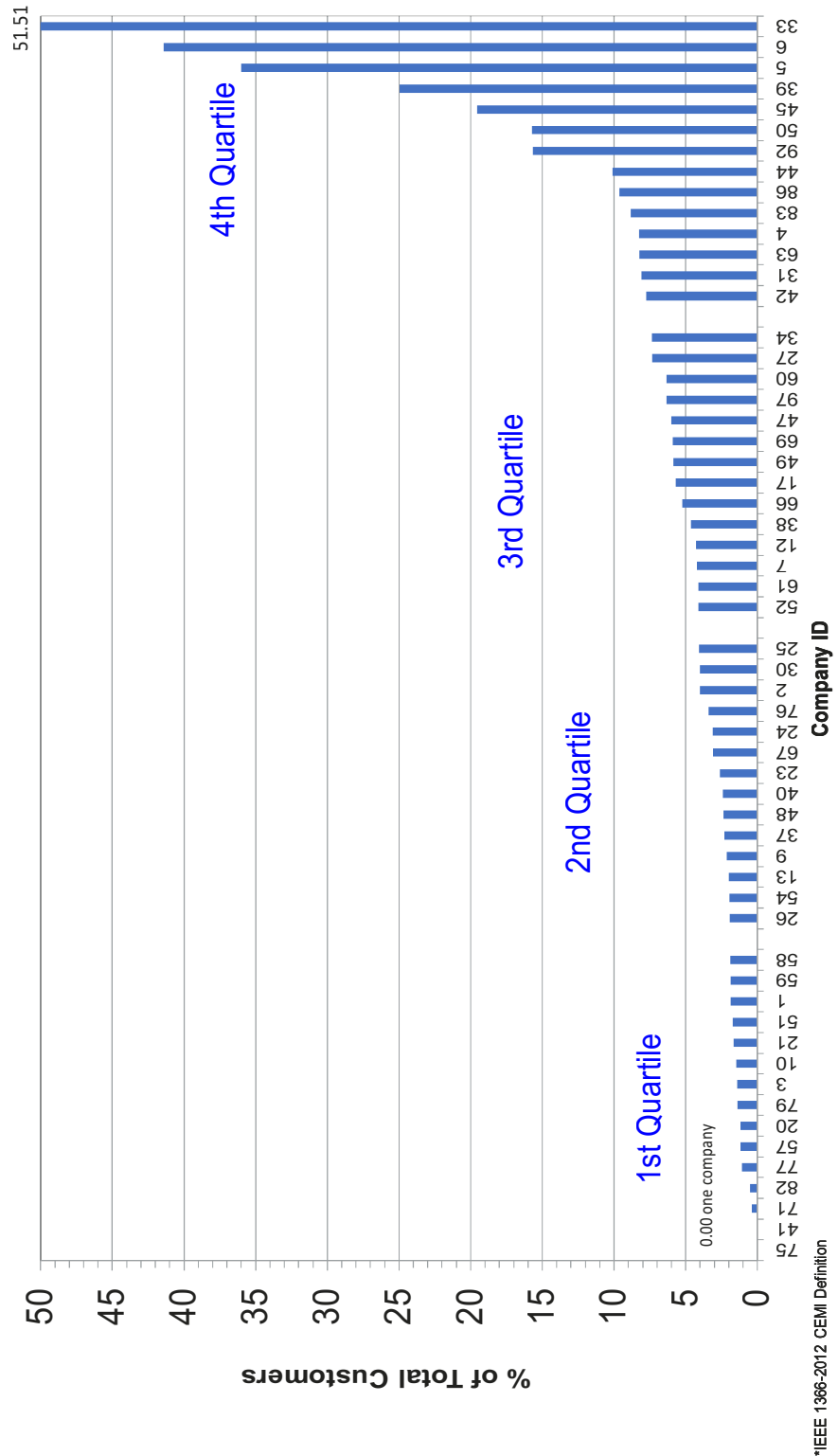
\*IEEE 1366-2012 CEMI Definition

### 2020 - Customers Experiencing $\geq$ Four Interruptions (CEMI<sub>4</sub>)\* as % of Total Customers Served (For All Interruptions)

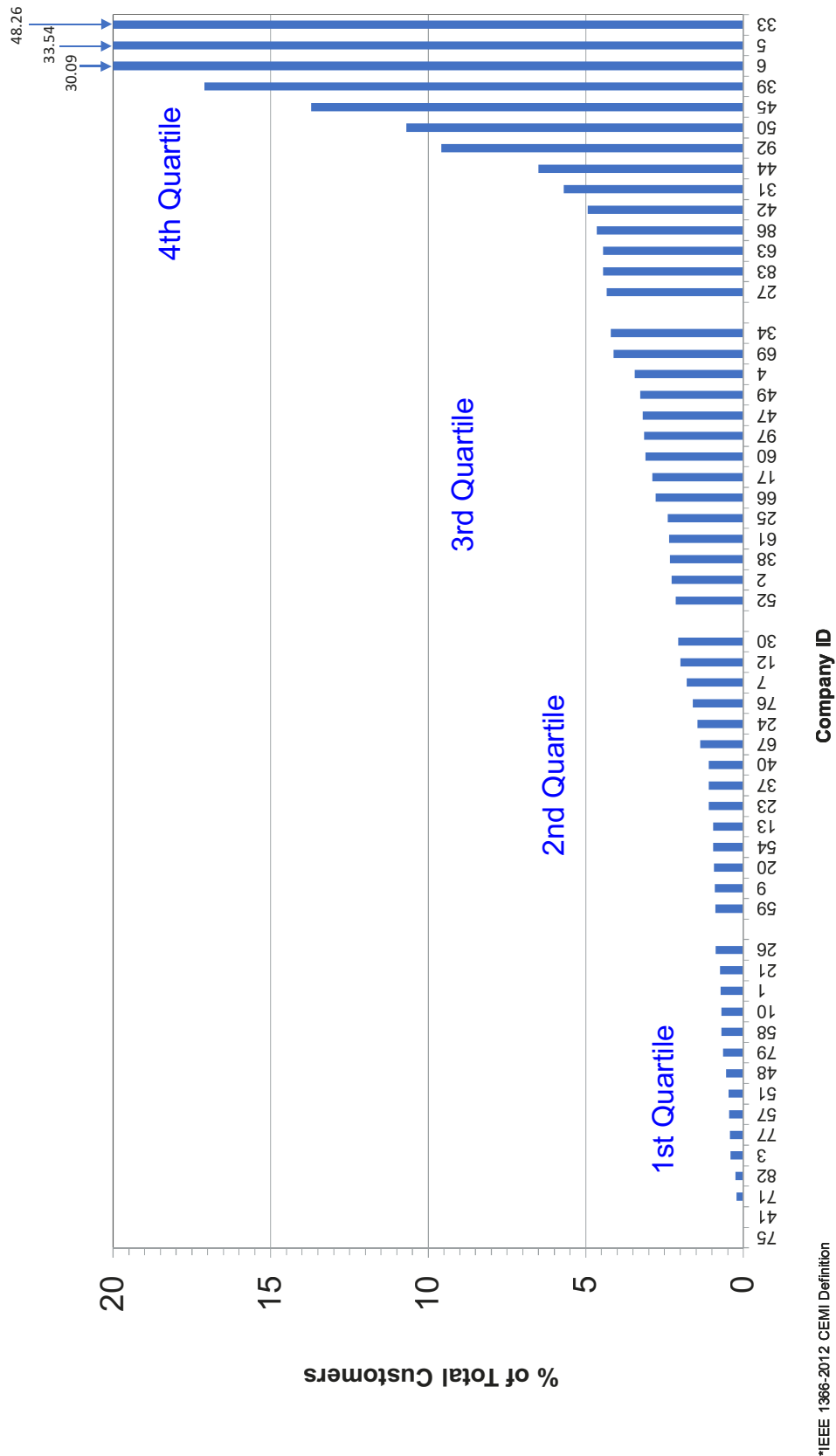


\*IEEE 1366-2012 CEMI Definition

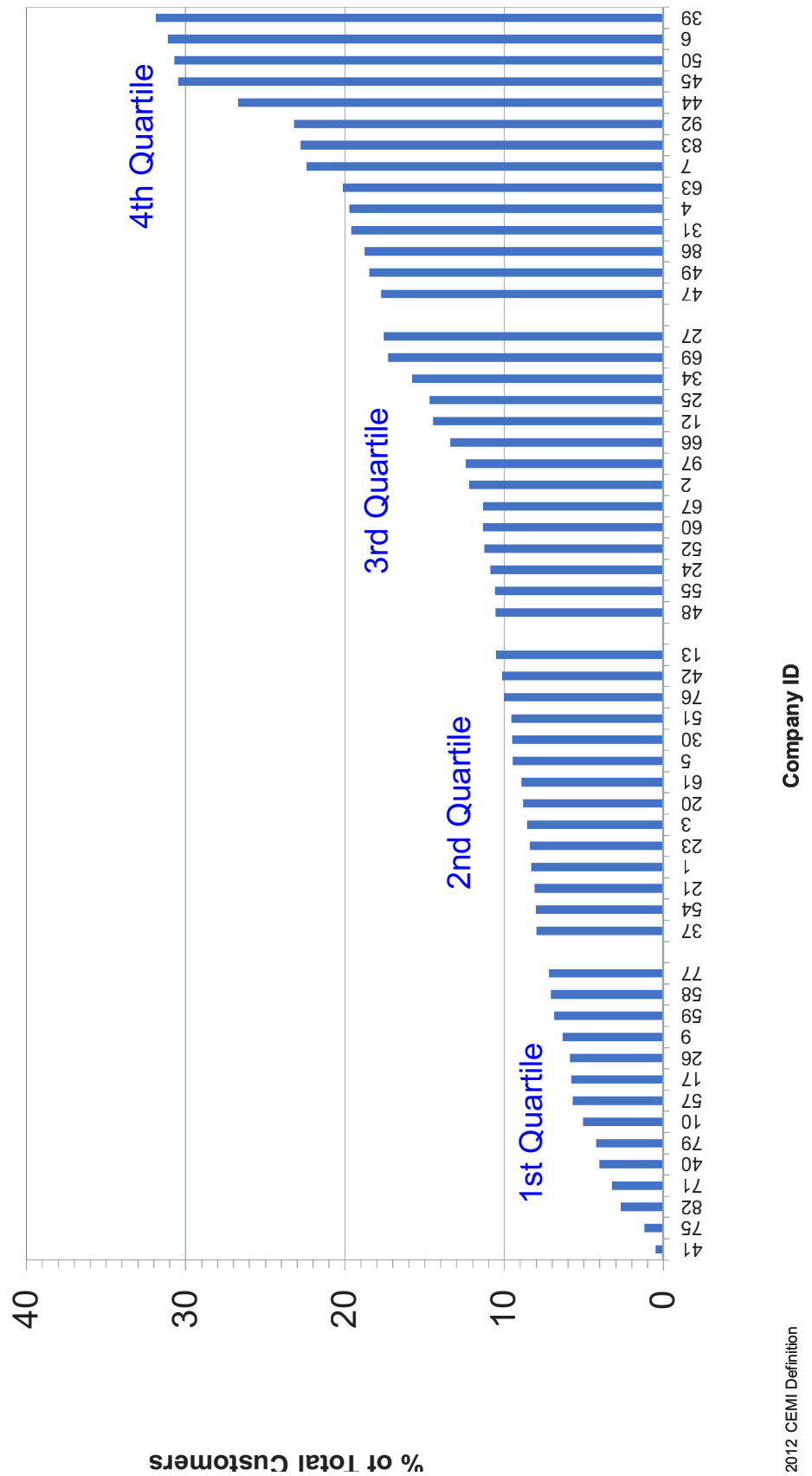
### 2020 - Customers Experiencing $\geq$ Five Interruptions (CEMI<sub>5</sub>)\* as % of Total Customers Served (For All Interruptions)



### 2020 - Customers Experiencing $\geq$ Six Interruptions (CEMI<sub>6</sub>)\* as % of Total Customers Served (For All Interruptions)

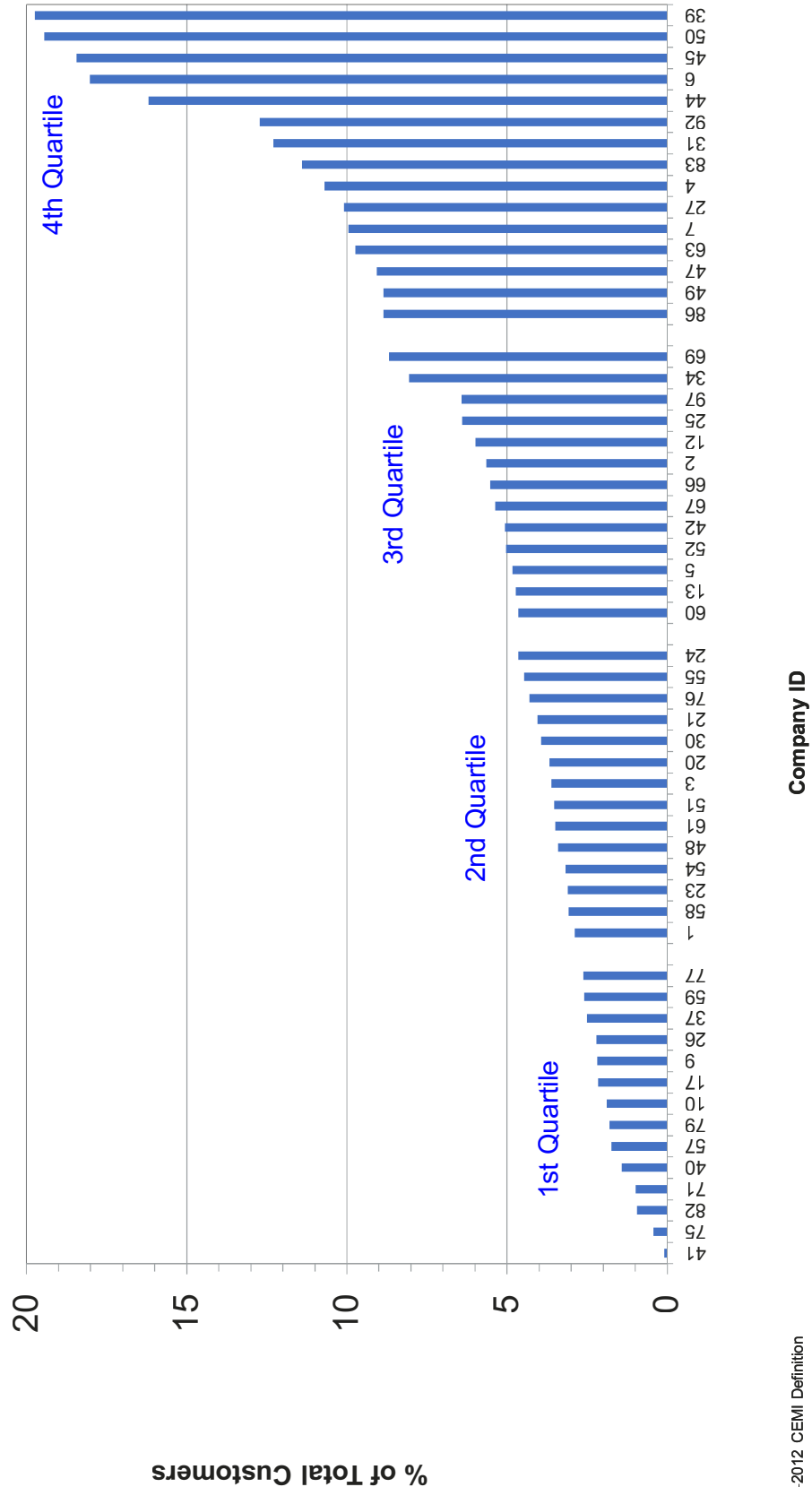


### 2020 Customers Experiencing $\geq$ Three Interruptions (CEMI<sub>3</sub>)\* as % of Total Customers Served (Excluding Major Events)



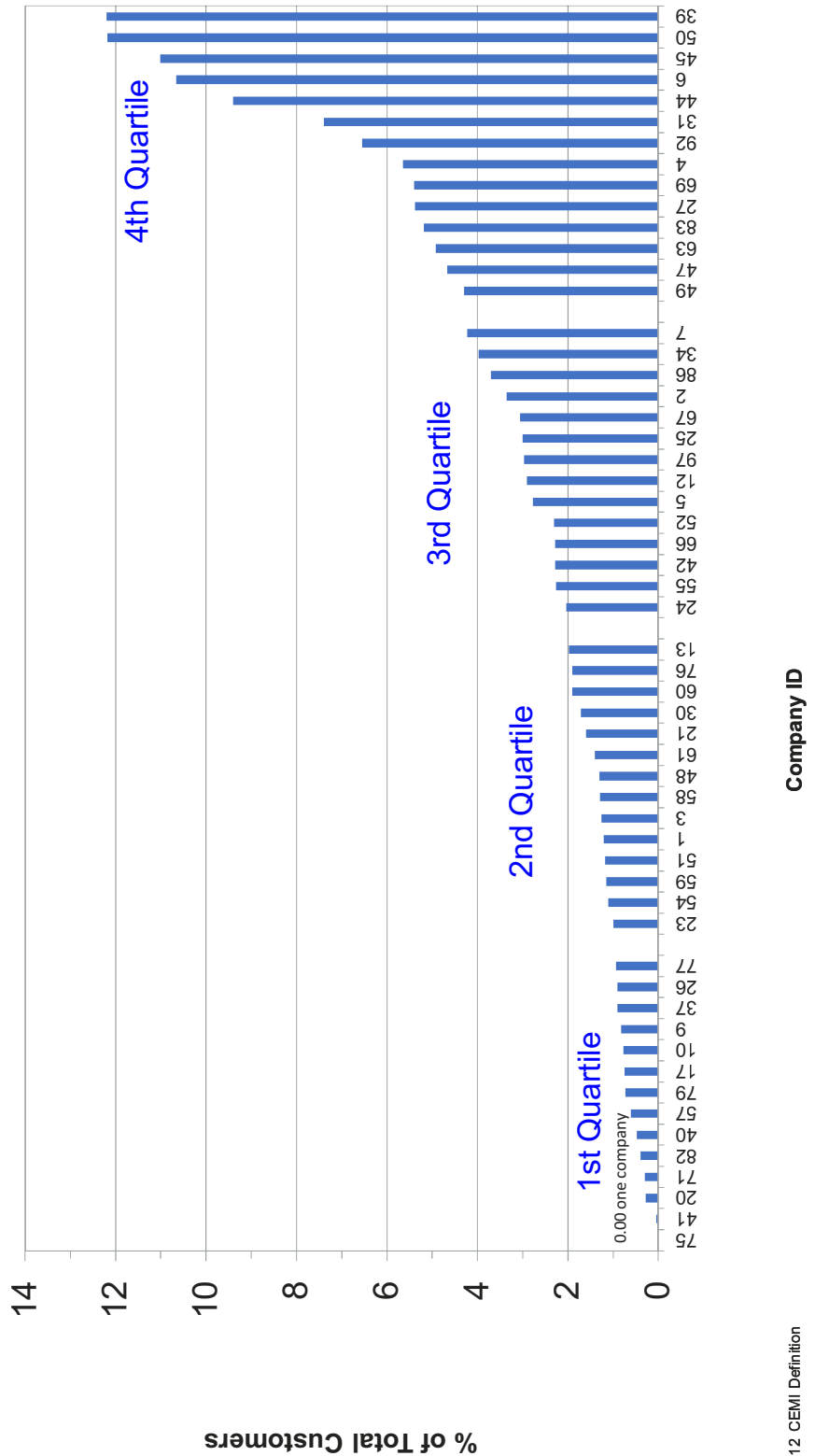


### 2020 Customers Experiencing $\geq$ Four Interruptions (CEMI<sub>4</sub>)\* as % of Total Customers Served (Excluding Major Events)



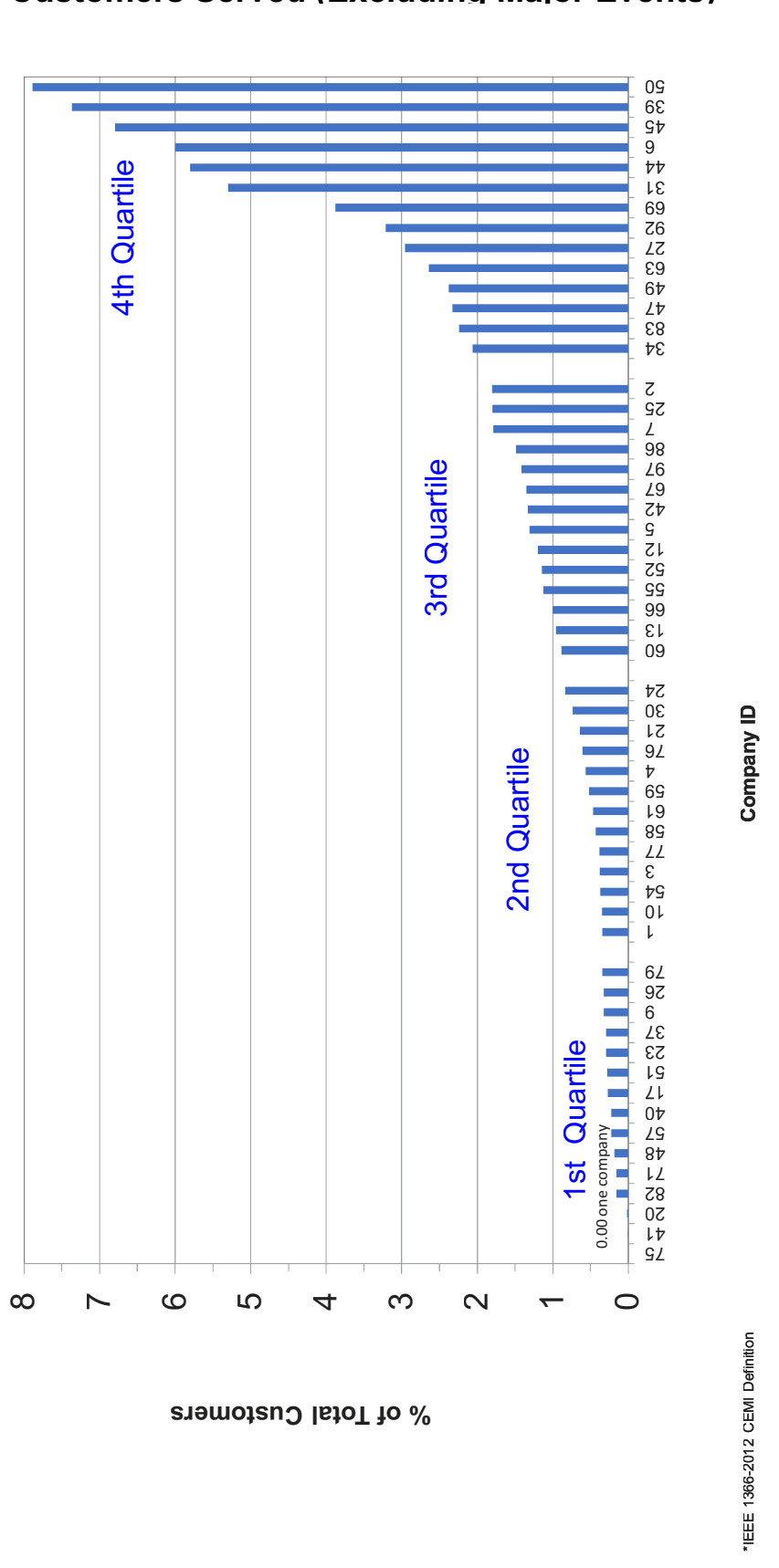
1366-2012 CEMI Definition

### 2020 Customers Experiencing $\geq$ Five Interruptions (CEMI<sub>5</sub>)\* as % of Total Customers Served (Excluding Major Events)

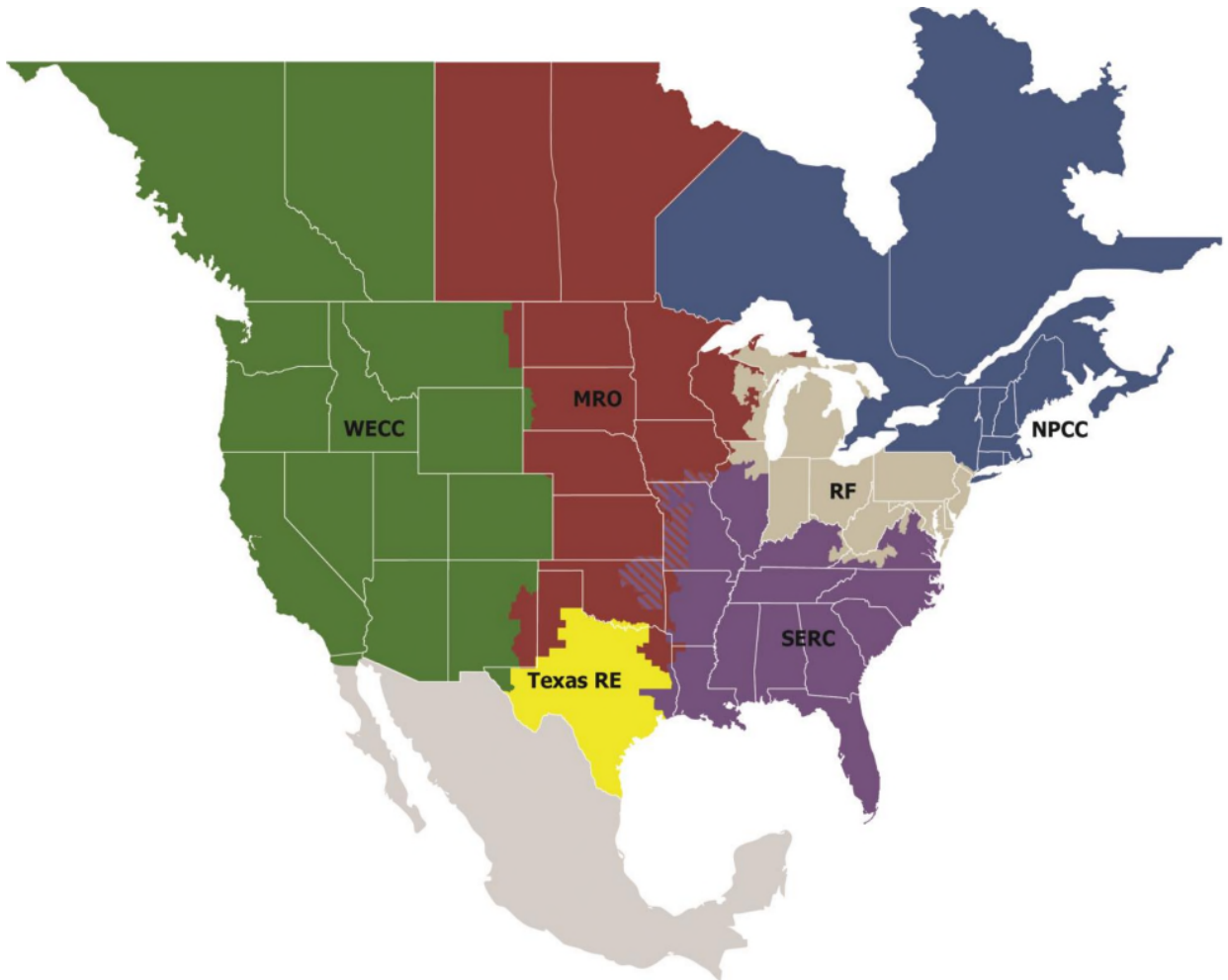


\*IEEE 1366-2012 CEMI Definition

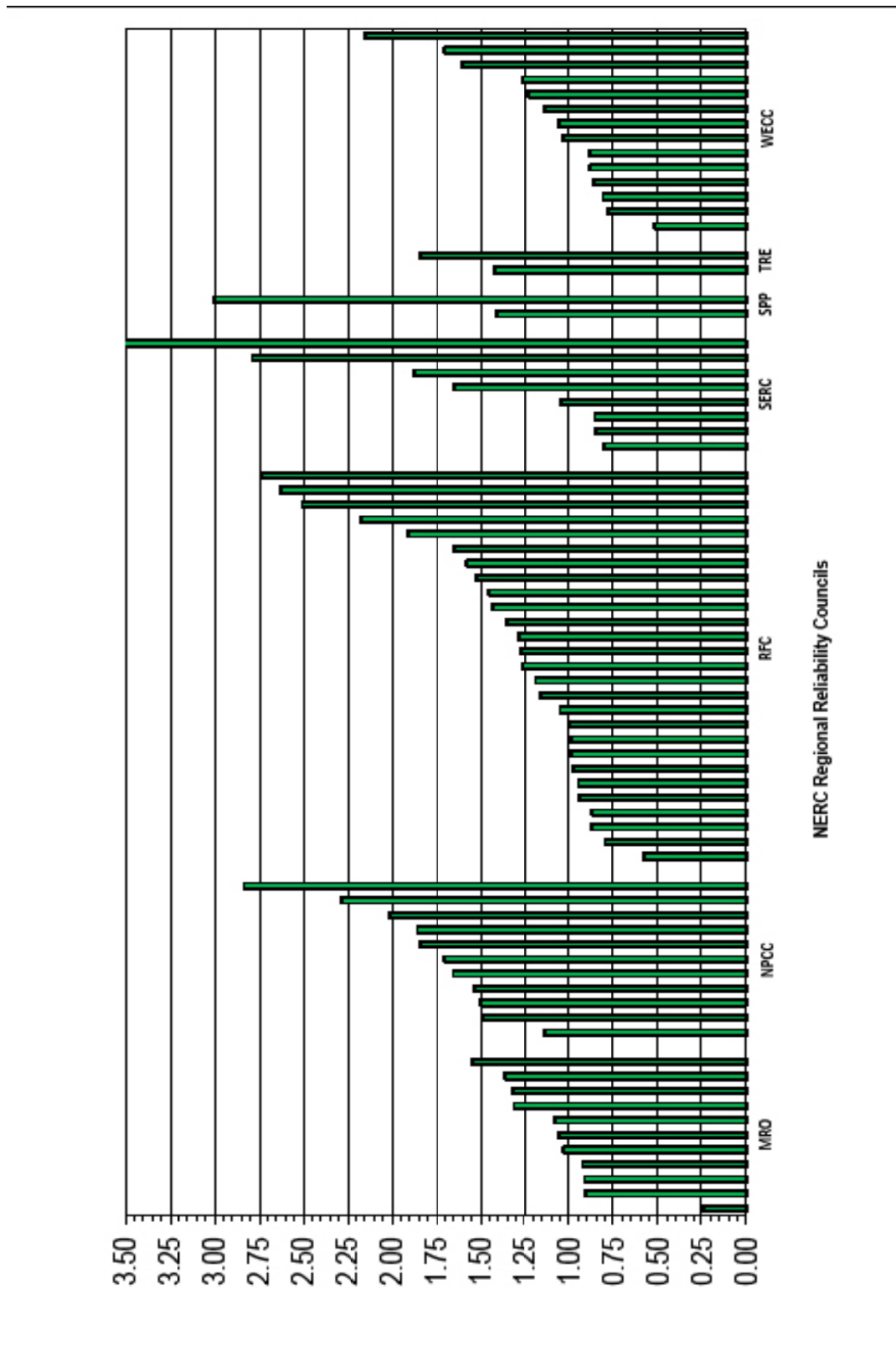
### 2020 Customers Experiencing $\geq$ Six Interruptions (CEMI<sub>6</sub>)\* as % of Total Customers Served (Excluding Major Events)



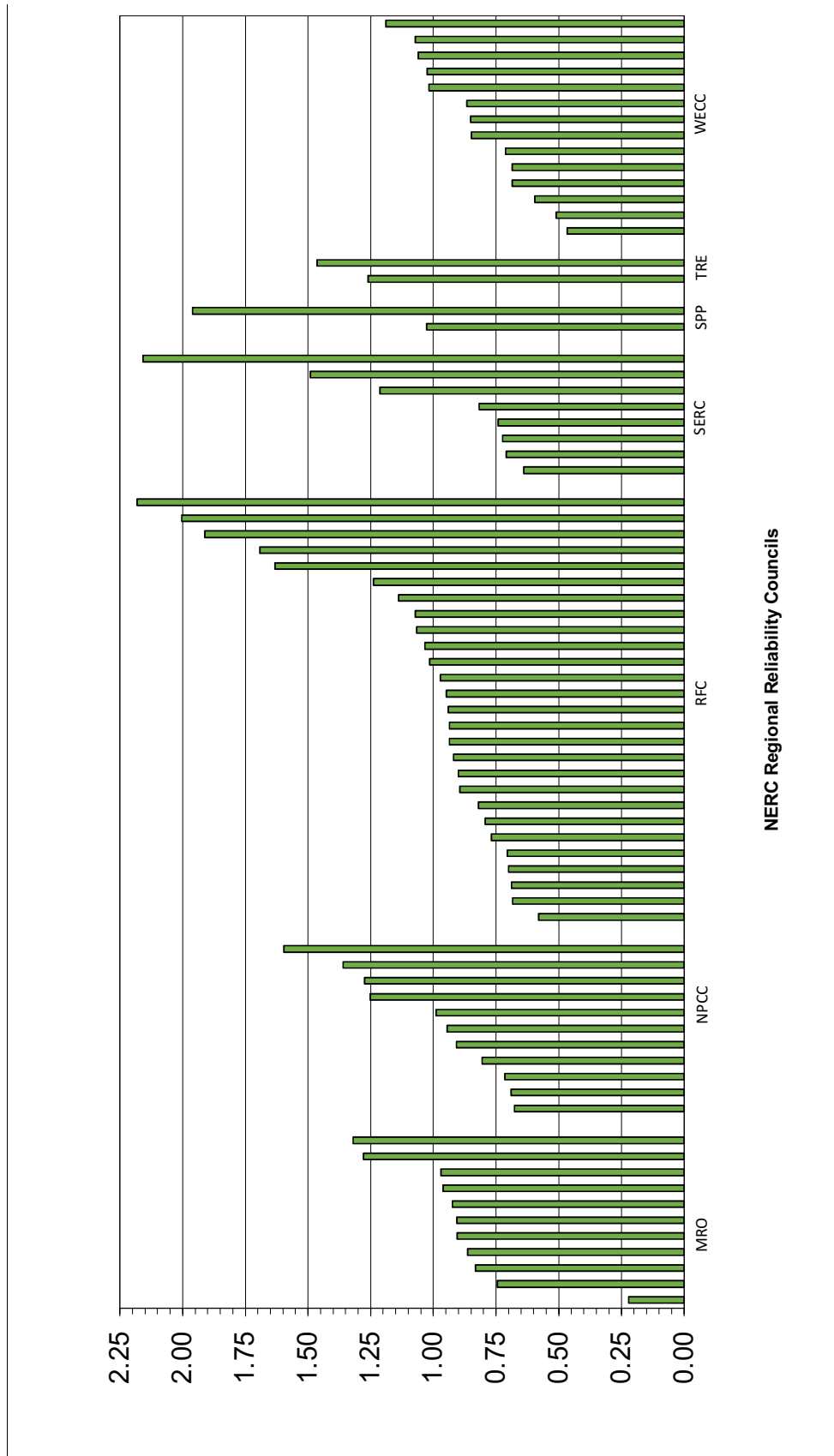
## North American Electric Reliability Corporation (NERC) Regional Reliability Councils



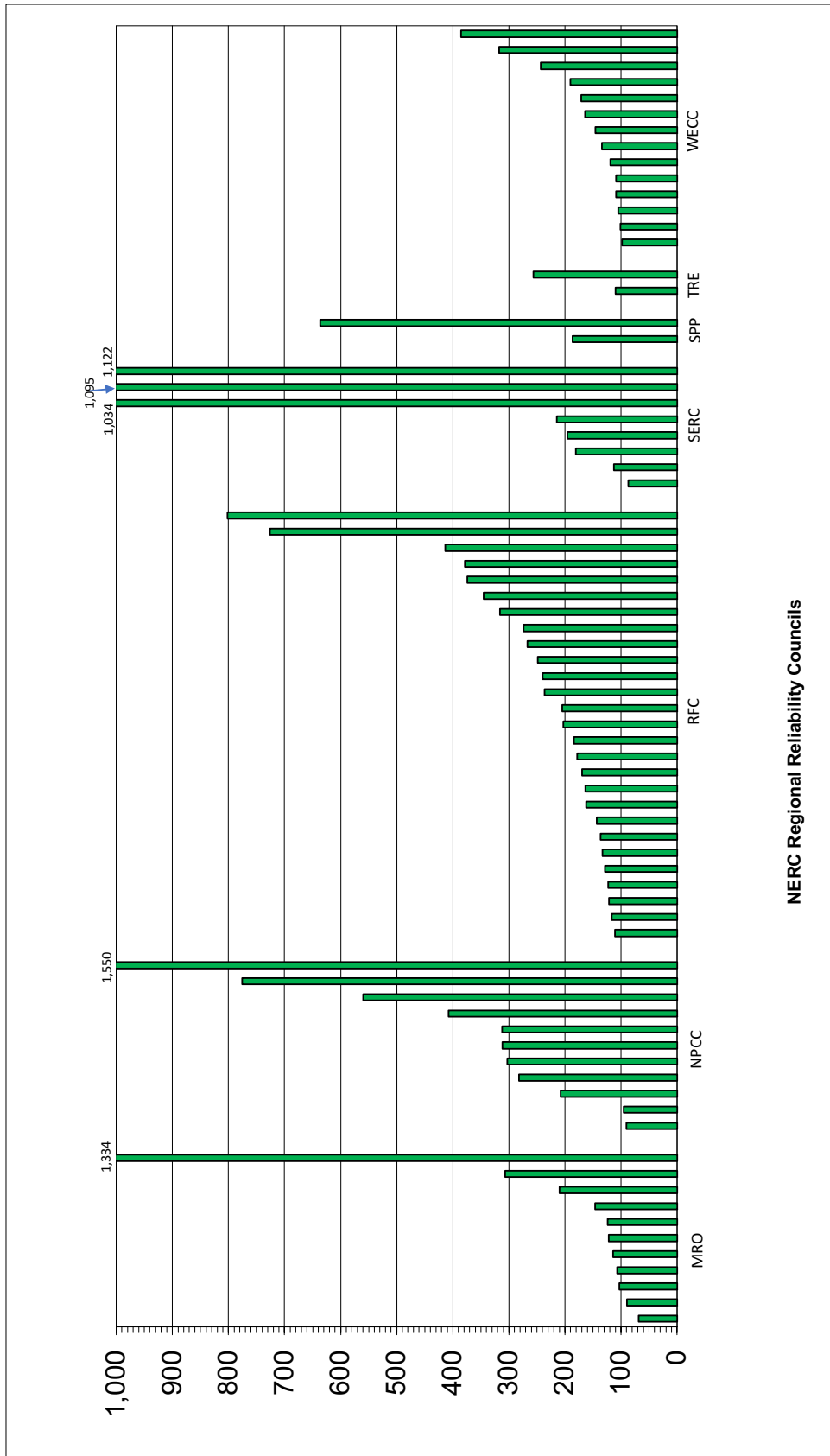
### 2020 SAIFI (For All Interruptions) By Regions



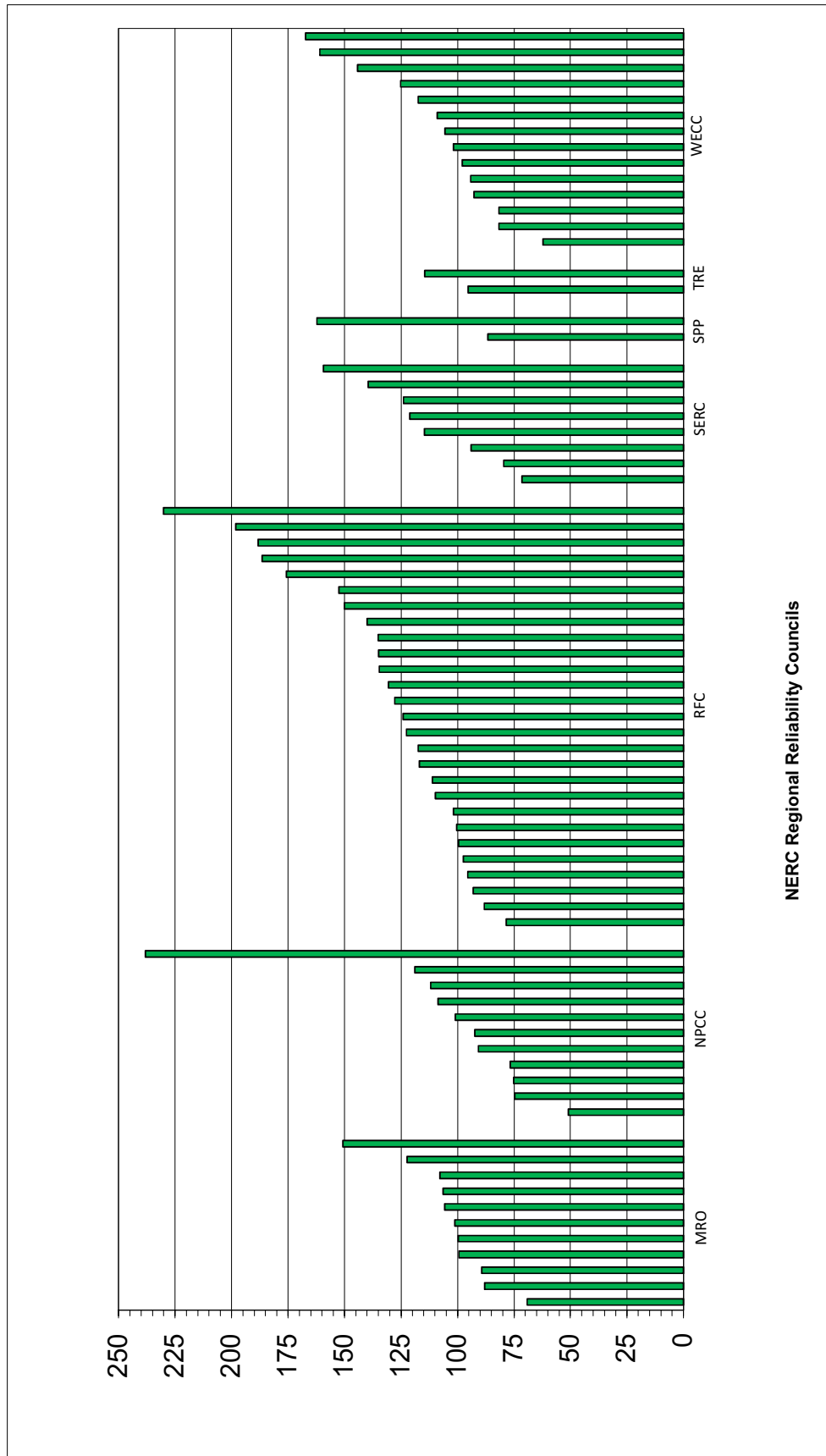
### 2020 SAIFI (Excluding Major Events) By Regions



### 2020 CAIDI (For All Interruptions) By Regions

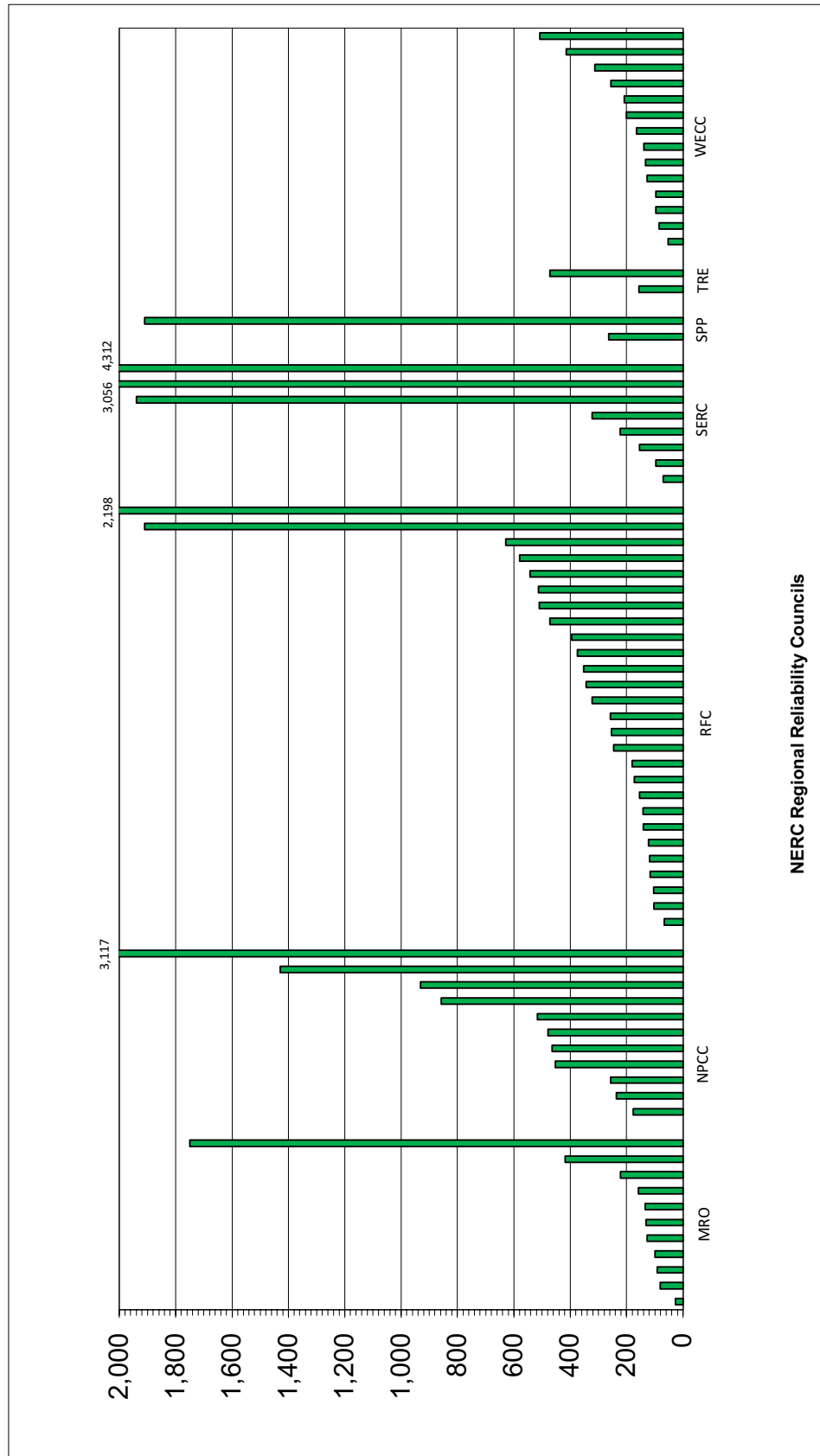


### 2020 CAIDI (Excluding Major Events) By Regions

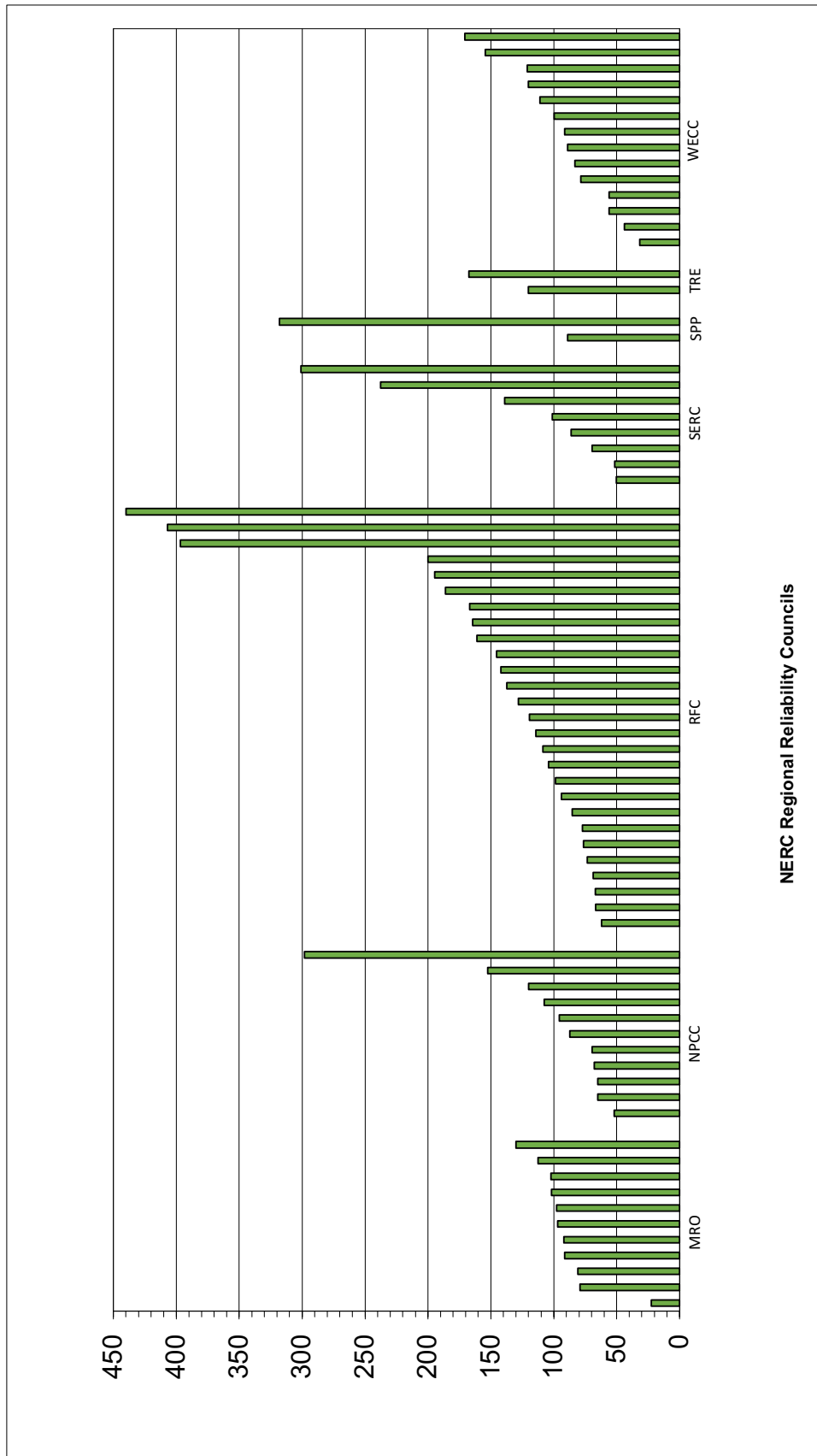




### 2020 SAIDI (For All Interruptions) By Regions



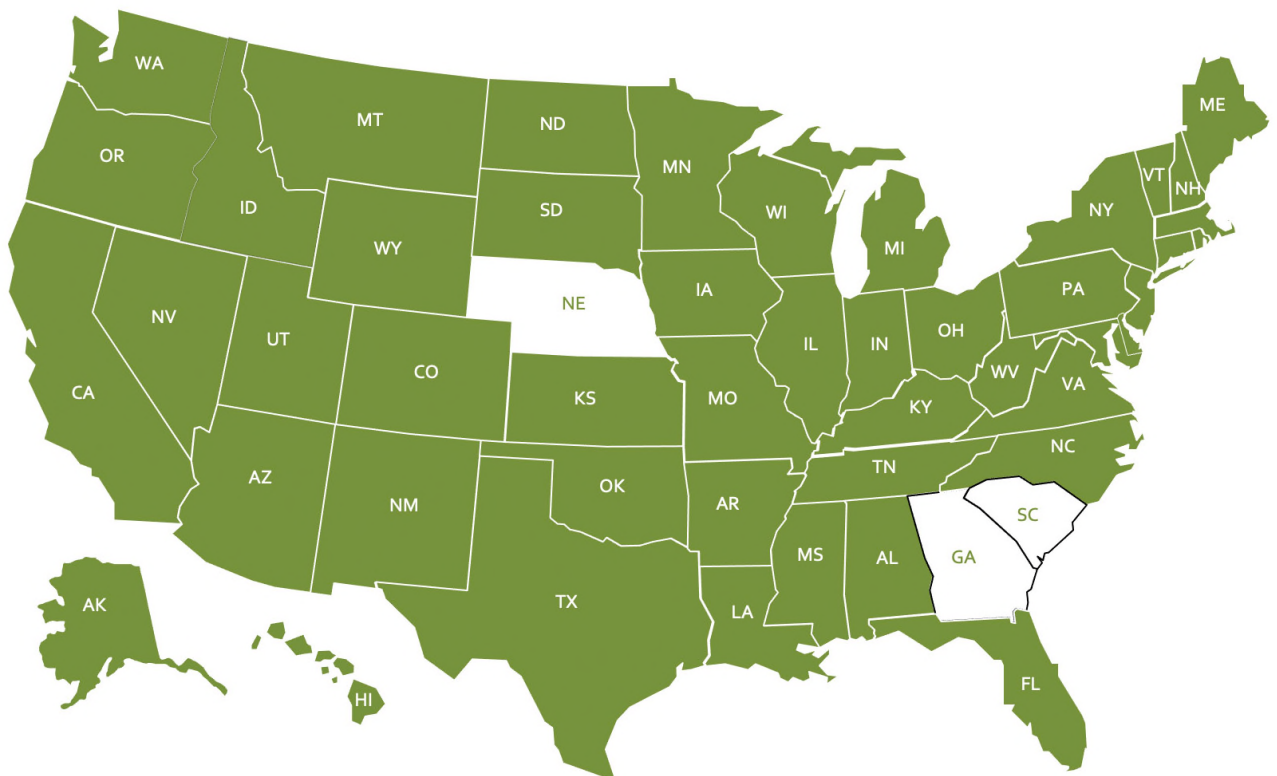
### 2020 SAIDI (Excluding Major Events) By Regions



## States/Provinces Requiring Reliability Statistics Reporting

For 2020 the participating companies indicated that they were required to report reliability statistics in 45 states. These states are listed below.

- |             |               |                |               |
|-------------|---------------|----------------|---------------|
| Alabama     | Iowa          | Montana        | Pennsylvania  |
| Arizona     | Kansas        | Nevada         | Rhode Island  |
| Arkansas    | Kentucky      | New Hampshire  | South Dakota  |
| California  | Louisiana     | New Jersey     | Tennessee     |
| Colorado    | Maine         | New Mexico     | Texas         |
| Connecticut | Maryland      | New York       | Utah          |
| Florida     | Massachusetts | North Carolina | Virginia      |
| Hawaii      | Michigan      | North Dakota   | Washington    |
| Idaho       | Minnesota     | Ohio           | West Virginia |
| Illinois    | Mississippi   | Oklahoma       | Wisconsin     |
| Indiana     | Missouri      | Oregon         | Wyoming       |



**IEEE 1366**

The chart on this page and the following pages lists the comments posted by the respondents on their use of the IEEE 1366 Standard and the associated definitions contained within. In addition, the following chart indicates whether or not the respondent is required by an associated PUC to report reliability data.

<b>ID #</b>	<b>PUC Report</b>	<b>Use 1366</b>
1	Yes	Yes
2	Yes	Yes
3	Yes	Yes
4	Yes	Yes
5	Yes	Yes
6	Yes	Yes
7	Yes	Yes
8	Yes	Yes
9	Yes	Yes
10	Yes	Yes
11	Yes	Yes
12	Yes	Yes
13	Yes	Yes
14	Yes	Yes
15	Yes	Yes
16	No	Yes
17	Yes	Yes
18	Yes	No
19	Yes	Yes
20	Yes	Yes
21	Yes	Yes
22	Yes	No
23	Yes	Yes
24	Yes	Yes
25	Yes	Yes
26	Yes	Yes
27	Yes	Yes
28	Yes	Yes
29	Yes	Yes
30	Yes	Yes
31	Yes	Yes
32	Yes	Yes
33	Yes	Yes
34	Yes	Yes

ID #	PUC Report	Use 1366
35	Yes	Yes
36	Yes	Yes
37	Yes	Yes
38	Yes	Yes
39	Yes	Yes
40	Yes	Yes
41	Yes	Yes
42	Yes	Yes
43	No	Yes
44	Yes	Yes
45	Yes	Yes
46	Yes	Yes
47	Yes	Yes
48	Yes	Yes
49	Yes	Yes
50	Yes	Yes
51	Yes	Yes
52	Yes	Yes
53	Yes	Yes
54	Yes	Yes
55	Yes	Yes
56	Yes	Yes
57	Yes	Yes
58	Yes	Yes
59	Yes	Yes
60	Yes	Yes
61	Yes	Yes
63	Yes	Yes
66	Yes	Yes
67	No	Yes
68	Yes	Yes
69	Yes	Yes
71	Yes	Yes
74	No	Yes
75	Yes	Yes
76	Yes	Yes
77	Yes	Yes
79	Yes	Yes
80	Yes	Yes

ID #	PUC Report	Use 1366
82	Yes	Yes
83	Yes	Yes
84	Yes	Yes
86	Yes	Yes
89	Yes	Yes
90	Yes	Yes
92	Yes	Yes
97	Yes	Yes

## Additional Indices Tracked And Reported To PUCs By Participants

Company ID #	Track Additional Indices	Additional Indices TRACKED by the Company	Report Additional Indices	Additional Indices REPORTED to PUC
1	Yes	CEMI	Yes	Individual feeder performance
2	Yes	MAIFI-E	Yes	MAIFI-E
3	No		No	
4	Yes	CIII, CKSAIDI, CKSAIFI	Yes	Others as requested
5	Yes	CEMI	Yes	Individual Feeder Performance, ASAI
6	No		No	
7	Yes	CEMI 4, 5, 6, 7 CELID 6, 12, 24	Yes	CEMI CELID
8	Yes	ASAI	Yes	ASAI
9	No		No	
10	Yes	CEMI and Customer Interruptions >= 4 Hours	Yes	CEMI3, CEMI5, CEMI7 and CEMI9
11	Yes	CEMI; Perfect Power (Customers Experiencing No Sustained Interruptions)	No	
12	No		No	
13	No		No	
14	No			
15	Yes	ASAI	Yes	ASAI
16	No		No	
17	Yes	PUC 10% Method, which excludes sustained outages in all storms with more than 10% of total customers having sustained outages.	Yes	PUC 10% Method, which excludes sustained outages in all storms with more than 10% of total customers having sustained outages.
18	No		No	
19	Yes	CEMI-3, CEMI-5, CEMI-8, CEMM-15, CEMM-25, MAIFle	Yes	1 minute metrics: SAIDI, SAIFI, CAIDI, MAIFle and CEMI-5
20	No		No	
21	No		No	
22	No		No	
23	Yes	CAIFI, CERTs, CEMI3, CELID8	Yes	SAIFI and CAIDI excluding up to 9 extreme weather days for outages greater than 1 minute
24	Yes	CEMI	Yes	MAIFI, CAIFI
25	No		Yes	Vegetation SAIFI
26	Yes	CEMI	No	
27	No		No	
28	No		No	

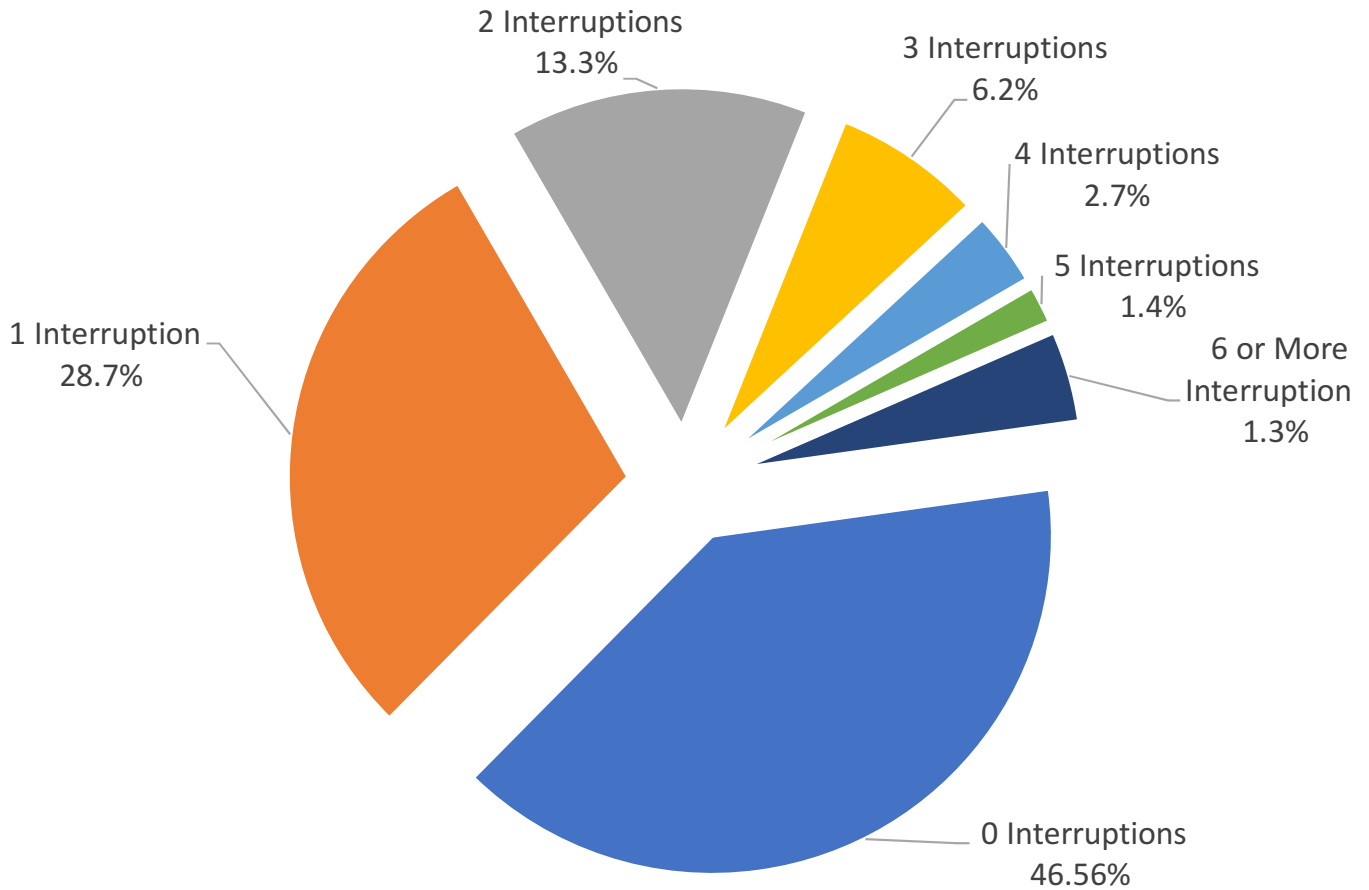
Company ID #	Track Additional Indices	Additional Indices TRACKED by the Company	Report Additional Indices	Additional Indices REPORTED to PUC
29	Yes	Months Between Interruptions (MBI)	No	
30	Yes	CEMI, with threshold >= 6	Yes	ASAI
31	Yes	ASAI, CEMI, FIRE	No	
32	Yes	Months Between Interruptions (MBI)	No	
33	Yes	ASAI- Average Service Availability Index	No	
34	No		No	
35	Yes	ASAI	Yes	ASAI
36	Yes	Worst Performance Feeders	Yes	Worst Performance Feeders
37	No		No	
38	No		No	
39	No		No	
40	No		No	
41	Yes	MAIFIE	No	
42	No			
43	No		No	
44	Yes	ASAI, CEMI, FIRE	No	
45	No		No	
46	Yes	Months Between Interruptions (MBI)	No	
47	No		No	
48	Yes	CEMI, CELID, ASIA, CAIFI	Yes	CEMI, CELID
49	Yes	ASAI	No	
50	No		No	
51	Yes	CEMI	Yes	CEMI, CELI, Individual Feeder Performance, MAIFI
52	Yes	CELID8, CEMI4, CEMI6	Yes	CEMI <sub>n</sub> , CELID 8 hours - MPSC Normal Conditions, CELID 16 hours - MPSC Normal Conditions, CELID 60 hours - MPSC Catastrophic Conditions, CELID 120 hours - MPSC Catastrophic Conditions
53	Yes	CEMI-3, CEMI-5, CEMI-8, CEMM-25, CEMM-35, MAIFIE	Yes	1 minute metrics: SAIDI, SAIFI, CAIDI, MAIFIE, and CEMI-5
54	Yes	CEMI	Yes	CEMI, CELI, Individual Feeder Performance
55	Yes	CEMI	Yes	CEMI
56	No		No	
57	No		No	
58	Yes	CAIFI, CEMI3, CELID8	Yes	CAIFI
59	No		No	



Company ID #	Track Additional Indices	Additional Indices TRACKED by the Company	Report Additional Indices	Additional Indices REPORTED to PUC
60	Yes	CPI (circuit performance indicator) is a blended metric of SAIDI, SAIFI and MAIFI (where available)	No	
61	No		No	
63	No		No	
66	No		No	
67				
68	No		No	
69	Yes	AW and CW SAIFI	No	
71	No		No	
74	No		No	
75	No		No	
76	No		No	
77	Yes	ASAI	Yes	ASAI
79	Yes	CEMI/CELID	No	
80	Yes	ASAI and CAIFI	Yes	ASAI and CAIFI
82	Yes	"CEMI6"	No	
83	No		No	
84	Yes	ASAI, MAIFI	Yes	SAIFI, SAIDI, ASAI
86	No		No	
89	No		No	
90	No		No	
92	Yes	CIII, CKSAIDI, CKSAIFI	Yes	CKSAIDI, CKSAIFI and Others as requested
97	No		No	

### Customer Outage Experiences

The following graphic and chart illustrate the percentage of customers who experienced interruptions (excluding major events).



**What percentages of customers have seen the following number of interruptions (excluding major events) in 2020?**

Year	Number of Interruptions (Excluding Major Events)						
	0	1	2	3	4	5	6 or more
<b>2020</b>	46.5	28.7	13.3	6.2	2.7	1.4	1.3
2019	39.6	29.3	14.4	7.1	3.5	1.8	4.4
2018	43.3	29.6	14.1	6.4	3.0	1.4	2.1
2016	44.6	29.0	13.7	6.4	2.9	1.4	2.0
2015	43.8	30.2	13.3	6.4	3.0	1.5	1.8
2014	46.7	30.2	13.9	6.5	3.2	1.5	1.7
2013	45.4	28.7	14.2	6.6	3.1	1.5	1.5
2012	42.0	32.6	14.8	6.4	2.8	1.3	1.2
2011	39.7	29.0	15.5	7.8	3.8	1.9	2.2
2010	41.3	27.2	14.5	7.6	3.9	2.4	3.2
2009	45.7	25.5	13.6	7.1	3.8	2.2	2.1

## Utility Data Collection Information

The charts on the following pages provide summarized information on how the survey respondents collected the data that is reported in this survey.

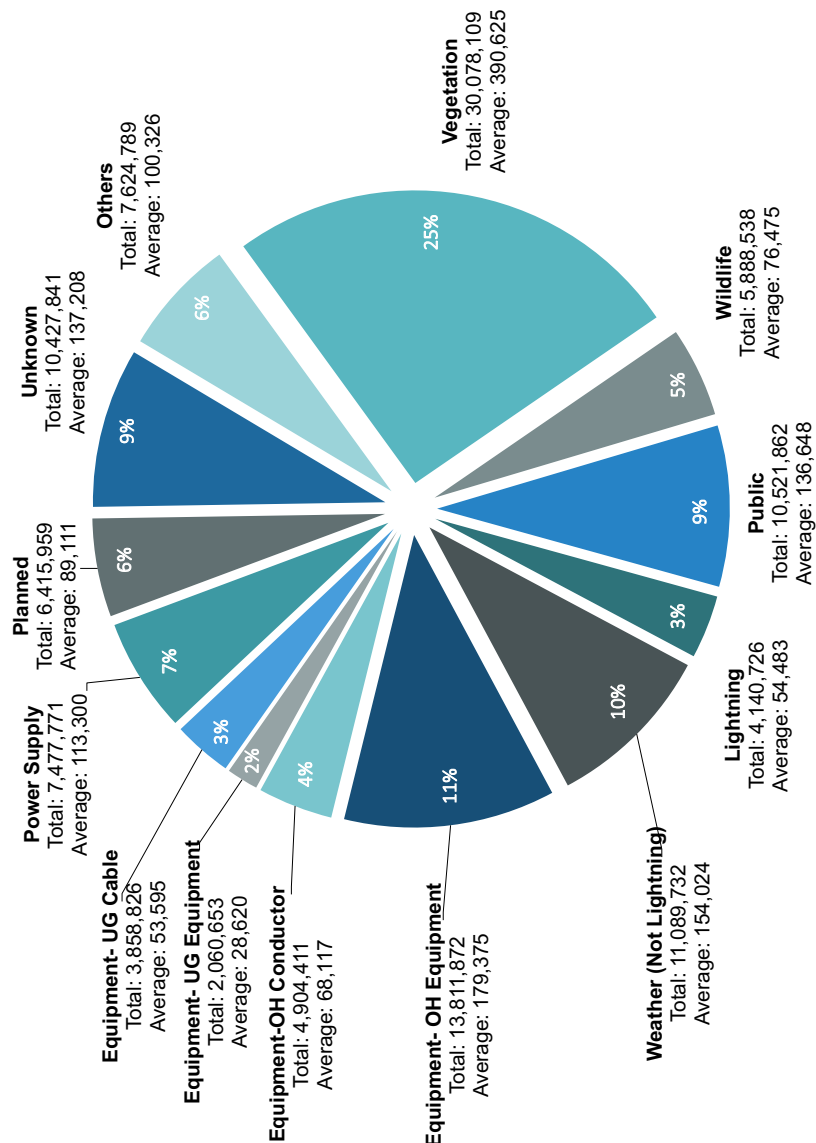
<b>Identify the percentage of your customers whose outages are capable of being reported through an automated meter reading system (i.e., AMR).</b>				
<b>Year</b>	<b>0-33%</b>	<b>34-67%</b>	<b>68-100%</b>	<b>None</b>
<b>2020</b>	20	4	32	23
<b>2019</b>	20	5	31	24
<b>2018</b>	20	4	33	28
<b>2017</b>	17	4	34	33
<b>2016</b>	23	3	30	36
<b>2016</b>	22	6	34	39
<b>2014</b>	21	8	28	40
<b>2013</b>	12	8	16	41
<b>2012</b>	20	8	15	35
<b>2011</b>	24	9	11	31
<b>2010</b>	21	8	8	26

<b>Identify the percentage of customers served from substations with SCADA.</b>				
<b>Year</b>	<b>0-33%</b>	<b>34-67%</b>	<b>68-100%</b>	<b>None</b>
<b>2020</b>	5	17	56	1
<b>2019</b>	5	18	57	1
<b>2018</b>	9	15	62	2
<b>2017</b>	9	15	62	2
<b>2016</b>	10	17	63	2
<b>2015</b>	11	20	67	3
<b>2014</b>	13	22	61	0
<b>2013</b>	10	20	45	0
<b>2012</b>	10	19	48	1
<b>2011</b>	9	19	44	3
<b>2010</b>	5	18	35	5

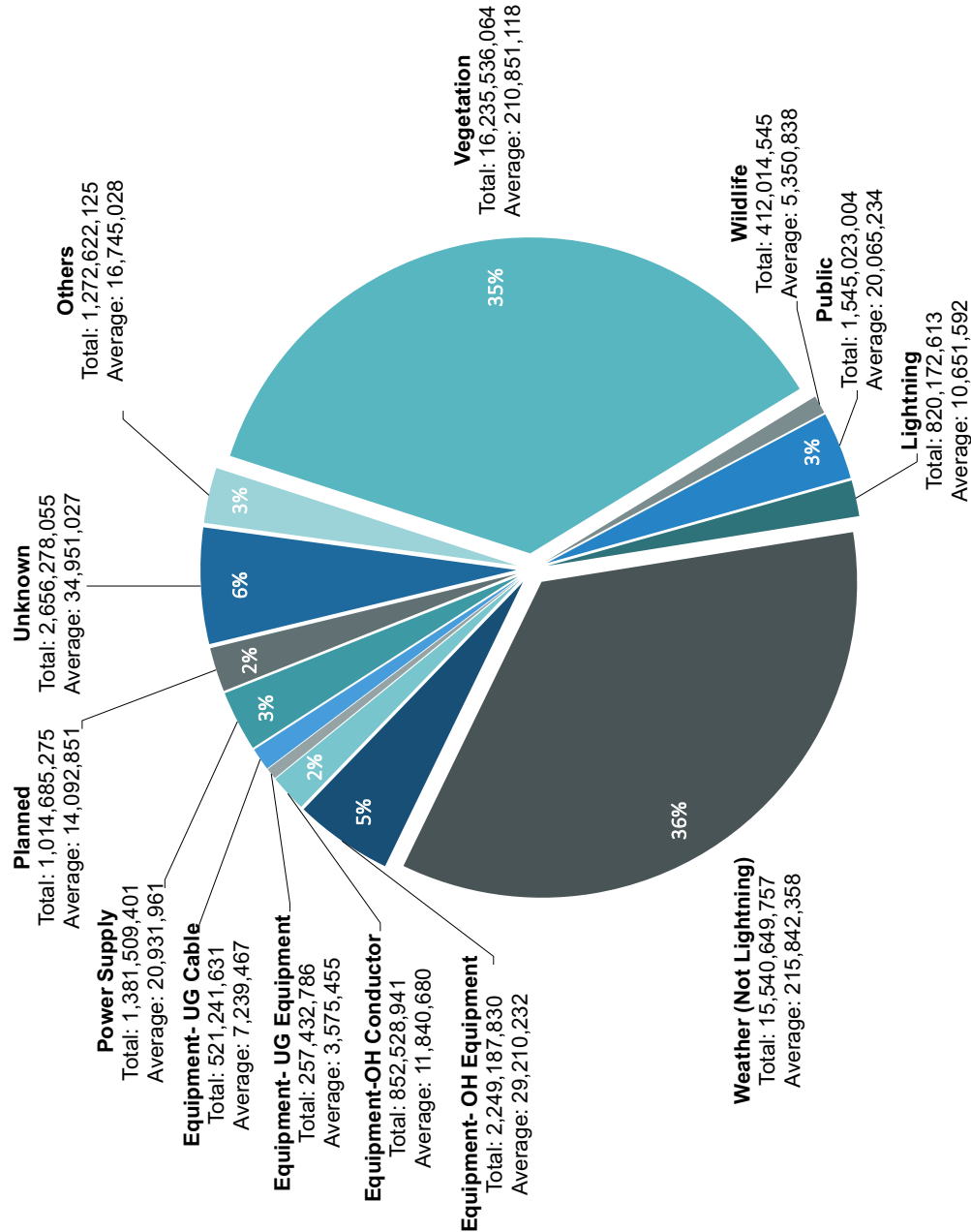
## Graphical Summarizations, Respondents Data & Survey Questions

This section of the report contains the data submitted by each respondent that participated in the survey. The various tables contain all of the data submitted in the Indices, Utility Info (Items F-J), Interruption Data 1 and Interruption Data 2 Tabs of the survey.

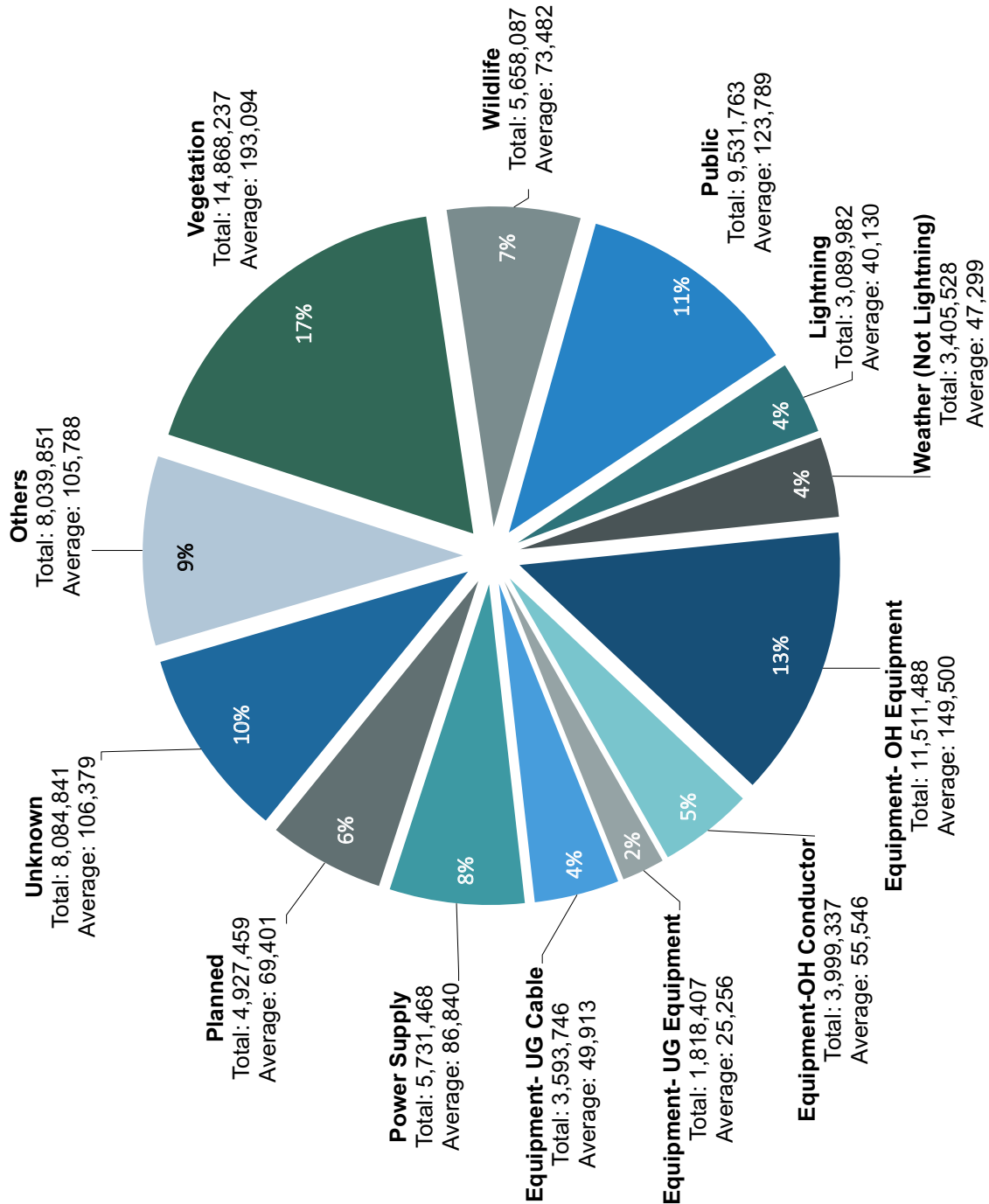
### USA Total Number of Outage Causes, Average Number of Outage Causes, and Average Percentage of Outage Causes For All Interruptions



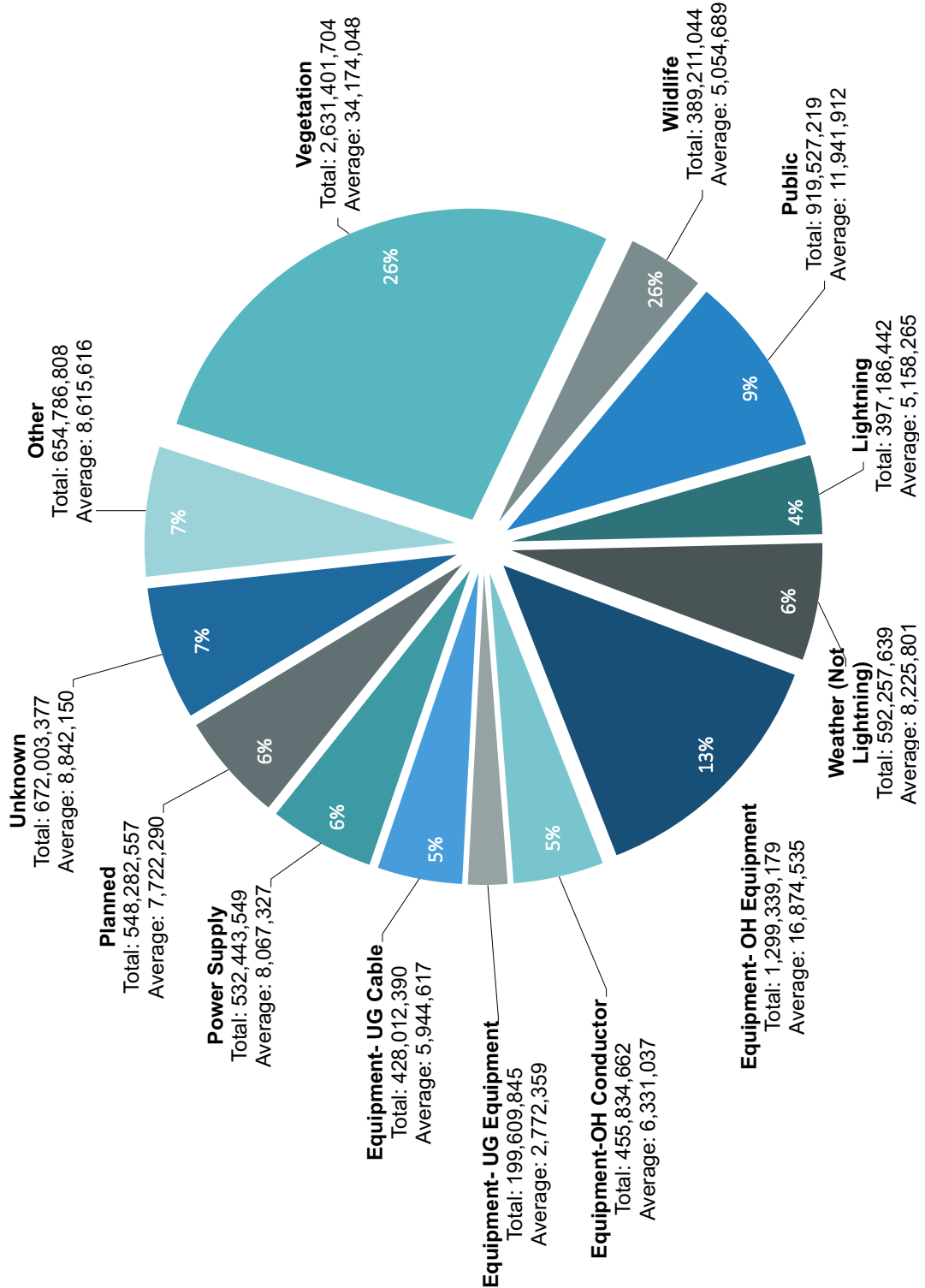
### USA Total Number of Outage Minutes, Average Number of Outage Minutes, and Average Percentage of Outage Minutes For All Interruptions



## USA Total Number of Outage Causes, Average Number of Outage Causes, and Average Percentage of Outage Causes Excluding Major Events

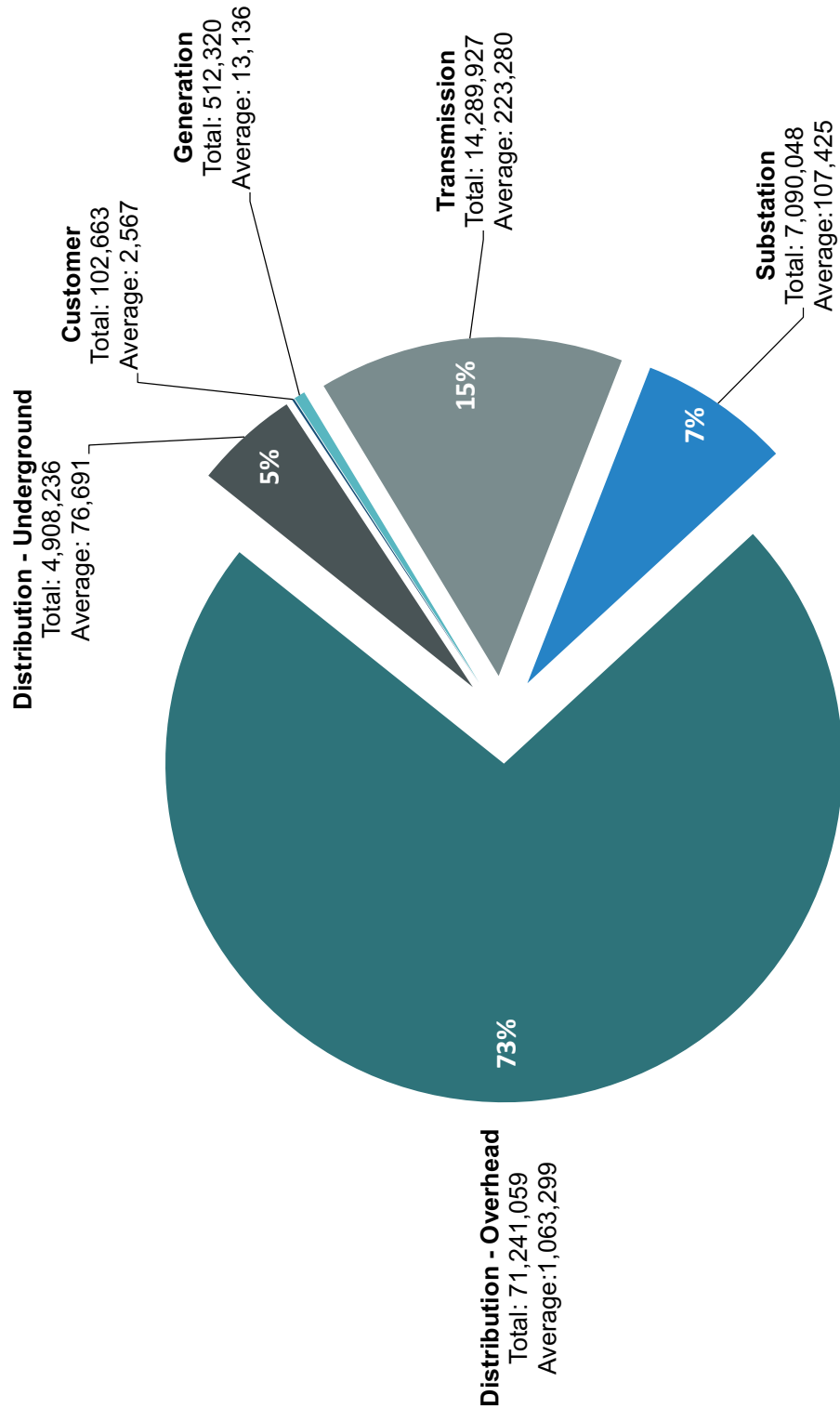


## USA Total Number of Outage Minutes, Average Number of Outage Minutes, and Average Percentage of Outage Minutes Excluding Major Events



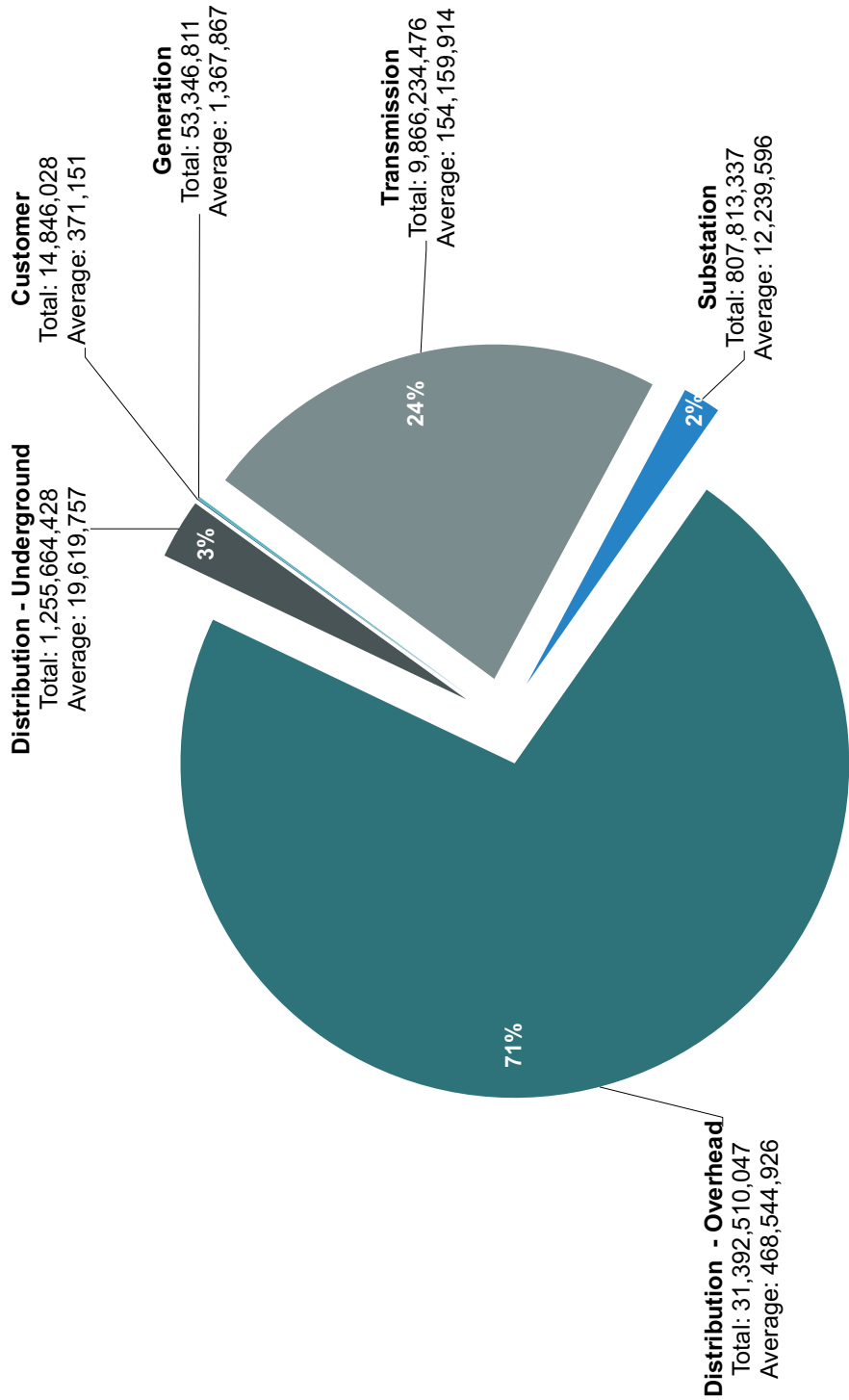
# USA Total Number of Outage Causes, Average Number of Outage Causes, and Average Percentage of Outage Causes for All Interruptions

## By Classification

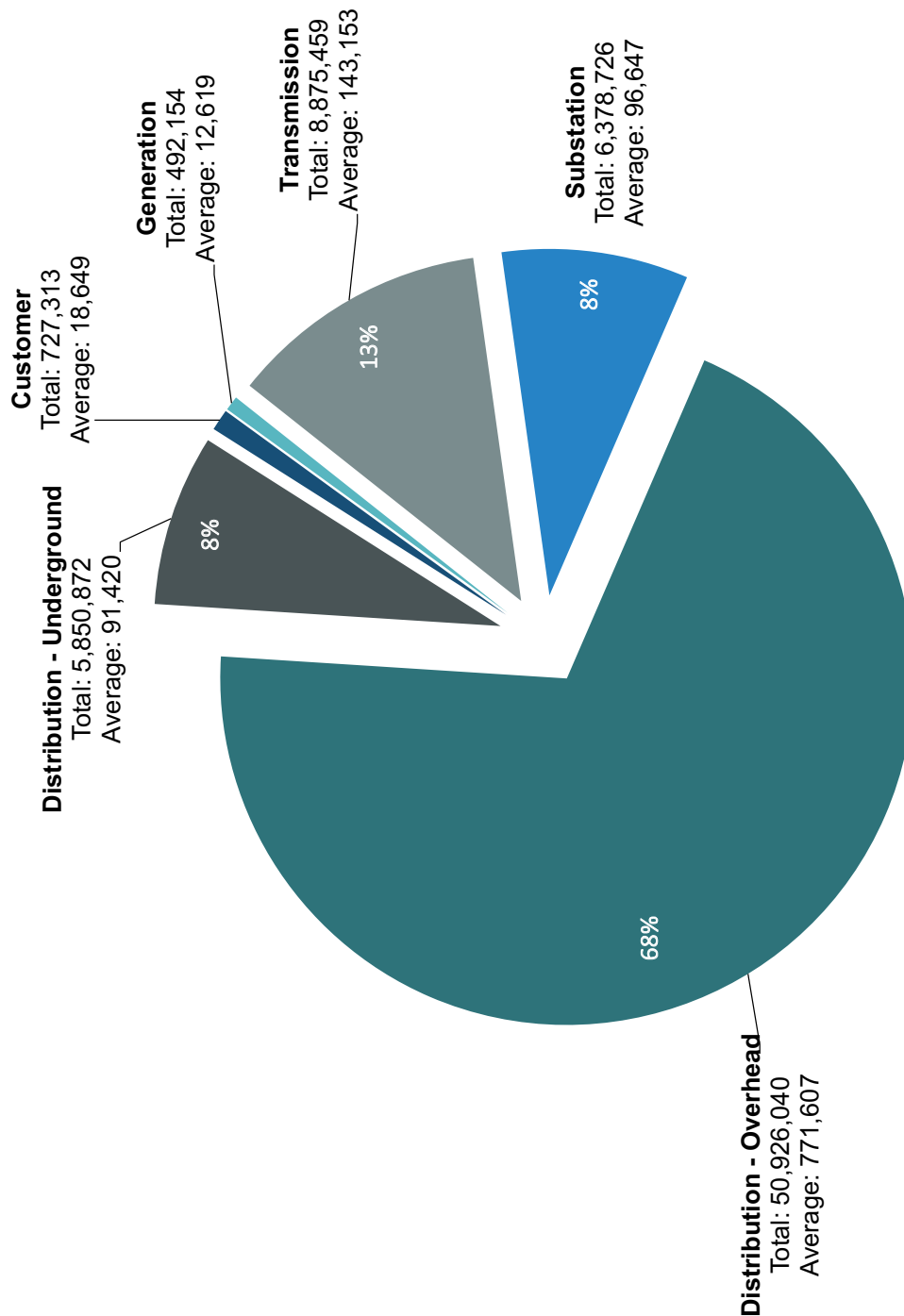




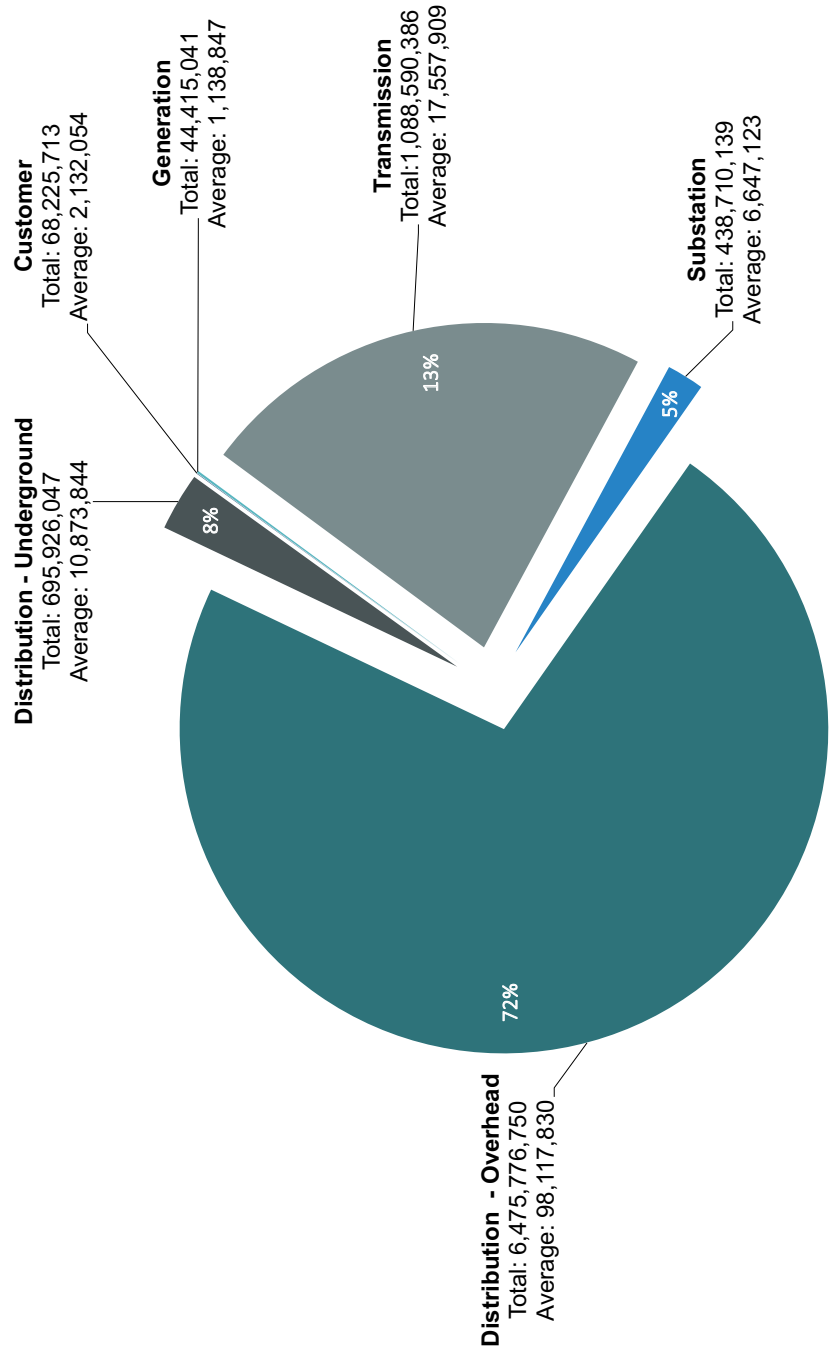
### USA Total Number of Outage Minutes, Average Number of Outage Minutes, and Percentage of Outage Minutes for All Interruptions By Classification



### USA Total Number of Outages, Average Number of Outages, and Average Percentage of Outages Excluding Major Events By Classification



### USA Total Number of Outage Minutes, Average Number of Outage Minutes and Average Percentage of Outage Minutes Excluding Major Events By Classification



Company Data For Reliability Indices										
ID #	Including All Interruptions					Excluding Major Events				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
1	0.91	146.57	133.81	99.975		0.83	122.28	101.80	99.981	
2	1.23	170.65	209.05	99.960		1.07	144.17	154.53	99.971	
3	1.31	1334.11	1750.30	99.668		0.75	105.70	79.11	99.985	
4	1.86	94.98	176.55	99.967		1.60	75.21	120.04	99.977	
5	1.36	307.12	418.14	99.921		0.96	106.42	102.35	99.981	
6	3.84	1122.48	4311.86	99.182		2.16	139.47	300.85	99.943	
7	1.32	69.10	91.27	99.983	6.21	1.32	69.10	91.27	99.983	6.21
8	1.11	107.25	119.32	99.977	2.33	0.85	95.36	80.86	99.985	2.02
9	1.45	236.44	342.97	99.935		1.07	101.86	108.57	99.979	
10	0.95	122.79	116.53	99.978		0.77	100.38	77.12	99.985	
11	1.53	559.98	858.06	99.837	1.42	0.68	76.71	51.90	99.990	1.18
12	1.05	163.75	172.61	99.967		0.92	130.61	119.49	99.977	
13	0.99	248.01	245.82	99.953	3.86	0.70	88.17	62.15	99.988	2.85
14	1.65	312.22	516.36	99.902		0.91	74.70	67.87	99.987	
15	1.10	110.93	121.73	99.977	1.69	1.10	110.93	121.73	99.977	1.69
16	0.88	109.05	96.19	99.982		0.69	81.74	56.03	99.989	
17	1.52	413.00	629.40	99.881		0.82	93.00	76.20	99.986	
18	2.29	407.61	931.55	99.823	N/A	1.36	111.83	152.29	99.971	N/A
19	0.81	87.44	71.01	99.987	5.34	0.64	79.54	50.31	99.990	4.60
20										
21	0.99	143.37	141.65	99.973		0.95	135.04	127.97	99.976	
22	0.91	89.33	81.01	99.985		0.91	89.33	81.01	99.985	
23	1.04	214.51	223.58	99.958	0.35	0.82	123.85	101.30	99.981	0.31
24	1.08	122.10	131.34	99.975	1.08	0.97	99.70	96.74	99.982	1.07
25	1.00	121.40	121.90	99.977		0.89	95.40	85.30	99.984	
26	0.87	136.20	118.60	99.977	5.30	0.69	99.60	68.60	99.987	4.20
27	2.51	204.58	512.97	99.903		2.18	186.44	406.82	99.923	
28	1.50	302.59	453.33	99.914		1.25	238.11	298.07	99.943	
29	2.01	1550.43	3117.21	99.409		0.69	100.98	69.68	99.987	
30	2.79	1095.43	3056.00	99.420		1.49	159.29	237.50	99.955	
31	0.52	100.78	52.23	99.990	1.03	0.47	94.20	43.96	99.992	1.03
32	1.49	311.11	464.32	99.912		0.81	118.87	95.77	99.982	
33	1.06	209.50	222.01	99.958		0.86	150.65	130.20	99.975	
34	1.65	195.47	322.18	99.939		1.21	114.66	139.15	99.974	
35	1.55	135.51	210.13	99.960	1.63	1.37	102.53	140.97	99.973	1.53
36	1.70	281.95	479.42	99.909		0.94	92.32	87.18	99.983	
37	1.26	374.00	472.70	99.910		0.90	152.55	137.37	99.974	
38	1.35	378.56	510.31	99.903		1.03	188.31	194.69	99.963	
39	3.00	636.49	1910.17	99.638		1.96	162.18	317.97	99.940	
40	1.06	190.47	201.32	99.962	1.38	0.87	105.51	91.40	99.983	1.25
41	0.24	113.83	27.30	99.995		0.22	101.09	22.37	99.996	

Company Data For Reliability Indices										
ID #	Including All Interruptions					Excluding Major Events				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
42	1.84	775.76	1430.12	99.729		0.99	108.60	107.44	99.980	
43	0.88	109.05	96.19	99.982		0.69	81.74	56.03	99.989	
44	1.27	104.85	132.66	99.975	0.58	1.19	101.82	121.15	99.977	0.57
45	2.63	726.33	1910.46	99.638		2.00	198.11	396.83	99.925	
46	1.14	207.74	235.69	99.955		0.72	90.82	64.96	99.988	
47	1.42	109.49	155.78	99.970	1.88	1.26	95.29	120.16	99.977	1.78
48	1.16	133.13	154.68	99.971	4.14	0.94	78.40	73.39	99.986	3.80
49	1.43	178.15	254.61	99.952		1.24	134.61	166.82	99.968	
50	2.18	266.75	580.29	99.890		1.91	230.14	440.08	99.916	
51	1.03	123.97	127.61	99.976		0.92	99.35	91.89	99.983	
52	1.29	274.00	352.00	99.933	4.54	1.01	140.00	142.00	99.973	3.46
53	1.88	1034.26	1939.38	99.632		0.72	71.47	51.73	99.990	
54	1.04	133.93	138.63	99.974		0.85	97.88	83.29	99.984	
55	1.70	243.00	414.02	99.921		1.06	161.00	170.70	99.968	
56	0.94	111.00	104.00	99.980		0.94	111.00	104.00	99.980	
57	0.98	183.99	180.02	99.966		0.79	124.13	98.58	99.981	
58	0.86	180.60	155.00	99.971	1.48	0.71	121.20	86.10	99.984	1.29
59	1.27	203.01	258.28	99.951		1.07	150.08	161.04	99.969	
60	1.60	317.00	507.29	99.904	0.95	1.02	109.00	110.95	99.979	
61	1.58	344.80	543.15	99.897		0.97	117.43	114.16	99.978	
63	1.91	169.19	322.94	99.939		1.63	122.58	199.98	99.962	
66	1.65	239.69	395.00	99.925		1.14	127.76	145.50	99.972	
67										
68	1.54	103.08	159.06	99.970		1.28	88.03	112.60	99.979	
69	0.86	98.21	84.35	99.984	0.68	0.85	92.65	78.58	99.985	0.67
71	0.80	128.56	102.82	99.980		0.68	97.50	66.76	99.987	
74	2.15	118.49	255.13	99.952		0.51	62.18	31.80	99.994	
75	0.58	117.00	67.00	99.987		0.58	117.00	67.00	99.987	
76	1.19	315.82	374.61	99.929		0.94	175.80	164.45	99.969	
77	0.78	164.28	128.00	99.976	1.33	0.71	125.15	89.15	99.983	1.29
79	0.81	384.76	311.93	99.941		0.60	167.33	99.69	99.981	
80	0.93	106.63	98.59	99.981		0.91	107.89	97.64	99.981	
82	0.85	112.75	95.91	99.982		0.74	94.06	69.74	99.987	
83	1.84	256.25	472.50	99.910		1.46	114.51	167.61	99.968	
84										
86	2.74	801.62	2197.79	99.583		1.69	109.83	185.89	99.965	
89	1.13	145.97	165.53	99.969		1.03	117.35	120.23	99.977	
90	0.87	162.00	140.00	99.973		0.70	135.00	94.00	99.982	
92	2.84	90.46	256.75	99.951		1.27	50.94	64.90	99.988	
97	1.41	186.77	263.67	99.950		1.03	86.58	88.92	99.983	

Company Data For Reliability Indices (Distribution System)										
ID #	Including All Interruptions					Excluding Major Events				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
1	0.77	154.58	118.54	99.978		0.70	126.92	88.63	99.983	
2	1.00	152.52	153.07	99.971		0.88	139.19	122.94	99.977	
3	1.13	1458.41	1647.14	99.687		0.63	107.21	67.02	99.987	
4	1.86	94.98	176.55	99.967		1.60	75.21	120.04	99.977	
5	1.07	335.98	359.76	99.932		0.83	114.17	94.68	99.982	
6	3.76	1141.80	4295.84	99.185		1.97	146.00	287.77	99.945	
7										
8	0.80	118.26	94.94	99.982	0.50	0.70	101.84	71.20	99.986	0.44
9	1.19	264.51	313.52	99.941		0.86	107.41	92.24	99.982	
10	0.93	124.29	116.04	99.978		0.75	101.77	76.63	99.985	
11	1.53	559.98	858.06	99.837	1.42	0.68	76.71	51.90	99.990	1.18
12	0.97	168.19	163.08	99.969		0.84	132.12	111.07	99.979	
13	0.93	241.45	224.46	99.957	3.69	0.67	89.51	60.18	99.989	2.74
14	1.62	316.52	511.42	99.903		0.89	75.53	67.28	99.987	
15	0.65	118.27	77.04	99.985	0.64	0.65	118.27	77.04	99.985	0.64
16	0.73	121.69	88.64	99.983		0.60	87.35	51.98	99.990	
17	1.52	413.00	629.40	99.881		0.82	93.00	76.20	99.986	
18										
19	0.75	92.59	69.69	99.987	4.44	0.59	83.88	49.17	99.991	3.79
20	1.42	126.13	179.43	99.966	4.90	1.22	100.50	122.51	99.977	4.36
21	0.92	146.60	135.06	99.974		0.88	137.78	121.39	99.977	
22	0.23	129.21	29.05	99.994		0.23	129.21	29.05	99.994	
23	1.00	219.99	220.86	99.958	0.35	0.79	125.95	99.57	99.981	0.31
24	1.03	123.38	126.64	99.976	1.03	0.92	99.94	92.04	99.983	1.02
25	0.74	131.20	96.70	99.982		0.68	106.50	72.50	99.986	
26	0.75	153.40	114.30	99.978	5.00	0.57	114.30	65.10	99.988	3.90
27	1.97	201.24	395.54	99.925		1.77	182.55	323.58	99.939	
28	1.42	307.09	437.22	99.917		1.20	245.14	293.79	99.944	
29	1.99	1567.33	3115.77	99.409		0.67	102.32	68.58	99.987	
30	2.60	1132.66	2941.36	99.442		1.41	162.08	228.41	99.957	
31	0.47	102.23	48.46	99.991	1.00	0.43	98.56	42.63	99.992	1.00
32	1.49	311.11	464.32	99.912		0.81	118.87	95.77	99.982	
33	0.49	282.25	137.55	99.974		0.40	199.66	79.04	99.985	
34	1.59	199.74	317.89	99.940		1.17	116.42	135.85	99.974	
35	1.52	128.71	195.47	99.963	1.23	1.34	94.06	126.31	99.976	1.18
36	1.64	276.64	453.30	99.914		0.94	93.03	87.01	99.983	
37	1.26	374.00	472.70	99.910		0.90	152.55	137.37	99.974	
38	1.17	395.47	463.62	99.912		0.88	190.73	168.42	99.968	
39	2.50	720.98	1804.34	99.658		1.59	169.93	270.50	99.949	
40	1.04	190.39	198.93	99.962	1.32	0.85	104.69	89.42	99.983	1.19
41	0.24	113.83	27.30	99.995		0.22	101.09	22.37	99.996	

Company Data For Reliability Indices (Distribution System)										
ID #	Including All Interruptions					Excluding Major Events				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
42	1.76	808.42	1423.46	99.730		0.91	110.68	101.16	99.981	
43	0.73	121.69	88.64	99.983		0.60	87.35	51.98	99.990	
44	1.23	102.10	125.70	99.976	0.57	1.16	98.74	114.41	99.978	0.56
45	2.39	754.97	1804.91	99.658		1.80	201.15	361.89	99.931	
46	1.13	209.08	235.42	99.955		0.71	91.16	64.76	99.988	
47	1.33	114.17	152.41	99.971	1.00	1.17	99.55	116.96	99.978	0.92
48	1.13	134.32	152.42	99.971		0.91	79.13	72.10	99.986	
49	1.17	180.40	211.12	99.960		1.01	131.97	132.73	99.975	
50	1.95	278.41	542.12	99.897		1.70	238.68	406.84	99.923	
51	0.99	126.47	124.91	99.976		0.89	101.00	89.57	99.983	
52	1.13	292.00	329.00	99.938		0.87	146.00	127.00	99.976	
53	1.75	1106.81	1934.86	99.633		0.64	75.58	48.49	99.991	
54	0.99	137.32	135.50	99.974		0.82	98.97	80.67	99.985	
55	1.49	250.88	373.63	99.929		0.95	168.92	160.40	99.970	
56	0.90	111.00	100.00	99.981		0.90	111.00	100.00	99.981	
57	0.83	200.29	165.38	99.969		0.67	130.46	87.35	99.983	
58	0.83	181.90	150.90	99.971	1.46	0.68	124.30	85.00	99.984	1.27
59	1.13	201.87	227.38	99.957		0.96	150.64	144.46	99.973	
60	1.21	381.00	462.80	99.912		0.77	121.00	92.34	99.982	
61	1.37	362.98	498.58	99.905		0.85	128.01	109.10	99.979	
63	1.54	190.48	293.63	99.944		1.34	134.56	180.85	99.966	
66	1.48	247.58	367.53	99.930		1.04	134.76	140.62	99.973	
67										
68	0.91	126.21	114.90	99.978		0.73	102.87	75.05	99.986	
69	0.81	98.91	80.54	99.985	0.61	0.80	93.05	74.76	99.986	0.60
71	0.74	130.12	96.07	99.982		0.64	97.36	62.24	99.988	
74	2.15	118.53	255.02	99.952		0.51	62.17	31.70	99.994	
75	0.58	117.00	67.00	99.987		0.58	117.00	67.00	99.987	
76	0.99	334.78	331.75	99.937		0.76	178.23	134.64	99.974	
77	0.69	174.12	120.13	99.977	1.29	0.62	130.43	81.27	99.985	1.25
79	0.78	392.02	307.71	99.942		0.57	167.85	96.02	99.982	
80										
82	0.77	118.49	90.93	99.983		0.66	98.91	65.54	99.988	
83	1.16	117.36	135.67	99.974		1.48	281.88	417.95	99.921	
84	2.19	655.46	1434.38	99.728		1.03	116.89	120.44	99.977	
86	2.22	938.99	2080.98	99.605		1.31	124.20	163.15	99.969	
89	0.93	140.05	129.79	99.975		0.86	118.60	101.92	99.981	
90	0.84	161.05	134.79	99.974		0.66	132.00	88.00	99.983	
92	1.82	91.93	167.71	99.968		1.27	50.94	64.90	99.988	
97	0.98	201.02	196.65	99.963		0.80	87.27	69.42	99.987	

<b>Company Data For Reliability Indices (Transmission System)</b>										
ID #	Including All Interruptions					Excluding Major Events				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
1	0.146	104.52	15.27	99.997		0.13	98.12	13.16	99.998	
2	0.188	268.23	50.49	99.990		0.17	197.56	33.31	99.994	
3	0.183	565.10	103.16	99.980		0.12	98.14	12.09	99.998	
4										
5	0.291	200.82	58.38	99.989		0.13	57.85	7.66	99.999	
6	0.079	202.71	16.02	99.997		0.08	202.71	16.02	99.997	
7										
8	0.310	78.71	24.38	99.995	1.83	0.15	64.91	9.66	99.998	1.58
9	0.265	111.00	29.44	99.994		0.21	78.87	16.33	99.997	
10	0.015	32.16	0.49	100.000		0.02	32.16	0.49	100.000	
11	0.000	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
12	0.080	112.81	9.53	99.998		0.07	113.49	8.42	99.998	
13	0.032	555.82	17.79	99.997	0.00	0.01	55.16	0.43	100.000	0.00
14	0.038	129.67	4.93	99.999		0.02	33.13	0.59	100.000	
15	0.446	100.21	44.69	99.992	1.05	0.45	100.21	44.69	99.992	1.05
16	0.154	49.16	7.56	99.999		0.09	44.78	4.05	99.999	
17	0.000	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
18										
19	0.059	22.21	1.32	100.000	0.90	0.05	24.58	1.14	100.000	0.81
20										
21	0.067	98.76	6.58	99.999		0.07	98.80	6.58	99.999	
22	0.682	76.18	51.96	99.990		0.68	76.18	51.96	99.990	
23	0.038	70.99	2.72	99.999	0.00	0.03	63.28	1.73	100.000	0.00
24	0.049	95.33	4.70	99.999	0.05	0.05	95.33	4.70	99.999	0.05
25	0.263	96.00	25.20	99.995		0.21	60.10	12.80	99.998	
26	0.130	34.20	4.30	99.999	0.30	0.12	29.80	3.60	99.999	0.30
27	0.542	216.69	117.42	99.978		0.41	203.31	83.24	99.984	
28	0.074	216.57	16.11	99.997		0.05	80.22	4.28	99.999	
29	0.023	63.97	1.45	100.000		0.02	55.47	1.10	100.000	
30	0.193	594.30	114.64	99.978		0.08	111.19	9.09	99.998	
31	0.044	85.31	3.78	99.999	0.03	0.03	39.04	1.33	100.000	0.03
32										
33	0.078	65.70	5.09	99.999		0.08	65.70	5.09	99.999	
34	0.057	75.68	4.29	99.999		0.06	75.68	4.29	99.999	
35	0.032	457.65	14.66	99.997	0.39	0.03	457.65	14.66	99.997	0.36
36	0.062	422.72	26.12	99.995		0.01	18.55	0.17	100.000	
37										
38	0.176	265.73	46.69	99.991		0.15	174.17	26.27	99.995	
39	0.498	212.30	105.83	99.980		0.37	128.74	47.47	99.991	
40	0.012	197.46	2.39	100.000	0.06	0.01	163.29	1.98	100.000	0.06



<b>Company Data For Reliability Indices (Transmission System)</b>										
ID #	Including All Interruptions					Excluding Major Events				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
41	0.000	0.00	0.00	100.000		0.00	0.00	0.00	100.000	
42	0.120	1718.46	202.45	99.962		0.03	33.94	0.86	100.000	
43	0.154	49.16	7.56	99.999		0.09	44.78	4.05	99.999	
44	0.034	204.04	6.96	99.999	0.01	0.03	216.54	6.74	99.999	0.01
45	0.240	440.57	105.55	99.980		0.20	171.33	34.94	99.993	
46	0.009	31.48	0.27	100.000		0.01	42.19	0.21	100.000	
47	0.088	38.34	3.37	99.999	0.88	0.09	37.14	3.20	99.999	0.86
48	0.027	83.25	2.26	100.000		0.02	51.79	1.29	100.000	
49	0.259	168.00	43.49	99.992		0.23	145.99	34.09	99.994	
50	0.228	167.25	38.16	99.993		0.21	160.08	33.24	99.994	
51	0.042	64.81	2.70	99.999		0.04	60.91	2.32	100.000	
52										
53	0.127	39.44	4.53	99.999		0.08	35.58	3.24	99.999	
54	0.048	64.68	3.13	99.999		0.04	73.04	2.62	100.000	
55	0.211	191.33	40.39	99.992		0.11	92.75	10.30	99.998	
56	0.034	122.11	4.11	99.999		0.03	122.11	4.11	99.999	
57	0.153	95.89	14.64	99.997		0.12	90.14	11.23	99.998	
58	0.028	142.40	4.00	99.999	0.02	0.03	40.10	1.10	100.000	0.02
59	0.146	211.77	30.90	99.994		0.11	145.38	16.57	99.997	
60	0.385	115.00	44.49	99.992		0.25	74.00	18.61	99.996	
61	0.202	220.99	44.56	99.992		0.12	42.21	5.06	99.999	
63	0.367	79.82	29.31	99.994		0.29	66.55	19.13	99.996	
66	0.164	168.02	27.48	99.995		0.10	51.21	4.89	99.999	
67										
68	0.633	69.80	44.16	99.992		0.55	68.33	37.55	99.993	
69	0.045	85.48	3.82	99.999	0.07	0.04	85.48	3.82	99.999	0.07
71	0.062	109.77	6.75	99.999		0.05	99.48	4.52	99.999	
74	0.002	66.15	0.10	100.000		0.00	66.15	0.10	100.000	
75										
76	0.195	219.55	42.86	99.992		0.18	165.62	29.81	99.994	
77	0.089	88.23	7.87	99.999	0.04	0.09	88.23	7.87	99.999	0.04
79	0.026	163.66	4.22	99.999		0.02	154.86	3.67	99.999	
80										
82	0.083	59.85	4.98	99.999		0.08	53.29	4.20	99.999	
83	0.361	151.05	54.55	99.990		0.31	103.80	31.95	99.994	
84										
86	0.525	222.28	116.81	99.978		0.38	60.03	22.75	99.996	
89	0.207	172.46	35.74	99.993		0.17	110.85	18.31	99.997	
90	0.015	147.24	2.18	100.000		0.01	147.24	2.18	100.000	
92	1.013	87.91	89.04	99.983		-	-	-	-	

<b>Company Data For Reliability Indices (Transmission System)</b>										
<b>ID #</b>	<b>Including All Interruptions</b>					<b>Excluding Major Events</b>				
	<b>SAIFI</b>	<b>CAIDI</b>	<b>SAIDI</b>	<b>ASAI*</b>	<b>MAIFI</b>	<b>SAIFI</b>	<b>CAIDI</b>	<b>SAIDI</b>	<b>ASAI*</b>	<b>MAIFI</b>
97	0.434	154.60	67.02	99.987		0.23	84.19	19.50	99.996	

\*ASAI was calculated this year from the data provided.

ASAI =  $\frac{8760 - \text{SAIDI}}{8760}$  (24 Hours/day x 365 Days/Year = 8,760 Hours/Year)  
 (NOTE: SAIDI is in Hours or SAIDI(minutes)/60)

<b>Company Data For Three Year Averages of Reliability Indices (SAIFI)</b>					
<b>Three Year Average For the Period 2018-2020</b>			<b>Three Year Average For the Period 2018-2020</b>		
<b>ID #</b>	<b>SAIFI</b>		<b>ID #</b>	<b>SAIFI</b>	
	<b>Including All Interruptions</b>	<b>Excluding Major Events</b>		<b>Including All Interruptions</b>	<b>Excluding Major Events</b>
1	0.91	0.79	47	1.95	1.24
2	1.17	1.09	48	1.17	0.92
3	1.19	0.89	49	1.54	1.36
4	1.63	1.21	50	2.48	2.09
5	1.27	1.04	51	0.94	0.83
7	1.39	1.36	53	1.79	1.04
8	1.29	1.06	54	1.05	0.90
9	1.43	1.06	55	1.60	1.00
10	1.11	0.85	56	1.24	0.95
11	1.14	0.71	57	1.40	1.09
12	1.16	0.92	58	0.94	0.77
14	1.53	0.94	59	1.42	1.17
15	1.70	1.30	60	1.38	1.04
16	1.38	0.93	61	1.44	0.99
17	1.34	0.81	63	2.06	1.73
19	0.77	0.66	66	1.75	1.24
21	1.25	1.02	68	1.51	1.27
23	1.09	0.90	69	0.97	0.84
24	1.23	0.99	71	0.75	0.63
25	1.15	0.98	74	1.34	0.58
27	2.54	2.22	75	0.99	0.87
28	1.50	1.26	76	1.37	1.15
29	1.43	0.69	77	0.89	0.86
30	2.25	1.60	80	1.18	1.07
31	0.55	0.46	82	1.17	0.91
32	1.52	0.87	83	1.79	1.56
33	1.13	0.91	86	2.35	1.53
34	1.54	1.21	89	1.13	1.09
35	2.18	1.72	90	0.85	0.65
36	1.61	1.11	92	1.99	1.36
38	1.41	1.06	97	1.40	1.17
39	2.72	2.02			
40	0.99	0.82			
41	0.44	0.32			
42	1.62	1.08			
43	1.07	0.85			
44	1.56	1.54			
45	2.59	2.28			
46	1.31	0.76			

\*The Company IDs for the companies listed above correspond to the Company IDs in this report.

### Company Data For Three Year Averages of Reliability Indices (SAIDI)

Three Year Average For the Period 2018-2020			Three Year Average For the Period 2018-2020		
ID #	SAIDI		ID #	SAIDI	
	Including All Interruptions	Excluding Major Events		Including All Interruptions	Excluding Major Events
1	157.85	101.82	47	239.08	109.49
2	161.68	134.84	48	172.28	72.15
3	698.16	91.60	49	272.49	195.87
4	293.31	106.12	50	805.45	488.28
5	282.37	113.22	51	127.70	87.41
7	107.58	101.60	53	1,617.45	84.97
8	137.33	97.10	54	154.92	91.29
9	265.68	108.36	55	466.02	150.87
10	224.67	84.21	56	377.11	108.95
11	382.17	51.71	57	306.85	129.25
12	320.62	115.67	58	158.40	92.53
14	448.42	66.65	59	360.11	176.47
15	186.51	157.29	60	297.43	112.32
16	110.80	61.49	61	401.68	123.67
17	488.77	77.70	63	322.81	213.42
19	64.40	53.22	66	670.90	165.32
21	297.14	150.09	68	148.02	107.52
23	203.31	114.84	69	118.73	83.88
24	207.79	97.30	71	99.92	63.13
25	145.42	96.20	74	131.52	34.13
27	564.42	401.14	75	186.96	126.58
28	389.86	255.55	76	347.59	200.41
29	1,382.26	72.47	77	116.20	99.96
30	1,311.58	244.36	80	152.25	111.23
31	69.01	42.70	82	222.17	86.19
32	360.32	99.42	83	297.94	166.87
33	307.83	151.81	86	1,374.37	174.09
34	458.74	147.57	89	127.63	112.53
35	312.29	167.75	90	179.77	83.01
36	542.38	154.43	92	159.14	85.47
38	536.03	209.63	97	183.95	105.07
39	1,011.22	298.70			
40	172.04	84.47			
41	52.79	30.87			
42	807.95	116.32			
43	106.46	60.03			
44	161.23	157.39			
45	1,021.96	455.34			
46	492.97	73.44			

### Company Data For Percent of Customers Experiencing Multiple Interruptions (For All Interruptions)

Company ID #	0 Interruption	1 Interruption	2 Interruptions	3 Interruptions	4 Interruptions	5 Interruptions	6 or More Interruptions	IEEE 1366 Def. Used?	Sum of three or more interruptions	Sum of four or more interruptions	Sum of five or more interruptions
1	49.13	26.47	14.62	5.44	2.49	1.12	0.73	Yes	9.78	4.34	1.85
2	41.90	29.44	13.69	8.11	2.83	1.74	2.28	Yes	14.96	6.85	4.02
3	22.04	45.74	19.80	7.94	3.05	1.02	0.41	Yes	12.42	4.47	1.43
4	25.17	27.34	22.77	10.71	5.76	4.80	3.45	Yes	24.72	14.01	8.25
5	5.45	29.54	16.06	8.63	4.28	2.49	33.54	Yes	48.95	40.31	36.03
6	0.38	8.82	15.57	17.86	15.93	11.34	30.09	Yes	75.22	57.36	41.43
7	22.00	37.08	18.06	12.45	5.73	2.44	1.79	Yes	22.41	9.96	4.23
8								Yes			
9	49.86	24.51	14.35	6.50	2.66	1.22	0.90	Yes	11.28	4.78	2.12
10	49.72	29.91	11.65	5.19	2.06	0.78	0.70	Yes	8.73	3.54	1.47
11								Yes			
12	39.51	26.04	16.96	9.89	3.08	2.29	2.00	Yes	17.26	7.37	4.29
13	48.64	26.67	13.79	6.12	2.80	1.03	0.96	Yes	10.91	4.79	1.99
14								Yes			
15								Yes			
16								Yes			
17	37.40	27.28	15.78	9.18	4.68	2.80	2.89	Yes	19.55	10.37	5.69
18								No			
19								Yes			
20	0.79	73.69	14.97	6.23	3.12	0.26	0.93	Yes	10.54	4.31	1.19
21	57.94	22.77	10.65	4.31	2.65	0.93	0.74	Yes	8.63	4.32	1.67
22								No			
23	42.60	29.50	15.10	7.00	3.20	1.50	1.10	Yes	12.80	5.80	2.60
24	42.36	29.89	14.79	6.70	3.14	1.67	1.45	Yes	12.96	6.26	3.12
25	42.90	25.90	14.30	8.60	4.30	1.70	2.40	Yes	17.00	8.40	4.10
26	49.62	30.36	11.03	4.91	2.16	1.04	0.87	Yes	8.99	4.07	1.91
27	42.16	21.19	15.15	8.45	5.70	3.00	4.34	Yes	21.50	13.05	7.35
28								Yes			
29								Yes			
30	40.90	28.46	15.19	7.54	3.90	1.96	2.07	Yes	15.46	7.92	4.03
31	46.00	20.30	12.80	7.70	5.10	2.40	5.70	Yes	20.90	13.20	8.10
32							0.00	Yes			
33	18.74	10.15	8.54	6.45	4.61	3.26	48.26	Yes	62.57	56.12	51.51
34	29.53	27.83	19.17	10.64	5.46	3.17	4.20	Yes	23.48	12.84	7.38
35								Yes			
36								Yes			

### Company Data For Percent of Customers Experiencing Multiple Interruptions (For All Interruptions)

Company ID #	0 Interruption	1 Interruption	2 Interruptions	3 Interruptions	4 Interruptions	5 Interruptions	6 or More Interruptions	IEEE 1366 Def. Used?	Sum of three or more interruptions	Sum of four or more interruptions	Sum of five or more interruptions
37	33.49	32.47	18.25	9.69	3.80	1.20	1.10	Yes	15.79	6.10	2.30
38	36.47	28.85	16.52	8.93	4.59	2.32	2.33	Yes	18.17	9.23	4.65
39	15.33	19.75	16.88	13.42	9.66	7.86	17.11	Yes	48.04	34.62	24.97
40	43.47	29.40	15.80	6.80	2.60	1.30	1.10	Yes	11.80	5.00	2.40
41	79.92	16.86	2.68	0.44	0.05	0.05	0.00	Yes	0.54	0.10	0.05
42	24.81	28.27	20.22	11.90	7.07	2.79	4.94	Yes	26.70	14.80	7.73
43								Yes			
44	27.90	30.20	14.50	10.40	6.90	3.60	6.50	Yes	27.40	17.00	10.10
45	15.41	19.54	21.63	15.08	8.77	5.85	13.72	Yes	43.42	28.34	19.57
46								Yes			
47	34.73	26.99	17.20	9.68	5.39	2.81	3.19	Yes	21.09	11.40	6.01
48	14.64	47.19	22.78	9.33	3.67	1.84	0.54	Yes	15.38	6.05	2.39
49	31.19	29.10	17.39	10.64	5.82	2.58	3.27	Yes	22.31	11.67	5.85
50	24.22	22.89	17.51	11.73	7.95	5.01	10.70	Yes	35.38	23.65	15.70
51	43.05	30.04	15.34	6.78	3.08	1.24	0.47	Yes	11.57	4.79	1.71
52	37.52	29.85	16.57	7.84	4.10	1.97	2.15	Yes	16.06	8.22	4.12
53								Yes			
54	46.05	29.09	15.14	5.06	2.72	1.00	0.96	Yes	9.73	4.67	1.95
55								Yes			
56								Yes			
57	49.01	29.34	12.90	5.78	1.79	0.73	0.45	Yes	8.75	2.97	1.19
58	51.37	26.16	12.75	5.48	2.34	1.20	0.70	Yes	9.72	4.24	1.90
59	51.55	25.32	13.12	5.77	2.36	0.98	0.89	Yes	10.00	4.23	1.87
60	32.13	26.44	18.65	10.37	6.05	3.24	3.11	Yes	22.77	12.40	6.35
61	36.86	28.87	18.29	8.22	3.63	1.78	2.35	Yes	15.98	7.76	4.13
63	37.25	22.67	16.40	9.93	5.52	3.78	4.45	Yes	23.68	13.75	8.23
66	37.27	26.18	17.01	8.74	5.56	2.46	2.78	Yes	19.54	10.80	5.24
67	64.26	15.78	7.90	6.50	2.49	1.71	1.37	Yes	12.07	5.57	3.08
68								Yes			
69	21.58	43.57	14.92	8.80	5.25	1.76	4.12	Yes	19.93	11.13	5.88
71	58.88	25.09	11.53	3.16	0.95	0.17	0.22	Yes	4.49	1.33	0.38
74								Yes			
75	46.31	47.16	5.30	0.78	0.44	0.00	0.00	Yes	1.22	0.44	0.00
76	38.31	30.84	15.88	7.98	3.59	1.80	1.60	Yes	14.97	6.99	3.40
77	56.29	25.74	9.87	5.18	1.84	0.65	0.43	Yes	8.10	2.92	1.08
79	49.94	29.62	12.72	4.43	2.21	0.74	0.65	Yes	8.02	3.59	1.39

### Company Data For Percent of Customers Experiencing Multiple Interruptions (For All Interruptions)

Company ID #	0 Interruption	1 Interruption	2 Interruptions	3 Interruptions	4 Interruptions	5 Interruptions	6 or More Interruptions	IEEE 1366 Def. Used?	Sum of three or more interruptions	Sum of four or more interruptions	Sum of five or more interruptions
80								Yes			
82	67.28	21.81	7.40	2.28	0.68	0.28	0.25	Yes	3.49	1.21	0.53
83	21.37	25.49	21.84	14.02	8.43	4.40	4.45	Yes	31.30	17.28	8.85
84								Yes			
86	29.01	19.46	19.34	13.36	9.18	4.98	4.66	Yes	32.18	18.82	9.64
89								Yes			
90								Yes			
92	10.73	25.03	23.19	16.05	9.34	6.08	9.58	Yes	41.05	25.00	15.66
97	37.65	27.13	15.60	7.65	5.63	3.19	3.14	Yes	19.61	11.97	6.34

### Company Data For Percent of Customers Experiencing Multiple Interruptions (Excluding Major Events)

Company ID #	0 Interruption	1 Interruption	2 Interruptions	3 Interruptions	4 Interruptions	5 Interruptions	6 or More Interruptions	IEEE 1366 Def. Used?	Sum of three or more interruptions	Sum of four or more interruptions	Sum of five or more interruptions
1	0.51	0.26	0.14	0.05	0.02	0.01	0.00	Yes	0.08	0.03	0.01
2	0.46	0.30	0.12	0.07	0.02	0.02	0.02	Yes	0.12	0.06	0.03
3	0.50	0.29	0.12	0.05	0.02	0.01	0.00	Yes	0.09	0.04	0.01
4	0.37	0.24	0.19	0.09	0.05	0.05	0.01	Yes	0.20	0.11	0.06
5	0.46	0.30	0.15	0.05	0.02	0.01	0.01	Yes	0.09	0.05	0.03
6	0.22	0.26	0.21	0.13	0.07	0.05	0.06	Yes	0.31	0.18	0.11
7	0.22	0.37	0.18	0.12	0.06	0.02	0.02	Yes	0.22	0.10	0.04
8								Yes			
9	0.57	0.25	0.12	0.04	0.01	0.00	0.00	Yes	0.06	0.02	0.01
10	0.56	0.29	0.10	0.03	0.01	0.00	0.00	Yes	0.05	0.02	0.01
11								Yes			
12	0.43	0.28	0.14	0.08	0.03	0.02	0.01	Yes	0.14	0.06	0.03
13	0.58	0.19	0.12	0.06	0.03	0.01	0.01	Yes	0.11	0.05	0.02
14								Yes			
15								Yes			
16								Yes			
17	0.56	0.27	0.11	0.04	0.01	0.00	0.00	Yes	0.06	0.02	0.01
18								No			
19								Yes			
20	0.01	0.79	0.11	0.05	0.03	0.00	0.00	Yes	0.09	0.04	0.00
21	0.59	0.22	0.11	0.04	0.02	0.01	0.01	Yes	0.08	0.04	0.02
22								No	0.00	0.00	0.00
23	0.49	0.30	0.13	0.05	0.02	0.01	0.00	Yes	0.08	0.03	0.01
24	0.45	0.30	0.14	0.06	0.03	0.01	0.01	Yes	0.11	0.05	0.02
25	0.46	0.27	0.13	0.08	0.03	0.01	0.02	Yes	0.15	0.06	0.03
26	0.56	0.29	0.09	0.04	0.01	0.01	0.00	Yes	0.06	0.02	0.01
27	0.47	0.21	0.14	0.07	0.05	0.02	0.03	Yes	0.18	0.10	0.05
28								Yes			
29								Yes			
30	0.50	0.28	0.13	0.06	0.02	0.01	0.01	Yes	0.10	0.04	0.02
31	0.47	0.21	0.13	0.07	0.05	0.02	0.05	Yes	0.20	0.12	0.07
32								Yes			
33								Yes			
34	0.38	0.29	0.17	0.08	0.04	0.02	0.02	Yes	0.16	0.08	0.04
35								Yes			
36								Yes			



Company ID #	0 Interruption	1 Interruption	2 Interruptions	3 Interruptions	4 Interruptions	5 Interruptions	6 or More Interruptions	IEEE 1366 Def. Used?	Sum of three or more interruptions	Sum of four or more interruptions	Sum of five or more interruptions
37	0.45	0.33	0.14	0.06	0.02	0.01	0.00	Yes	0.08	0.03	0.01
38								Yes			
39	0.24	0.26	0.18	0.12	0.08	0.05	0.07	Yes	0.32	0.20	0.12
40	0.59	0.27	0.09	0.03	0.01	0.00	0.00	Yes	0.04	0.01	0.00
41	0.81	0.17	0.02	0.00	0.00	0.00	0.00	Yes	0.01	0.00	0.00
42	0.66	0.12	0.13	0.05	0.03	0.01	0.01	Yes	0.10	0.05	0.02
43								Yes			
44	0.29	0.32	0.13	0.11	0.07	0.04	0.06	Yes	0.27	0.16	0.09
45	0.24	0.25	0.20	0.12	0.07	0.04	0.07	Yes	0.30	0.18	0.11
46								Yes			
47	0.38	0.28	0.16	0.09	0.04	0.02	0.02	Yes	0.18	0.09	0.05
48	0.22	0.46	0.22	0.07	0.02	0.01	0.00	Yes	0.11	0.03	0.01
49	0.36	0.29	0.16	0.10	0.05	0.02	0.02	Yes	0.18	0.09	0.04
50	0.27	0.24	0.18	0.11	0.07	0.04	0.08	Yes	0.31	0.19	0.12
51	0.46	0.30	0.14	0.06	0.02	0.01	0.00	Yes	0.10	0.04	0.01
52	0.45	0.29	0.14	0.06	0.03	0.01	0.01	Yes	0.11	0.05	0.02
53								Yes			
54	0.49	0.30	0.13	0.05	0.02	0.01	0.00	Yes	0.08	0.03	0.01
55	0.45	0.30	0.15	0.06	0.02	0.01	0.01	Yes	0.11	0.04	0.02
56								Yes			
57	0.54	0.29	0.11	0.04	0.01	0.00	0.00	Yes	0.06	0.02	0.01
58	0.57	0.25	0.11	0.04	0.02	0.01	0.00	Yes	0.07	0.03	0.01
59	0.58	0.24	0.11	0.04	0.01	0.01	0.01	Yes	0.07	0.03	0.01
60	0.46	0.29	0.14	0.07	0.03	0.01	0.01	Yes	0.11	0.05	0.02
61	0.46	0.30	0.14	0.05	0.02	0.01	0.00	Yes	0.09	0.03	0.01
63	0.39	0.24	0.17	0.10	0.05	0.02	0.03	Yes	0.20	0.10	0.05
66	0.43	0.28	0.15	0.08	0.03	0.01	0.01	Yes	0.13	0.06	0.02
67	0.65	0.16	0.08	0.06	0.02	0.02	0.01	Yes	0.11	0.05	0.03
68								Yes			
69	0.24	0.44	0.15	0.09	0.03	0.02	0.04	Yes	0.17	0.09	0.05
71	0.62	0.24	0.11	0.02	0.01	0.00	0.00	Yes	0.03	0.01	0.00
74								Yes			
75	0.46	0.47	0.05	0.01	0.00	0.00	0.00	Yes	0.01	0.00	0.00
76	0.46	0.30	0.14	0.06	0.02	0.01	0.01	Yes	0.10	0.04	0.02
77	0.59	0.25	0.09	0.05	0.02	0.01	0.00	Yes	0.07	0.03	0.01
79	0.59	0.28	0.09	0.02	0.01	0.00	0.00	Yes	0.04	0.02	0.01
80								Yes			
82	0.71	0.20	0.06	0.02	0.01	0.00	0.00	Yes	0.03	0.01	0.00

Company ID #	0 Interruption	1 Interruption	2 Interruptions	3 Interruptions	4 Interruptions	5 Interruptions	6 or More Interruptions	IEEE 1366 Def. Used?	Sum of three or more interruptions	Sum of four or more interruptions	Sum of five or more interruptions
83	0.29	0.29	0.20	0.11	0.06	0.03	0.02	Yes	0.23	0.11	0.05
84								Yes			
86	0.38	0.26	0.17	0.10	0.05	0.02	0.01	Yes	0.19	0.09	0.04
89								Yes			
90								Yes			
92	0.34	0.26	0.17	0.10	0.06	0.03	0.03	Yes	0.23	0.13	0.07
97	0.45	0.29	0.14	0.06	0.03	0.02	0.01	Yes	0.12	0.06	0.03

**Company Outage Data (Interruption Data 1)**

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (For All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment- OH Equip- ment
1	84,809	20,229	26,865	6,598	3	30,726
2	103,044	54,998	77,766	19,784	14,844	68,186
3	231,299	67,584	117,057	33,809	375,400	148,120
4	67,160	8,138	26,765	199		16,551
5	9,595	37,953	35,120	30,285	11,155	128,386
6	297,634	35,023	24,600	64,546	60,159	100,009
7	5,804	2,565	3,240		32,935	33,745
8	52,787	4,473	19,694	13,051	15,818	44,980
9	414,382	170,833	102,780	64,044	2,381	183,818
10	312,747	59,521	99,392	44,203	45,622	74,046
11	1,983,276	146,099	149,799	118,697	48,525	382,166
12	114,134	42,901	60,584	16,095	56,555	81,626
13	605,766	105,117	222,837	91,042	248,896	213,346
14	416,212	32,913	58,210	35,427	0	74,792
15	41,432	182	13,244	1,588	5,300	9,705
16						
17	1,407,068	42,618	109,443	52,370	9,317	192,693
18	2,777,351	268,398	414,214	125,294	N/A	142,205
19	526,066	204,049	251,822	93,324	404,686	871,767
20	22,589	23,154	12,712	4,938	56,567	20,191
21	130,368	27,462	19,078	8,701	14,335	54,636
22						
23	147,051	73,989	60,438	40,262	208,143	235,663
24	258,685	209,594	160,637	73,736	137,553	349,382
25	25,383	9,779	10,757	4,850	25,300	26,439
26	84,330	53,798	124,780	48,384	603,247	62,337
27	292,119	27,086	37,549	4,071	14,953	101,439
28	1,024,957	86,310	148,356	50,169	509	331,605
29	1,924,698	93,032	117,485	34,773	159	23,739
30	952,032	188,930	420,970	602,843	3,212,132	1,017,218
31	10,629	14,504	104,083	181	26,332	63,393
32	565,478	26,960	53,538	8,933	5,885	42,877
33	183,906	66,094	653,193	132,250	161,815	159,350
34	1,951,772	132,112	357,959	162,656	224,779	609,157
35	43,694	23	8,608	2	14,301	18,863
36	1,024,957	140,901	148,356	50,169	509	331,605

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (For All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
37	232,558	31,694	76,429	13,116	53,519	66,557
38	930,975	91,078	150,240	31,237	291,965	475,106
39	504,771	35,035	179,268	203,788	197,618	51,529
40	323,679	1,182,050	2,309,732	48,191	256,228	900,383
41	13,106	4,137	4,929	1,365		2,795
42	339,191	17,859	35,841	1,506		42,950
43						
44	21,667	56,094	76,047	3,679	29,281	77,160
45	169,842	7,974	18,125	1,834	51,324	61,223
46	714,795	100,847	79,366	37,737	942	84,844
47	506,328	272,607	400,510	657,478	194,324	834,530
48	150,661	25,301	41,331	45,551	29,068	71,414
49	417,045	98,673	247,641	35,530	126,320	362,341
50	884,370	53,752	180,258	34,190	146,860	399,169
51	300,886	147,643	197,388	28,828	5,217	281,029
52	559,643	112,465	108,231	55,243	401,303	425,327
53	170,560	20,402	31,018	17,456	393,128	65,625
54	189,518	60,142	232,291	20,598	14,218	199,035
55	1,209,262	69,636	130,621	23,411	674	105,314
56	138,800	14,075	28,270	19,993	21,231	99,552
57	67,774	12,045	10,308	4,031	23	16,525
58	214,630	52,015	104,435	45,851	8,274	419,673
59	302,741	28,853	65,797	5,704	16,029	96,174
60	341,221	87,275	255,920	23,809	563,450	232,151
61	267,387	54,338	36,279	3,661	41,796	240,039
63	232,216	40,426	30,689	31,005	14,712	177,859
66	307,564	40,285	41,647	18,221	9,537	184,278
67	6,274	11,792	43,809	2,196	38,913	44,175
68	8,542	3,267	1,612	2,537	1,214	13,685
69	14,735	88,428	233,142	24,568	443,741	0
71	46,283	9,634	31,413	10,389	6,538	36,077
74						
75	14,226	3,648	2,652	1,122	62	2,685
76	184,435	28,916	99,432	11,464	39,135	106,268
77	73,437	41,479	75,130	19,360	0	49,874
79	264,671	43,252	59,791	4,519	128,470	102,509
80	12,784	38,578	26,751	12,841	15,697	40,781
82	127,836	37,997	57,470	31,157	101,543	116,101

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (For All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
83	180,263	23,271	150,283	225,021	352,924	209,718
84	558,339	109,377	114,034	188,115	603,913	190,467
86	496,590	133,570	105,793	48,901	329,106	368,869
89	28,479	35,272	22,658	5,790	13,305	66,409
90	380,742	43,103	108,709	46,475	7,590	158,835
92	49,029	9,477	3,870	65		8,764
97	27,040	33,454	60,771	55,919	102,424	79,312

**Company Outage Data (Interruption Data 1) Continued**

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (For All Interruptions)						
	Equipment- OH Conductor	Equipment- UG Equipment	Equipment- UG Cable	Power Supply	Planned	Unknown	Others
1	3,589	480	8,969	4,093	4,039	16,886	29,688
2	31,131	3,518	11,168	186,687	32,247	61,081	38,069
3				139,205	80,302	56,146	11,883
4	6,628	226	251		3,232	5,952	10,566
5	45,853	391	2,429	30,301	8,627	132,391	33,337
6	0	2,319	0	0	0	473,678	49,337
7	7,154		3,375		12,013	24,297	
8	8,346	19,428	49,666	20,057	10,256	27,418	74,894
9	117,050	3,101	23,425	277,623	16,943	45,372	96,334
10	144,134	13,975	176,706	0	102,628	99,846	77,607
11	138,260	26,944	112,145	278,383		194,040	145,470
12	17,918	4,299	21,494	0	97,535	36,953	27,192
13	70,951	37,541	52,761	11,664	42,390	133,384	131,633
14	158	220	18,183	18,958	76,302	51,272	41,215
15	10,366	220	1,400	62,686	1,677	3,388	6,776
16							
17	195,895	17,740	126,817	68,361	203,096	78,680	46,045
18	131,929	5,370	57,465	27,298	85,701	391,339	519
19	282,173	284,053	278,362	65,279	206,335	224,949	496,205
20	7,280	900	6,711	2,707	10,485	18,490	16,434
21	26,864	1,788	18,621	27,941	15,533	31,395	37,307
22							
23	219,134	11,611	43,734	38,018	194,399	15,828	13,738
24	69,296	37,156	104,627	1,686	66,612	154,364	103,914
25	18,370	257	2,912	4,953	0	11,166	11,046
26	59,271	2,426	14,921	44,128	39,828	26,198	88,775
27	40,361	301	2,211	211,539	100,566	88,227	58,401
28	77,944	2,675	34,453	123,709	281,518	270,740	58,831
29	125,464	12,640	37,841		74,347	37,128	94,524
30	406,499	57,274	58,712	580,441	319,125	338,459	215,015
31	27,606	61,015	62,845	45,394	35,306	35,146	45,162
32	2,935	6,521	244		65,105	9,890	10,233
33	25,726	6,114	42,621				142,552
34	104,707	116,233	80,691	60,390	78,086	218,881	294,293
35	4,509	284	11,891	25,549	1,553	4,155	5,326
36	77,944	2,675	34,453	123,709	281,518	270,740	58,831

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (For All Interruptions)						
	Equipment- OH Conduc- tor	Equipment- UG Equip- ment	Equipment- UG Cable	Power Supply	Planned	Unknown	Others
37	11,221	7,423	7,220	26,225	41,870	43,534	32,586
38				69,219	133,422	149,068	163,427
39	8,610	1,850	7,516	271,095	49,314	19,264	102,504
40	538,273	656,311	966,567	269,196	1,002,353	2,691,238	671,486
41	2,527	315	4,007	3,206		204	1,277
42	59,086	4,158	4,744		12,812	22,376	2,739
43							
44	15,424	15,745	21,736	11,702	49,409	76,815	20,922
45	14,037	85	180	39,550	31,141	28,683	10,203
46	93,522	25,112	85,072		174,330	19,926	224,290
47	240,742	30,580	215,161	215,112	238,438	428,576	1,022,705
48	1,526	2,283	11,830	40,026	9,506	111,757	49,507
49	68,657	5,681	36,716	388,160	118,438	167,744	69,981
50	39,281	1,543	11,932	240,033	181,504	88,354	27,252
51	34,231	76,172	164,359	12,161	120,509	129,164	31,985
52	135,152	63,072	20,901		189,892	197,635	564,834
53	13,257	1,996	7,324	0	20,920	38,778	107,792
54	91,456	131,604	237,201	20,134	29,532	159,128	107,743
55	87,584	61,976	55,240	40,037	43,952	125,407	54,378
56				15,240	33,921	28,849	2,743
57	10,069	208	2,041	25,238	1,754	4,619	7,026
58	235	56,152	2	35,163	38,724	55,905	38,905
59	47,793	4,510	15,239	105,192	90,380	80,226	58,494
60	49,289	60,808	85,380	908,711	232,284	179,779	168,310
61	140,226	4,276	57,273	148,241	4,350	72,845	87,501
63	69,960	4,160	11,641	212,877	92,977	85,815	102,190
66	29,699	3,807	6,039	93,195	24,983	76,592	103,378
67	6,967	15,287	32,281	66,485	6,305	22,001	15,891
68	421	0	99	34,374	11,328	4,168	1,725
69	0	0	90,145	129,551	69,455	404,572	474,711
71	19,176	796	6,569	18,312	175	24,143	34,402
74							
75				0	Not Tracked	592	10,788
76	17,383	571	7,736	116,958	37,082	16,704	44,602
77	30,055	7,562	35,164	29,476	0	32,645	23,903
79	5,423	11,261	21,615	23,225	41,881	33,897	31,609
80	5,174	7	3,708			15,697	7,648
82	32,951	4,685	5,526	82,900	52,990	185,898	11,855

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (For All Interruptions)						
	Equipment- OH Conductor	Equipment- UG Equip- ment	Equipment- UG Cable	Power Supply	Planned	Unknown	Others
83	120,266	5,087	12,140	384,552	79,766	88,452	131,735
84		19,502			511,135	293,188	71,192
86		18,791	16,936	587,178	4,331	434,073	271,537
89	37,533	283	3,051	74,739	40,701	44,588	21,484
90	28,729	12,027	67,887	16,864	25,591	67,257	24,035
92	1,587	2	2,325		1,641	7,586	1,219
97	24,302	5,270	16,219	242,685	19,559	82,220	41,142



## Company Outage Minutes (Interruption Data 1)

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (For All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
1	18,045,526	2,379,103	2,607,789	1,166,854	346	3,809,898
2	21,384,296	5,424,877	10,324,618	2,042,145	3,963,176	10,724,489
3	75,270,365	4,310,832	45,178,971	13,505,954	1,416,872,057	51,114,132
4	8,280,283	370,636	1,914,318	54,652		1,749,202
5	3,133,621	2,867,822	5,834,967	4,287,348	13,563,958	73,455,729
6	155,498,941	3,183,724	3,964,272	12,691,105	101,013,301	22,862,797
7	587,292	259,501	327,791	3,332,542	3,332,542	3,414,489
8	6,287,014	286,268	2,396,395	744,994	1,440,594	5,525,555
9	204,103,280	13,604,918	13,244,150	10,097,163	1,706,057	38,764,741
10	53,519,452	3,721,541	9,735,382	7,081,403	9,840,771	6,434,119
11	1,745,100,407	8,061,001	10,797,362	41,898,584	48,335,917	66,605,576
12	24,925,643	3,609,866	9,465,954	2,993,743	23,445,865	11,797,769
13	185,144,336	7,185,145	20,680,017	18,986,661	147,979,634	20,038,922
14	191,801,933	2,064,478	3,731,253	4,333,027	0	17,489,642
15	5,157,836	16,338	1,225,928	100,324	1,171,231	1,457,670
16						
17	818,495,626	2,927,995	8,761,891	22,886,412	15,243,473	27,739,683
18	1,647,996,180	28,926,600	77,099,880	19,155,180	N/A	13,864,680
19	69,504,594	11,871,049	18,340,347	8,912,296	57,874,818	53,056,764
20	4,303,567	1,376,527	1,247,940	902,922	11,046,567	1,921,778
21	26,691,332	2,776,759	2,180,888	942,786	2,768,259	6,299,290
22						
23	27,711,352	7,271,404	9,681,021	7,342,830	138,036,109	22,285,997
24	48,058,320	14,685,941	14,479,542	8,869,776	36,611,583	35,299,372
25	3,662,191	637,908	901,546	514,309	5,988,259	1,711,893
26	10,178,704	3,142,440	10,757,471	1,816,649	118,525,919	4,958,321
27	81,311,538	2,631,388	5,922,639	624,267	5,187,088	15,535,189
28	513,169,764	7,410,179	17,972,108	8,168,689	284,714	55,161,539
29	3,845,126,889	8,607,283	21,780,034	20,925,235	74,664	15,254,345
30	426,209,723	27,340,186	89,432,845	166,044,302	7,575,485,652	270,627,356
31	1,257,439	874,145	11,351,017	15,827	2,046,056	5,828,222
32	217,581,807	2,173,294	7,214,110	1,063,654	4,543,780	5,388,591
33	56,497,563	6,052,633	7,084,647	30,234,946	53,701,841	24,146,134
34	464,459,547	7,877,656	45,146,790	31,103,266	105,335,302	79,449,723
35	4,235,561	2,396	941,223	142	5,483,946	2,401,961
36	513,169,764	8,441,773	17,972,108	8,168,689	284,714	55,161,539

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (For All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
37	138,634,728	3,500,326	13,418,716	4,346,945	26,807,151	9,940,122
38	494,290,436	14,303,569	28,036,032	6,729,529	217,655,630	106,777,443
39	214,166,948	2,725,136	347,387,885	55,945,502	320,992,302	8,604,885
40	26,140,288	13,697,422	175,993,121	3,480,042	88,240,358	96,452,289
41	1,369,449	496,339	476,074	257,489		347,765
42	267,560,069	2,019,266	2,737,335	289,704		7,925,677
43						
44	2,038,913	4,534,096	8,490,878	380,521	4,382,487	6,809,433
45	129,004,211	833,977	3,224,940	353,509	140,509,442	11,058,859
46	254,270,962	7,285,257	7,579,368	3,496,763	151,376	9,480,876
47	110,862,227	20,763,557	37,884,971	76,981,183	28,493,916	108,736,529
48	37,886,203	1,850,122	2,360,465	5,780,430	4,975,093	7,145,899
49	135,236,911	7,531,933	33,416,405	7,333,293	36,989,298	44,394,095
50	326,868,230	6,803,863	37,052,950	7,541,841	58,947,857	68,591,271
51	68,163,425	9,932,029	20,212,473	5,018,284	1,330,098	30,209,886
52	231,061,237	11,871,651	17,299,685	17,472,947	244,523,118	70,807,331
53	40,288,167	1,246,539	3,753,941	1,148,969	738,236,127	4,157,639
54	49,228,019	5,097,411	28,209,949	2,833,060	3,069,463	32,082,339
55	340,363,045	6,968,182	38,602,922	2,810,655	296,820	19,771,700
56	16,659,715	1,061,475	3,414,339	2,494,781	2,474,484	10,656,311
57	19,540,781	1,028,933	1,451,161	578,228	15,525	1,899,647
58	76,890,332	4,197,890	15,711,957	8,280,413	1,850,829	60,525,049
59	97,758,276	2,500,517	8,343,169	811,143	4,261,469	13,397,553
60	180,496,722	8,249,075	34,855,330	4,735,970	494,354,365	43,582,681
61	150,293,315	4,324,597	5,305,702	1,535,288	31,319,794	70,190,388
63	84,369,183	4,050,900	4,844,263	5,070,704	6,911,016	20,603,261
66	121,554,334	4,265,736	5,919,327	6,825,326	4,385,616	27,452,196
67	474,479	481,774	3,290,923	116,276	6,101,718	3,673,480
68	1,333,735	170,438	260,006	199,973	391,033	1,883,183
69	1,071,896	3,494,172	11,287,543	1,053,023	29,300,988	0
71	10,589,078	734,962	3,520,285	1,256,497	2,437,044	4,209,356
74						
75	3,011,071	181,360	212,791	207,439	10,238	397,012
76	103,491,133	3,086,820	17,474,058	4,507,404	32,917,518	17,540,139
77	22,025,113	5,084,301	5,977,610	2,515,457	0	8,438,474
79	83,250,490	5,149,282	21,066,948	1,236,759	118,290,841	18,656,636
80	2,161,795	2,745,411	2,728,813	1,229,013	2,284,463	5,276,812
82	24,002,593	2,592,664	6,952,268	3,420,599	20,995,707	8,920,875

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (For All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
83	42,996,907	1,818,510	17,036,422	50,658,430	249,472,669	30,770,749
84	103,070,834	6,982,649	21,730,103	30,310,429	1,851,571,038	30,526,167
86	652,133,512	16,230,069	15,736,084	11,799,313	781,785,001	154,297,210
89	4,893,466	3,283,802	3,168,052	704,442	4,835,532	9,136,560
90	76,051,186	4,063,234	13,052,193	8,474,374	2,223,348	24,386,620
92	5,716,048	310,621	203,579	1,095		358,993
97	6,404,916	2,091,071	5,644,753	8,940,895	65,670,791	7,777,333

**Company Outage Minutes (Interruption Data 1) Continued**

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (For All Interruptions)						
	Equipment- OH Conductor	Equipment- UG Equip- ment	Equipment- UG Cable	Power Supply	Planned	Unknown	Others
1	588,219	155,529	1,332,063	338,229	302,472	2,010,716	1,991,140
2	5,586,854	498,664	1,978,659	37,648,371	6,343,646	6,973,192	7,095,317
3				57,968,964	8,413,543	8,662,704	1,676,646
4	399,070	34,291	59,507		140,475	533,614	299,543
5	14,416,243	63,825	707,150	2,956,513	855,339	29,471,567	3,757,929
6	0	404,186	0	0	0	896,397,263	47,185,720
7	723,872		341,449		1,215,558	2,458,432	
8	1,595,574	1,673,905	6,368,422	223,338	2,305,329	1,993,457	5,932,771
9	26,695,928	647,556	4,381,147	30,808,368	818,719	4,554,054	9,507,218
10	11,761,965	1,912,534	18,110,852	0	20,360,444	5,987,527	5,078,450
11	20,567,055	5,632,186	25,060,015	79,692,015		22,138,138	11,368,169
12	2,589,754	1,076,976	4,326,740	0	7,325,911	4,252,087	1,293,134
13	6,905,927	5,692,374	7,626,280	1,435,458	4,641,769	22,208,944	39,398,192
14	70,272	38,211	1,882,465	2,458,275	6,421,060	20,802,654	6,135,332
15	251,982	29,697	173,732	610,645	413,480	372,460	198,658
16							
17	46,603,690	3,846,403	18,188,379	5,502,242	30,720,935	45,829,948	5,944,500
18	59,344,020	819,240	9,545,940	2,196,540	7,964,760	134,558,580	748,920
19	27,625,194	31,544,459	22,123,322	914,695	16,927,786	14,945,625	32,645,550
20	529,660	135,027	876,872	105,736	601,734	1,502,736	1,076,159
21	3,638,621	280,829	3,046,151	2,758,835	2,666,985	3,230,181	2,079,796
22							
23	34,523,617	1,763,361	8,596,076	2,489,588	17,578,025	1,363,824	644,099
24	7,941,898	3,766,412	10,196,321	128,656	7,972,867	12,323,152	10,558,626
25	1,471,653	41,087	551,803	671,637	0	1,279,429	1,001,150
26	8,220,703	622,167	2,270,320	1,113,255	4,079,255	1,421,152	3,430,997
27	7,430,036	79,535	618,865	45,838,725	18,344,986	11,446,550	5,278,713
28	11,528,709	650,146	6,857,310	26,791,463	28,374,074	67,847,709	9,778,538
29	15,710,889	3,312,092	16,441,018		5,621,527	21,839,243	18,944,329
30	99,676,708	10,151,712	15,226,805	344,275,362	45,588,684	59,563,216	38,756,944
31	3,288,377	6,286,727	8,052,815	3,872,609	3,509,665	3,056,449	4,136,312
32	417,774	1,053,634	29,013		5,516,685	1,642,582	1,830,737
33	3,526,041	1,224,802	7,092,088				10,351,586
34	11,325,466	18,010,562	16,998,643	3,993,034	8,487,063	36,984,113	29,644,227
35	268,866	68,045	1,062,866	1,858,933	197,927	284,495	393,279
36	11,528,709	650,146	6,857,310	26,791,463	28,374,074	67,847,709	9,778,538

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (For All Interruptions)						
	Equipment-OH Conductor	Equipment-UG Equipment	Equipment-UG Cable	Power Supply	Planned	Unknown	Others
37	1,633,373	1,478,409	2,088,166	3,931,646	4,679,233	14,233,887	5,164,485
38				9,888,804	17,875,725	27,607,048	17,845,182
39	1,789,183	548,293	1,182,992	57,554,555	6,713,604	1,552,235	19,697,645
40	456,710	58,236,985	70,482,881	3,627,230	297,062,483	210,911,622	292,955,480
41	645,317	38,489	432,708	198,856		23,652	24,242
42	16,161,580	1,522,443	1,249,310		946,050	9,406,985	3,303,315
43							
44	2,413,412	2,205,016	3,289,666	2,533,991	4,425,364	7,118,341	1,253,860
45	2,816,712	20,154	51,941	17,424,667	4,681,891	4,151,755	1,241,514
46	9,927,185	3,644,161	13,389,036		15,933,441	2,739,528	12,960,988
47	39,063,859	3,635,482	28,285,105	8,052,382	14,638,207	26,974,474	71,203,047
48	32,184	349,444	1,677,546	1,884,056	1,257,286	10,393,349	2,958,856
49	12,043,941	1,361,642	7,095,880	65,210,642	10,773,983	12,747,933	7,635,531
50	8,219,147	645,213	3,801,504	40,145,298	33,517,828	14,708,222	3,608,987
51	4,859,727	5,649,865	21,295,586	357,264	7,410,102	12,111,140	3,093,497
52	21,398,241	12,270,506	5,031,180		10,230,903	30,262,062	102,922,846
53	1,044,081	580,161	989,819	0	910,010	3,470,792	122,724,175
54	18,006,541	10,120,318	25,406,547	1,540,355	4,666,004	11,667,558	7,984,641
55	16,627,401	10,227,381	12,070,647	2,838,135	10,472,577	22,323,900	5,425,137
56				1,860,979	3,079,277	3,394,776	109,651
57	1,591,036	41,079	257,362	2,419,341	168,522	427,857	325,052
58	38,272	7,571,274	276	5,008,886	4,026,529	6,741,911	2,351,836
59	7,484,907	939,456	3,423,527	22,277,540	8,776,100	10,924,478	5,287,452
60	9,283,475	12,829,616	18,321,644	103,396,456	23,015,256	18,227,881	56,288,235
61	53,216,656	1,764,579	10,969,357	32,760,704	634,118	26,518,925	10,519,378
63	8,818,234	1,023,398	2,629,901	16,992,458	16,112,497	6,792,071	8,999,000
66	8,310,988	1,313,065	1,970,920	15,658,785	2,696,097	16,334,582	8,434,892
67	458,210	823,584	3,222,382	4,507,793	573,267	1,539,651	973,085
68	72,498	0	17,199	2,457,578	1,350,902	505,421	190,019
69	0	0	8,052,262	6,769,698	7,302,112	12,318,497	28,516,896
71	1,912,284	187,264	1,002,446	1,997,900	21,356	1,960,141	1,523,662
74							
75				0		70,479	100,577
76	4,094,720	231,730	2,055,475	25,678,529	3,993,942	2,581,080	6,796,092
77	6,934,429	1,366,607	6,480,691	3,077,437	0	3,941,479	2,508,802
79	4,160,736	1,962,225	5,401,314	3,801,007	84,318,839	9,864,307	8,128,039
80	486,419	923	738,581			1,149,172	382,144
82	3,039,878	819,741	998,363	4,966,222	5,170,148	13,417,154	407,385

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (For All Interruptions)						
	Equipment-OH Conductor	Equipment-UG Equipment	Equipment-UG Cable	Power Supply	Planned	Unknown	Others
83	18,850,435	1,201,711	2,750,361	58,087,353	9,964,625	5,499,647	14,040,846
84		2,737,891			92,752,208	53,765,944	9,635,809
86	105,994,846	5,381,988	16,159,225	117,843,917	511,017	504,548,520	88,823,949
89	6,894,216	102,670	763,140	13,313,016	5,056,398	6,055,522	3,387,437
90	3,417,456	1,684,340	9,194,198	2,483,059	4,957,237	7,622,219	2,411,631
92	100,659	122	315,755		94,226	567,556	74,370
97	3,476,648	749,244	1,716,340	37,519,915	1,831,133	3,320,799	2,461,239

## Company Outage Data (Interruption Data 1) Excluding Major Events

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (Excluding Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Light- ning)	Equipment- OH Equip- ment
1	68,602	20,216	26,865	5,759	3	30,469
2	61,040	54,751	75,814	10,422	14,812	64,585
3	142,187	66,154	99,977	18,950	25,789	131,854
4	47,774	8,138	26,765	199		16,087
5	4,134	37,624	31,033	28,776	310	91,545
6	192,980	33,599	23,537	51,944	10,553	90,240
7	5,804	2,565	3,240	32,935	32,935	33,745
8	36,482	4,460	19,599	13,051	6,543	36,541
9	189,207	167,158	97,899	49,099	331	145,120
10	216,790	59,067	98,503	17,705	6,731	69,342
11	357,220	140,966	141,149	82,769	3,139	313,209
12	87,264	42,873	59,846	15,810	24,028	76,828
13	345,724	104,839	212,608	69,011	70,927	197,794
14	153,993	30,803	55,328	24,658	0	54,530
15	41,432	182	13,244	1,588	5,300	9,705
16						
17	407,991	40,414	107,623	20,824	232	168,033
18	1,192,776	256,789	366,996	101,162	N/A	116,553
19	382,460	190,157	228,939	78,318	143,998	719,570
20	15,456	23,154	12,712	4,544	35,136	20,190
21	121,224	27,460	19,070	8,695	9,353	52,795
22						
23	127,057	71,937	58,452	20,036	21,474	233,037
24	193,866	208,909	159,308	61,197	67,054	341,265
25	23,402	9,831	10,814	4,848	15,550	26,495
26	76,989	51,771	122,576	46,394	363,391	60,968
27	243,009	27,030	37,059	3,491	8,642	97,937
28	776,567	84,508	143,353	32,387	277	311,715
29	339,725	91,326	106,166	22,111	67	18,450
30	620,613	179,863	397,649	418,130	531,091	877,309
31	8,715	14,499	101,340	181	16,699	58,243
32	229,313	26,815	49,168	8,902	404	32,585
33	120,415	65,787	180,111	99,538	104,139	151,685
34	219,223	87,059	347,431	115,490	65,667	17,070
35	43,447	23	8,604	2	2,045	18,863
36	399,885	137,538	118,586	31,628	3,447	139,996

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (Excluding Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment- OH Equipment
37	111,375	31,327	73,202	11,242	28,179	65,647
38	588,324	87,770	148,686	26,874	126,141	441,670
39	305,613	31,436	120,120	143,555	49,817	49,014
40	255,582	1,140,438	2,195,951	29,556	158,460	728,023
41	12,667	4,137	4,929	1,354		2,769
42	116,909	17,647	35,609	1,493		37,869
43						
44	20,356	56,090	74,871	3,679	15,965	69,825
45	118,705	7,945	17,769	1,665	13,933	56,077
46	210,962	97,422	74,260	35,365	318	69,072
47	407,629	266,770	396,108	498,549	122,853	780,845
48	83,150	25,130	41,326	32,967	10,453	67,642
49	289,045	95,415	241,359	25,652	69,154	339,807
50	731,455	53,507	177,912	29,358	89,569	376,666
51	193,632	147,307	180,985	21,733	5,215	270,629
52	396,808	107,709	107,038	33,216	134,926	392,696
53	78,981	19,170	28,846	15,653	33,844	59,996
54	72,484	59,520	217,033	15,219	11,285	149,823
55	540,048	67,861	124,779	19,147	336	91,677
56	138,800	14,075	28,270	19,993	21,231	99,552
57	44,969	12,022	10,292	3,638	23	14,905
58	123,142	51,496	102,365	24,895	8,274	372,136
59	222,308	28,542	65,734	4,911	5,905	92,174
60	157,697	83,350	242,154	18,214	92,718	205,308
61	125,779	54,106	35,076	2,835	413	127,907
63	156,878	39,410	30,002	23,700	5,805	166,154
66	155,431	39,785	41,047	10,517	2,800	150,374
67	6,274	11,792	43,809	2,196	23,614	44,148
68	4,526	3,267	1,612	2,377	290	9,172
69	14,735	88,428	230,831	24,568	410,383	0
71	27,834	9,584	31,402	10,318	696	32,453
74						
75	13,605	3,648	2,652	241	62	2,642
76	95,157	28,537	95,687	10,631	11,673	96,521
77	62,789	41,479	73,869	18,318	0	40,550
79	214,087	42,935	54,431	4,517	15,603	90,672
80	12,784	38,578	26,750	12,841	15,697	40,781
82	110,583	37,762	56,428	23,448	57,035	103,775



Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (Excluding Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
83	146,340	21,141	146,222	176,481	127,231	197,166
84	394,274	75,486	106,911	118,859	77,463	163,777
86	216,787	132,944	101,195	44,501	21,811	297,414
89	25,430	35,251	22,653	5,788	7,844	63,049
90	341,706	37,146	96,022	38,003	7,455	142,810
92	8,064	9,448	3,870	21		8,609
97	21,767	33,010	60,333	41,339	30,987	75,339

### Company Outage Data (Interruption Data 1) Excluding Major Events *Continued*

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (Excluding Major Events)						
	Equipment- OH Conductor	Equipment- UG Equip- ment	Equipment- UG Cable	Power Supply	Planned	Unknown	Others
1	3,551	352	8,921	4,093	4,039	13,743	29,485
2	27,528	3,458	11,080	175,125	31,687	56,398	33,321
3				93,901	78,870	50,434	10,711
4	6,628	226	251		3,232	5,172	10,595
5	30,001	391	2,293	27,468	8,375	64,128	31,203
6	0	2,236	0	0	0	191,245	25,357
7	7,154		3,375		12,013	24,297	
8	3,825	19,407	45,328	20,057	10,214	19,067	45,239
9	80,243	2,487	22,669	216,770	16,900	35,723	91,913
10	130,732	13,370	156,922	0	101,372	84,025	57,802
11	111,853	24,438	101,962	117,577		118,258	131,616
12	16,865	4,219	19,776	0	93,623	33,470	25,986
13	65,327	34,907	50,945	10,983	41,702	106,562	87,715
14	138	220	16,811	8,856	52,562	21,276	33,445
15	10,366	220	1,400	62,686	1,677	3,388	6,776
16							
17	145,337	15,632	120,651	64,786	198,825	47,142	40,088
18	59,880	5,358	51,870	6,106	41,631	286,543	95
19	232,889	256,270	252,147	18,410	197,576	185,921	376,164
20	7,280	900	6,681	2,707	10,485	18,388	16,434
21	26,757	1,786	18,551	27,937	15,442	31,206	36,852
22							
23	187,127	11,470	42,945	34,204	185,122	15,087	13,738
24	66,957	36,903	101,106	1,644	66,405	153,705	98,690
25	18,307	259	2,917	2,136	0	9,532	11,042
26	57,922	2,384	14,768	42,625	39,596	24,835	86,681
27	37,047	297	2,210	159,826	100,120	78,593	56,555
28	73,692	2,675	34,216	88,745	259,119	227,176	47,691
29	103,552	10,273	30,018		73,064	16,911	72,376
30	341,205	53,597	45,319	246,568	310,081	259,731	192,048
31	23,136	55,788	62,451	35,044	34,971	34,831	32,715
32	2,913	6,416	238		64,014	3,496	6,858
33	19,476	6,068	42,377				141,131
34	76,816	13,909	15,188	245,285	13,620	2,197	2,014,870
35	4,509	284	11,891	25,549	1,553	3,855	5,306

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (Excluding Major Events)						
	Equipment- OH Conductor	Equipment- UG Equipment	Equipment- UG Cable	Power Supply	Planned	Unknown	Others
36	15,874	1,530	62,399	11,852	182,277	83,153	55,544
37	10,643	7,148	7,238	26,225	41,870	31,640	25,070
38				68,004	132,268	130,166	156,608
39	7,806	1,850	7,359	200,542	47,276	17,520	84,369
40	427,209	603,557	895,862	262,326		2,355,569	270,378
41	1,091	315	4,007	2,197		204	1,277
42	46,242	3,769	4,641		12,806	16,872	784
43							
44	12,204	15,745	21,736	11,702	48,938	75,304	20,922
45	12,068	85	175	33,663	31,086	27,613	9,874
46	77,926	24,285	77,571		168,837	10,457	187,953
47	213,083	26,272	208,924	211,673	232,737	390,551	903,355
48	1,518	2,271	11,589	38,910	9,390	104,262	46,886
49	62,277	5,481	33,638	350,083	114,160	165,794	66,293
50	32,768	1,509	11,671	218,452	180,306	81,479	26,993
51	33,336	75,764	163,227	12,161	118,234	120,321	31,833
52	128,874	58,051	19,937		185,229	178,065	491,960
53	13,019	1,766	7,093	0	16,973	27,636	39,825
54	53,546	127,021	233,433	20,134	29,166	131,796	106,503
55	63,728	60,411	46,777	40,037	42,293	84,049	46,681
56				15,240	33,921	28,849	2,743
57	9,309	208	2,041	20,581	1,754	4,609	6,865
58	235	54,735	2	32,832	38,432	37,980	38,901
59	43,456	4,352	15,130	82,180	89,983	64,840	53,981
60	48,296	49,983	78,939	602,038	201,139	164,734	89,529
61	100,074	2,556	55,543	88,127	4,350	40,914	77,095
63	68,285	4,160	11,609	166,680	91,545	85,012	96,586
66	22,641	3,556	5,782	54,401	24,968	43,004	94,776
67	6,967	15,287	32,281	57,831	6,305	21,979	15,875
68	420	0	99	30,023	11,263	4,168	1,725
69	0	0	89,947	129,551	69,419	402,805	471,897
71	18,752	790	6,567	13,436	175	22,713	34,046
74							
75				0		501	10,788
76	16,591	564	7,608	107,847	35,958	15,652	38,037
77	21,209	7,561	34,901	29,476	0	30,175	21,911
79	4,849	11,243	21,289	21,338	36,273	24,872	30,793
80	5,174	7	3,708			15,697	3,838

Company ID #	Company Interruption Data 1 – Number of Customer Interruptions (Excluding Major Events)						
	Equipment-OH Conductor	Equipment-UG Equipment	Equipment-UG Cable	Power Supply	Planned	Unknown	Others
82	32,666	4,571	5,412	78,474	51,920	166,129	11,855
83	114,047	4,906	11,880	327,728	78,477	87,214	119,865
84		16,850			400,635	205,040	59,318
86	215,729	18,123	13,985	424,980	4,326	177,976	233,299
89	29,450	283	3,003	59,109	40,674	40,771	20,940
90	24,764	10,395	63,160	12,899	23,188	55,200	22,638
92	1,587	2	247		1,636	3,725	1,216
97	22,611	5,246	16,060	129,648	19,382	81,496	37,727

## Company Outage Minutes (Interruption Data 1) Excluding Major Events

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (Excluding Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment- OH Equipment
1	10,736,062	2,377,160	2,607,789	887,822	346	3,739,877
2	9,939,183	5,401,598	10,189,593	1,219,810	3,873,341	9,598,911
3	14,923,572	4,162,598	9,866,547	1,980,342	7,510,724	15,504,855
4	4,427,570	370,636	1,914,318	54,652		1,316,114
5	692,572	2,844,504	3,286,625	3,923,698	261,346	12,928,281
6	28,738,568	3,011,229	2,613,026	5,628,431	3,328,454	7,907,193
7	587,292	259,501	327,791	3,332,542	3,332,542	3,414,489
8	3,524,500	284,180	2,378,673	744,994	631,860	4,481,441
9	29,003,498	12,957,237	11,820,885	4,909,680	48,850	15,212,094
10	28,275,344	3,662,351	9,577,258	1,952,432	787,488	5,293,464
11	46,157,908	7,391,902	9,230,589	5,692,110	370,747	16,365,230
12	14,876,838	3,600,992	9,240,978	2,902,023	6,019,101	10,067,266
13	35,246,639	7,137,416	17,893,878	7,418,627	7,034,818	15,560,348
14	13,626,646	1,899,919	3,334,928	1,749,357	0	4,942,511
15	5,157,836	16,338	1,225,928	100,324	1,171,231	1,457,670
16						
17	39,259,423	2,428,829	8,526,053	1,730,392	21,156	12,543,494
18	154,938,420	26,017,320	38,740,920	11,659,020	N/A	10,897,140
19	46,970,099	11,227,131	16,718,265	6,877,830	15,829,253	44,511,143
20	2,706,601	1,376,527	1,247,940	736,549	4,720,545	1,921,088
21	23,290,662	2,776,585	2,179,064	940,977	1,020,215	5,836,791
22						
23	20,467,220	7,029,737	8,740,693	2,990,766	6,630,901	24,353,434
24	24,259,758	14,621,063	14,349,402	6,203,586	11,746,868	33,987,129
25	2,772,356	638,197	901,954	504,474	2,350,940	1,646,553
26	9,358,604	2,897,234	10,490,098	1,596,864	49,567,395	4,457,432
27	60,567,643	2,621,427	5,878,774	507,790	2,023,024	14,692,425
28	319,200,217	7,191,135	16,509,410	4,215,463	74,319	49,064,416
29	45,609,341	6,788,392	7,800,742	2,581,502	6,844	1,449,780
30	127,530,806	25,060,138	76,514,064	72,481,442	92,562,872	128,239,402
31	1,077,370	872,399	10,955,034	15,827	1,318,375	5,360,848
32	31,143,416	2,111,016	5,770,715	1,008,585	29,542	3,456,762
33	25,635,489	5,998,320	1,177,530	17,764,557	22,817,893	20,700,299
34	37,002,600	6,164,689	42,430,499	17,072,964	10,775,502	1,124,070
35	4,031,023	2,396	935,999	142	710,993	2,401,961
36	42,737,742	8,288,427	11,664,323	3,315,219	113,267	10,273,467

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (Excluding Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
37	21,123,651	3,443,957	10,649,902	1,769,928	5,177,971	9,156,687
38	136,911,038	13,517,044	25,892,694	5,152,002	38,206,589	81,807,971
39	52,576,553	2,552,182	18,883,663	22,371,555	27,666,230	6,637,948
40	13,292,265	13,477,519	77,500,273	1,513,982	17,582,369	51,331,288
41	1,272,387	496,339	476,074	251,951		338,612
42	14,411,917	1,935,546	2,674,911	257,613		3,603,569
43						
44	1,840,448	4,531,834	8,388,661	380,521	2,078,005	5,976,838
45	33,053,699	830,458	2,384,298	196,896	4,837,100	7,987,322
46	24,550,000	6,472,105	6,753,219	2,907,313	33,556	6,490,620
47	72,061,901	20,225,766	36,896,555	49,587,004	14,876,111	92,383,416
48	10,636,540	1,776,471	2,359,370	3,112,425	1,151,829	5,270,953
49	61,618,873	7,230,164	31,531,342	4,688,983	10,465,685	37,198,863
50	228,767,573	6,757,396	36,273,539	5,687,138	27,552,546	62,984,648
51	28,003,558	9,906,731	14,844,818	3,407,418	1,327,976	26,900,162
52	80,072,308	10,456,082	16,507,512	6,782,376	27,771,729	50,384,737
53	5,944,117	1,108,115	2,986,611	917,889	2,954,350	3,616,662
54	11,748,236	4,980,347	20,722,336	1,298,408	786,800	15,941,889
55	89,022,363	6,811,060	23,706,048	2,370,011	202,075	15,572,922
56	16,659,715	1,061,475	3,414,339	2,494,781	2,474,484	10,656,311
57	7,534,287	1,026,264	1,449,057	494,324	15,525	1,487,596
58	23,933,220	4,157,715	15,360,391	2,833,902	1,850,829	40,710,555
59	50,595,219	2,477,477	8,313,078	629,589	697,114	11,080,382
60	22,928,495	7,692,243	32,612,031	2,380,658	13,436,235	29,918,841
61	22,860,409	4,312,010	4,640,173	1,104,930	148,252	15,319,184
63	30,949,475	3,964,947	4,674,613	3,305,781	1,780,388	17,513,134
66	32,241,172	4,192,041	5,699,812	1,185,696	563,800	15,983,300
67	474,479	481,774	3,290,923	116,276	2,524,958	3,661,395
68	435,824	170,438	260,006	182,373	88,808	945,025
69	1,071,896	3,494,172	11,189,949	1,053,023	22,709,591	0
71	3,995,409	715,617	3,513,894	1,238,303	104,962	3,501,258
74						
75	2,453,673	181,360	212,791	20,269	10,238	391,495
76	24,047,850	3,007,525	16,638,217	3,683,338	3,689,195	13,760,630
77	10,274,252	5,084,301	5,857,897	2,367,825	0	5,071,280
79	38,646,539	4,903,938	10,901,856	1,227,893	4,005,473	12,920,743
80	2,161,795	2,745,411	2,728,749	1,229,013	2,284,463	5,276,812
82	17,051,604	2,578,194	6,813,102	1,967,480	8,327,018	7,848,075

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (Excluding Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment-OH Equipment
83	17,205,818	1,539,924	15,098,297	28,651,789	16,086,363	22,759,459
84	42,363,478	6,103,447	16,596,733	13,797,459	56,410,005	17,796,693
86	37,162,592	14,296,828	13,149,158	7,371,504	5,870,161	37,206,647
89	3,636,808	3,270,902	3,167,878	704,226	3,148,258	8,180,886
90	68,053,685	3,400,867	11,661,391	7,213,604	2,169,995	21,543,777
92	653,025	309,661	203,579	740		323,358
97	2,630,739	2,044,875	5,607,196	4,577,462	4,499,851	7,189,859

### Company Outage Minutes (Interruption Data 1) Excluding Major Events *Continued*

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (Excluding Major Events)						
	Equip-ment-OH Conductor	Equip-ment-UG Equip-ment	Equip-ment-UG Cable	Power Supply	Planned	Unknown	Others
1	570,512	85,001	1,307,249	338,229	302,472	1,531,923	1,938,304
2	4,935,680	434,432	1,941,744	27,523,386	6,310,909	5,549,948	5,183,588
3				10,649,652	7,120,632	3,844,666	384,459
4	399,070	34,291	59,507		140,475	387,163	303,056
5	3,227,026	63,825	385,586	1,352,205	767,812	5,375,080	2,914,243
6	0	362,607	0	0	0	33,155,406	1,968,815
7	723,872		341,449		1,215,558	2,458,432	
8	891,118	1,668,256	3,407,849	223,338	2,298,451	1,338,207	3,121,780
9	9,347,351	514,330	4,194,451	17,092,420	809,719	2,834,554	4,883,755
10	8,850,940	1,763,287	14,841,889	0	20,062,935	4,332,385	2,216,424
11	7,144,747	1,706,813	11,970,499	9,117,791		5,206,473	5,761,449
12	2,209,888	1,042,638	4,146,796	0	6,996,045	3,794,989	1,264,872
13	4,748,177	4,313,666	7,047,712	874,019	4,370,935	6,546,746	5,166,317
14	18,512	38,211	1,881,093	293,412	2,809,892	1,835,544	1,380,585
15	251,982	29,697	173,732	610,645	413,480	372,460	198,658
16							
17	10,380,338	2,612,300	15,175,497	3,139,003	27,430,200	2,168,543	2,109,357
18	6,337,860	808,560	9,254,760	668,280	3,627,240	24,171,180	6,840
19	23,246,995	25,896,781	19,587,154	384,474	16,193,873	11,471,685	20,596,824
20	529,660	135,027	845,035	105,736	601,734	1,488,489	1,076,159
21	3,609,564	280,245	3,035,911	2,758,595	2,648,052	3,186,119	2,065,852
22							
23	25,986,043	1,617,623	8,398,539	2,164,546	16,245,694	1,269,481	644,099
24	7,554,392	3,723,798	9,890,702	127,425	7,915,990	12,179,123	8,681,989
25	1,422,607	41,105	520,442	174,267	0	929,241	992,853
26	7,798,883	590,143	2,243,307	1,067,672	4,016,180	1,294,602	3,343,230
27	6,502,633	77,971	617,013	32,496,237	18,321,620	9,355,862	5,151,322
28	10,018,652	650,146	6,793,880	7,119,015	17,292,519	52,015,763	5,623,026
29	8,449,937	1,485,094	4,712,001		5,195,407	1,391,124	3,798,741
30	53,501,338	9,378,646	10,638,445	27,596,699	44,306,214	27,175,917	17,532,831
31	2,379,763	5,581,622	7,984,833	1,368,214	3,484,764	3,026,335	1,662,025
32	414,442	944,582	27,364		5,331,247	270,050	740,399
33	2,061,928	1,180,124	6,816,548				10,106,376
34	8,396,495	1,372,113	640,310	30,774,570	3,422,701	230,853	211,398,164
35	268,866	68,045	1,062,866	1,858,933	197,927	237,995	373,619



Company ID #	Company Interruption Data 1 – Number of Customer Minutes (Excluding Major Events)						
	Equipment-OH Conductor	Equipment-UG Equipment	Equipment-UG Cable	Power Supply	Planned	Unknown	Others
36	750,364	339,330	9,763,372	219,886	15,381,976	8,810,164	3,163,762
37	1,203,672	997,545	1,971,837	3,931,646	4,679,233	4,157,370	1,849,276
38				9,583,724	16,150,934	17,210,916	14,582,939
39	1,308,777	548,293	938,780	25,818,645	6,405,442	1,310,560	5,911,598
40	29,408,941	48,692,767	62,623,894	3,553,908		157,282,456	28,530,801
41	145,230	38,489	432,708	33,224		23,652	24,242
42	4,023,149	855,045	1,116,204		928,247	2,173,286	37,088
43							
44	1,717,105	2,205,016	3,289,666	2,533,991	4,369,100	6,982,517	1,253,860
45	1,998,538	20,154	50,992	5,767,553	4,630,599	2,705,834	1,043,552
46	6,018,132	3,578,775	11,720,681		15,303,947	847,453	9,275,622
47	30,487,416	3,069,208	26,063,573	7,725,237	14,168,124	21,956,091	54,480,426
48	31,515	348,165	1,579,334	1,391,900	1,228,270	5,906,060	2,483,879
49	10,129,284	1,268,282	6,297,621	51,109,563	10,202,434	12,334,196	6,056,701
50	5,944,645	629,743	3,755,902	34,970,627	33,215,364	12,907,502	3,515,628
51	4,559,470	5,580,697	20,862,760	357,264	7,270,079	10,546,598	2,984,840
52	15,463,406	9,865,254	4,421,114		8,769,148	22,024,601	60,210,369
53	941,157	238,836	934,100	0	780,269	2,119,913	1,959,437
54	6,335,872	9,572,279	24,491,415	1,540,355	4,634,054	10,353,565	7,684,134
55	11,099,929	9,460,398	10,190,174	2,838,135	9,681,948	9,669,901	4,368,091
56				1,860,979	3,079,277	3,394,776	109,651
57	1,218,245	41,079	257,362	1,855,844	168,522	426,277	313,621
58	38,272	7,219,079	276	1,316,556	4,000,139	3,558,284	2,351,103
59	6,031,743	887,710	3,254,187	11,947,441	8,732,457	6,932,146	4,507,380
60	8,539,733	8,473,422	16,135,571	46,624,683	14,198,205	12,303,239	6,668,762
61	14,019,331	781,530	9,505,521	3,719,627	634,118	3,016,988	3,877,177
63	7,913,355	1,023,398	2,581,744	11,092,504	15,954,934	6,613,083	8,568,493
66	2,702,563	1,109,438	1,817,210	2,785,711	2,693,877	5,077,432	6,874,186
67	458,210	823,584	3,222,382	2,896,366	573,267	1,535,633	952,589
68	72,168	0	17,199	2,097,763	1,338,113	505,421	190,019
69	0	0	8,012,901	6,769,698	7,299,018	12,318,069	28,478,550
71	1,707,818	186,106	1,001,567	1,320,467	21,356	1,732,169	1,299,216
74							
75				0		58,740	100,577
76	3,038,309	228,888	1,989,477	17,862,132	3,852,971	1,984,982	4,746,325
77	3,065,754	1,365,313	6,137,389	3,077,437	0	2,868,229	2,410,812
79	1,189,924	1,946,017	5,022,780	3,304,322	34,087,797	3,098,120	2,627,744
80	486,419	923	738,581			1,149,172	197,697

Company ID #	Company Interruption Data 1 – Number of Customer Minutes (Excluding Major Events)						
	Equipment-OH Conductor	Equipment-UG Equipment	Equipment-UG Cable	Power Supply	Planned	Unknown	Others
82	2,975,173	807,129	977,236	4,186,771	5,071,788	10,606,148	407,385
83	13,516,917	1,025,943	2,556,190	34,018,720	9,566,852	5,320,390	11,138,589
84		2,077,026			37,513,849	15,796,770	4,830,929
86	26,243,522	3,480,898	3,580,236	25,253,174	502,930	19,783,448	15,119,498
89	2,944,174	102,670	746,820	6,799,033	5,049,366	4,208,918	2,764,547
90	2,970,472	1,483,383	8,298,916	1,484,581	4,390,829	6,523,857	2,216,363
92	100,659	122	18,428		93,987	190,572	63,256
97	2,856,027	736,933	1,692,126	10,915,319	1,809,059	3,251,542	1,966,082

## Company Outage Data (Interruption Data 2) By Classification For All Interruptions

Company Interruption Data 2 – Interruptions (All) By Origination Facility (Numbers)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
1	Yes		37,947	15,249	171,335	12,443	
2	Yes		110,958	75,729	473,854	41,982	
3	Yes		175,014	161,372	888,450	35,969	
4	Yes			2,656	142,514	477	21
5	Yes		108,019	50,938	340,941	5,925	
6	Yes	0	4,891	61,528	1,035,289	5,489	0
7	No						
8	Yes	20,137	51,084	69,883	137,728	81,869	164
9	Yes		273,266	163,837	1,043,320	32,883	4,780
10	Yes	0	20,251	33,355	948,334	247,467	1,020
11	Yes						
12	Yes	0	50,255	15,300	485,938	25,793	
13	Yes	NA	64,169	57,971	1,698,896	146,292	NA
14	Yes						
15	Yes	62,686	38,722	1,224	51,829	3,496	7
16	No						
17	No						
18	No						
19	No						
20	No						
21	Yes	0	27,941	21,315	337,449	27,215	109
22	Yes		107,356		35,393		
23	Yes	0	47,947	109,213	1,072,899	66,283	5,666
24	Yes		78,922	136,640	1,308,370	200,014	3,296
25	Yes	0	9,866	29,904	106,983	4,460	0
26	Yes		136,527	44,128	1,041,976	29,792	
27	Yes	0	211,539	66,675	696,768	3,445	396
28	Yes		123,709	178,433	1,752,149	73,925	77
29	Yes	0	13,558	62,233	2,427,639	72,400	
30	Yes	0	7,453,762	352,527	7,093,603	360,159	
31	Yes	0	45,394	57,332	242,532	185,439	899
32	Yes						
33	Yes		67,325	429,844	400,084	23,175	
34	Yes		67,517	96,129	3,965,871	329,366	2,294
35	Yes	25,549	2,338	3,526	94,423	12,908	14
36	Yes		123,709	178,433	1,752,149	73,925	77

Company Interruption Data 2 – Interruptions (All) By Origination Facility (Numbers)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
37	Yes		49,778	73,572	457,156	21,576	
38	Yes	38,486	207,016	78,490	2,161,745		
39	Yes	0	218,928	52,167	1,355,276	4,870	921
40	Yes	142,503	387,882	2,057,052	3,653,047	151,773	330
41	Yes		0	3,206	25,545	9,117	
42	Yes			35,828	512,213	13,346	
43	No						
44	Yes	0	12,821	60,159	354,447	48,222	32
45	Yes	0	15,798	23,752	393,882	217	552
46	Yes	0	12,057	37,173	1,378,665	212,888	
47	Yes	215,112	180,860	5,286	4,894,646	107,250	63,380
48	Yes		13,805	25,533	535,891	14,168	728
49	Yes	0	199,139	189,021	1,732,836	20,199	1,732
50	Yes	0	157,855	82,178	2,041,645	5,848	972
51	Yes		61,976	174,269	1,015,612	277,715	
52	Yes		199,866	32,979	2,447,310	138,440	
53	No						
54	Yes		69,762	59,795	876,438	486,605	
55	Yes		249,207	57,814	1,521,512	178,868	91
56							
57	Yes	0	25,238	8,308	125,727	2,379	9
58	Yes	0	35,163	121,388	852,943	59,079	1,391
59	Yes	0	105,192	53,981	728,166	29,646	147
60	Yes	674	717,118	145,095	2,092,162	233,338	
61	Yes	0	148,241	154,776	790,210	64,545	440
63	Yes	0	209,170	177,978	691,605	23,564	4,210
66	Yes		92,496	93,859	734,743	16,284	1,843
67	No						
68	Yes	4,810	29,564	18,308	28,425	1,865	
69	Yes		147,288	46,154	660,441	321,128	
71	Yes		18,312	9,158	207,684	8,747	6
74	No						
75	Yes	0	0	10,665	25,110		0
76	Yes	0	56,397	60,561	587,051	5,312	1,365
77	Yes	0	47,879	7,365	310,662	52,179	
79	Yes		23,225	49,561	660,763	38,574	
80	No						
82	Yes	0	74,714	61,111	687,164	25,454	466

Company Interruption Data 2 – Interruptions (All) By Origination Facility (Numbers)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
83	Yes	0	140,185	187,543	1,216,341	13,364	1,265
84	No						
86	Yes	0	424,980	139,067	1,295,287	42,527	1,207
89	Yes	2,363	56,746	45,159	234,565	15,412	
90	Yes		12,899	15,629	743,381	98,192	
92	Yes			4,113	34,063	249	
97	Yes	0	60,854	68,794	433,467	11,506	324

## Company Outage Minutes (Interruption Data 2) By Classification For All Interruptions

Company Interruption Data 2 – Interruptions (All) By Origination Facility (Minutes)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
1	Yes		3,965,452	2,506,749	26,439,687	1,815,996	
2	Yes		29,761,767	7,886,604	73,266,409	9,073,524	
3	Yes		99,100,382	137,320,385	1,423,729,093	22,824,309	
4	Yes			40,608	13,698,692	93,798	2,491
5	Yes		21,693,634	4,441,297	128,072,280	1,164,801	
6	Yes	0	3,991,308	15,394,466	1,222,893,679	868,970	0
7	No						
8	Yes	231,306	3,899,706	6,561,602	16,279,520	9,764,746	36,019
9	Yes		30,363,954	13,863,445	307,907,603	6,232,443	565,854
10	Yes	0	651,277	1,295,072	123,097,298	28,354,990	145,803
11	Yes						
12	Yes	0	5,669,354	1,258,199	84,772,173	5,403,716	
13	Yes	NA	36,586,163	5,813,832	422,531,006	22,992,658	NA
14	Yes						
15	Yes	610,645	3,880,393	121,912	6,199,478	365,728	1,825
16	No						
17	No						
18	No						
19	No						
20	No						
21	Yes	0	2,758,835	2,974,883	49,369,388	4,230,995	26,611
22	Yes		8,177,996		4,573,072		
23	Yes	0	3,403,730	12,122,122	249,952,509	12,380,393	1,428,549
24	Yes		7,523,274	11,456,766	171,226,217	20,204,150	482,057
25	Yes	0	1,386,474	2,430,549	13,775,141	840,701	0
26	Yes		5,061,801	1,113,255	159,955,444	4,406,851	
27	Yes	0	45,838,725	13,576,929	139,963,067	824,703	46,095
28	Yes		26,791,463	23,993,224	617,834,245	14,335,442	38,584
29	Yes	0	997,760	3,831,157	3,957,029,444	31,779,187	
30	Yes	0	8,771,580,056	54,064,425	8,313,360,280	458,219,776	
31	Yes	0	3,872,609	5,291,900	24,988,677	19,325,823	96,652
32	Yes						
33	Yes		4,423,271	68,939,581	113,786,480	5,678,301	
34	Yes		4,000,160	7,901,699	792,210,758	54,517,462	252,923
35	Yes	1,858,933	1,069,996	91,079	12,964,883	1,212,677	2,072
36	Yes		26,791,463	23,993,224	617,834,245	14,335,442	38,584

Company Interruption Data 2 – Interruptions (All) By Origination Facility (Minutes)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
37	Yes		8,381,208	27,598,047	183,639,293	5,556,413	
38	Yes	4,629,044	59,910,021	21,554,930	854,915,402		
39	Yes	0	47,040,648	10,513,907	979,359,164	1,633,748	313,698
40	Yes	36,255,920	12,397,099	32,104,579	202,151,802	96,718,803	205,322
41	Yes		0	198,856	3,396,840	714,683	
42	Yes			61,568,807	369,808,879	4,124,898	
43	No						
44	Yes	0	2,615,983	4,876,541	35,877,767	6,500,177	5,510
45	Yes	0	10,729,802	6,694,865	297,773,756	56,123	119,026
46	Yes	0	377,220	1,299,999	308,687,919	30,493,803	
47	Yes	8,052,382	5,681,097	197,201	542,216,350	18,763,726	8,387,789
48	Yes		1,149,289	728,448	74,633,534	2,029,444	20,433
49	Yes	0	38,867,597	26,343,045	311,819,159	4,662,797	78,889
50	Yes	0	29,933,945	10,211,353	567,914,066	2,268,835	124,012
51	Yes		4,018,172	7,504,878	146,493,884	31,626,444	
52	Yes		24,203,444	2,971,666	717,833,412	27,619,110	
53	No						
54	Yes		4,509,532	3,056,142	146,949,394	45,397,137	
55	Yes		47,681,278	7,365,314	400,772,204	32,971,682	8,024
56							
57	Yes	0	2,419,341	548,394	26,462,256	313,432	1,101
58	Yes	0	5,008,886	9,054,317	170,892,331	8,037,910	202,010
59	Yes	0	22,277,540	5,389,480	152,408,269	6,079,124	31,174
60	Yes	731,452	80,573,861	15,219,797	868,252,590	42,859,006	
61	Yes	0	32,760,704	14,619,480	338,269,534	13,402,918	300,165
63	Yes	0	16,959,077	11,984,596	153,408,461	4,819,165	45,587
66	Yes		15,654,591	9,779,174	195,645,643	4,010,650	
67	No						
68	Yes	273,246	2,184,332	2,249,740	3,952,200	172,467	
69	Yes		5,048,394	3,487,859	46,552,927	25,758,766	
71	Yes		1,997,900	977,201	27,043,229	1,332,016	1,929
74	No						
75	Yes	0	0	95,985	4,094,982		0
76	Yes	0	16,323,113	9,355,416	196,906,240	1,672,719	191,152
77	Yes	0	4,208,793	1,261,914	54,420,351	8,459,342	
79	Yes		3,801,007	6,653,191	346,957,154	7,876,072	
80	No						
82	Yes	0	4,428,849	3,268,492	84,358,964	3,625,017	22,275

Company Interruption Data 2 – Interruptions (All) By Origination Facility (Minutes)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
83	Yes	0	32,499,956	25,587,397	441,215,296	3,705,147	140,869
84	No						
86	Yes	0	117,843,917	18,259,550	2,300,215,762	33,793,944	1,131,478
89	Yes	703,884	12,609,132	4,694,511	40,991,275	2,595,451	
90	Yes		2,483,059	1,746,377	138,603,787	15,785,291	
92	Yes		2,685,177	85,755	4,656,216	18,550	297,327
97	Yes	0	31,271,235	6,248,680	108,186,034	1,877,745	21,383



## Company Outage Data (Interruption Data 2) By Classification Excluding Major Events

Company Interruption Data 2 – Interruptions (Excluding Major Events) By Origination Facility							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
1	Yes		34,850	15,249	153,862	12,137	
2	Yes		99,398	75,727	404,778	40,118	
3	Yes		117,951	91,018	478,386	31,472	
4	Yes			2,656	121,921	477	13
5	Yes		49,217	50,811	251,478	5,775	
6	Yes	0	1,702	51,920	562,841	5,194	0
7	No						
8	Yes	20,137	36,845	30,516	114,676	77,474	162
9	Yes		212,413	156,800	710,387	31,342	4,577
10	Yes	0	20,251	29,554	737,825	223,711	1,020
11	Yes						
12	Yes	0	44,126	15,300	417,167	23,995	
13	Yes	NA	15,647	48,985	1,197,367	137,045	NA
14	Yes						
15	Yes	62,686	38,722	1,224	51,829	3,496	7
16	No						
17	No						
18	No						
19	No						
20	No						
21	Yes	0	27,937	20,870	321,144	27,068	109
22	Yes						
23	Yes	0	34,204	102,965	816,657	63,329	4,531
24	Yes		78,922	136,588	1,144,012	194,199	3,288
25	Yes	0	3,166	29,078	98,507	4,383	0
26	Yes		42,625	129,948	790,365	27,962	
27	Yes	0	159,826	66,499	621,673	3,423	395
28	Yes		88,745	177,161	1,425,445	73,368	77
29	Yes	0	10,294	53,778	762,545	57,422	
30	Yes	0	3,918,788	324,011	3,737,006	181,782	
31	Yes	0	35,044	44,100	219,138	179,432	899
32	Yes						
33	Yes		67,325	339,469	321,243	22,579	
34	Yes		63,656	70,164	2,858,482	305,923	2,276
35	Yes	25,549	2,338	3,526	81,596	12,908	14
36	Yes		11,852	76,382	980,638	97,572	3,325

Company Interruption Data 2 – Interruptions (Excluding Major Events) By Origination Facility							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
37	Yes		43,116	53,975	312,132	19,713	
38	Yes	37,313	169,115	71,738	1,628,345		
39	Yes	0	153,153	47,389	860,226	4,711	798
40	Yes	127,623	358,168	1,949,774	3,168,302	1,462,962	632,864
41	Yes		0	2,197	23,633	9,117	
42	Yes			19,624	298,425	13,134	
43	No						
44	Yes	0	11,702	60,159	327,222	48,222	32
45	Yes	0	10,814	22,849	296,293	217	485
46	Yes	0	6,772	34,999	791,755	200,902	
47	Yes	211,673	177,532	5,286	4,308,497	104,412	57,953
48	Yes		12,689	25,533	422,996	13,912	364
49	Yes	0	166,967	183,116	1,486,874	19,681	1,520
50	Yes	0	139,482	78,970	1,786,439	5,807	947
51	Yes		56,671	174,269	867,369	276,068	
52	Yes		187,014	32,893	1,882,833	123,636	
53	No						
54	Yes		51,674	58,070	639,979	477,240	
55	Yes		131,140	29,490	899,042	168,061	91
56							
57	Yes	0	20,581	7,254	100,994	2,379	8
58	Yes	0	32,832	116,091	677,515	57,662	1,325
59	Yes	0	82,180	52,289	609,607	29,273	147
60	Yes	0	471,441	103,247	1,249,944	209,467	
61	Yes	0	88,127	104,437	461,319	60,767	125
63	Yes	0	162,973	170,746	584,376	23,528	4,203
66	Yes		54,401	86,398	491,370	15,772	
67	No						
68	Yes	4,810	25,213	14,635	22,437	1,847	
69	Yes		141,111	46,154	645,387	319,993	
71	Yes		13,436	9,158	177,452	8,714	6
74	No						
75	Yes	0	0	10,665	23,474		0
76	Yes	0	47,286	60,561	446,061	5,209	1,346
77	Yes	0	47,879	7,365	276,115	50,879	
79	Yes		21,338	47,877	465,458	38,229	
80	No						
82	Yes	0	70,288	51,505	592,960	24,839	466

Company Interruption Data 2 – Interruptions (Excluding Major Events) By Origination Facility							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
83	Yes	0	140,185	187,543	1,216,341	13,364	1,265
84	No						
86	Yes	0	424,980	139,067	1,295,287	42,527	1,207
89	Yes	2,363	56,746	45,159	234,565	15,412	
90	Yes		12,899	15,629	743,381	98,192	
92	Yes			4,113	34,063	249	
97	Yes	0	60,854	68,794	433,467	11,506	324

## Company Outage Minutes (Interruption Data 2) By Classification Excluding Major Events

Company Interruption Data 2 – Interruptions (Excluding Major Events) By Origination Facility (Minutes)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
1	Yes		3,965,452	2,506,749	26,439,687	1,815,996	
2	Yes		29,761,767	7,886,604	73,266,409	9,073,524	
3	Yes		99,100,382	137,320,385	1,423,729,093	22,824,309	
4	Yes			40,608	13,698,692	93,798	2,491
5	Yes		21,693,634	4,441,297	128,072,280	1,164,801	
6	Yes	0	3,991,308	15,394,466	1,222,893,679	868,970	0
7	No						
8	Yes	231,306	3,899,706	6,561,602	16,279,520	9,764,746	36,019
9	Yes		30,363,954	13,863,445	307,907,603	6,232,443	565,854
10	Yes	0	651,277	1,295,072	123,097,298	28,354,990	145,803
11	Yes						
12	Yes	0	5,669,354	1,258,199	84,772,173	5,403,716	
13	Yes	NA	36,586,163	5,813,832	422,531,006	22,992,658	NA
14	Yes						
15	Yes	610,645	3,880,393	121,912	6,199,478	365,728	1,825
16	No						
17	No						
18	No						
19	No						
20	No						
21	Yes	0	2,758,835	2,974,883	49,369,388	4,230,995	26,611
22	Yes		8,177,996		4,573,072		
23	Yes	0	3,403,730	12,122,122	249,952,509	12,380,393	1,428,549
24	Yes		7,523,274	11,456,766	171,226,217	20,204,150	482,057
25	Yes	0	1,386,474	2,430,549	13,775,141	840,701	0
26	Yes		5,061,801	1,113,255	159,955,444	4,406,851	
27	Yes	0	45,838,725	13,576,929	139,963,067	824,703	46,095
28	Yes		26,791,463	23,993,224	617,834,245	14,335,442	38,584
29	Yes	0	997,760	3,831,157	3,957,029,444	31,779,187	
30	Yes	0	8,771,580,056	54,064,425	8,313,360,280	458,219,776	
31	Yes	0	3,872,609	5,291,900	24,988,677	19,325,823	96,652
32	Yes						
33	Yes		4,423,271	68,939,581	113,786,480	5,678,301	
34	Yes		4,000,160	7,901,699	792,210,758	54,517,462	252,923
35	Yes	1,858,933	1,069,996	91,079	12,964,883	1,212,677	2,072
36	Yes		26,791,463	23,993,224	617,834,245	14,335,442	38,584

Company Interruption Data 2 – Interruptions (Excluding Major Events) By Origination Facility (Minutes)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
37	Yes		8,381,208	27,598,047	183,639,293	5,556,413	
38	Yes	4,629,044	59,910,021	21,554,930	854,915,402		
39	Yes	0	47,040,648	10,513,907	979,359,164	1,633,748	313,698
40	Yes	36,255,920	12,397,099	32,104,579	202,151,802	96,718,803	205,322
41	Yes		0	198,856	3,396,840	714,683	
42	Yes			61,568,807	369,808,879	4,124,898	
43	No						
44	Yes	0	2,615,983	4,876,541	35,877,767	6,500,177	5,510
45	Yes	0	10,729,802	6,694,865	297,773,756	56,123	119,026
46	Yes	0	377,220	1,299,999	308,687,919	30,493,803	
47	Yes	8,052,382	5,681,097	197,201	542,216,350	18,763,726	8,387,789
48	Yes		1,149,289	728,448	74,633,534	2,029,444	20,433
49	Yes	0	38,867,597	26,343,045	311,819,159	4,662,797	78,889
50	Yes	0	29,933,945	10,211,353	567,914,066	2,268,835	124,012
51	Yes		4,018,172	7,504,878	146,493,884	31,626,444	
52	Yes		24,203,444	2,971,666	717,833,412	27,619,110	
53	No						
54	Yes		4,509,532	3,056,142	146,949,394	45,397,137	
55	Yes		47,681,278	7,365,314	400,772,204	32,971,682	8,024
56							
57	Yes	0	2,419,341	548,394	26,462,256	313,432	1,101
58	Yes	0	5,008,886	9,054,317	170,892,331	8,037,910	202,010
59	Yes	0	22,277,540	5,389,480	152,408,269	6,079,124	31,174
60	Yes	731,452	80,573,861	15,219,797	868,252,590	42,859,006	
61	Yes	0	32,760,704	14,619,480	338,269,534	13,402,918	300,165
63	Yes	0	16,959,077	11,984,596	153,408,461	4,819,165	45,587
66	Yes		15,654,591	9,779,174	195,645,643	4,010,650	
67	No						
68	Yes	273,246	2,184,332	2,249,740	3,952,200	172,467	
69	Yes		5,048,394	3,487,859	46,552,927	25,758,766	
71	Yes		1,997,900	977,201	27,043,229	1,332,016	1,929
74	No						
75	Yes	0	0	95,985	4,094,982		0
76	Yes	0	16,323,113	9,355,416	196,906,240	1,672,719	191,152
77	Yes	0	4,208,793	1,261,914	54,420,351	8,459,342	
79	Yes		3,801,007	6,653,191	346,957,154	7,876,072	
80	No						
82	Yes	0	4,428,849	3,268,492	84,358,964	3,625,017	22,275

Company Interruption Data 2 – Interruptions (Excluding Major Events) By Origination Facility (Minutes)							
Company ID #	Track Origination Facility	Generation	Transmission	Substation	Distribution-Overhead	Distribution-Underground	Customer
83	Yes	0	32,499,956	25,587,397	441,215,296	3,705,147	140,869
84	No						
86	Yes	0	117,843,917	18,259,550	2,300,215,762	33,793,944	1,131,478
89	Yes	703,884	12,609,132	4,694,511	40,991,275	2,595,451	
90	Yes		2,483,059	1,746,377	138,603,787	15,785,291	
92	Yes		2,685,177	85,755	4,656,216	18,550	297,327
97	Yes	0	31,271,235	6,248,680	108,186,034	1,877,745	21,383

## Company Linear Circuit Mile & Customer Data

Company ID #	Linear Circuit Miles			Linear Circuit Mile By Voltage Class					Customer Count Range
	OH	UG	Sub-Total	5 kV	15 kV	25 kV	35 kV	Sub-Total	
1	7,641	2,350	9,991	91	8,892	1,007	1	9,991	Less than 500,000
2	17,676	6,229	23,905		18,319	511	5,075	23,905	500,000 - 1,000,000
3	32,564	10,101	42,665	687	40,294	1,602	80	42,663	500,000 - 1,000,000
4	1,278	231	1,509	438	662		409	1,509	Less than 500,000
5	15,395	937	16,332	794	13,796	1,136	606	16,332	Less than 500,000
6	10,754	1,203	11,957	259	7,673	433	3,592	11,957	Less than 500,000
7	4,500	1,500	6,000	1,000	4,850	150		6,000	Less than 500,000
8	1,202	2,368	3,570	250	3,286	33	0		Less than 500,000
9	18,516	6,672	25,188	2,611	22,142	133	302	25,188	1,000,000 - 1,500,000
10	9,177	17,665	26,842	181	25,134	0	1,527	26,842	1,000,000 - 1,500,000
11	14,415	8,185	22,600	3,545	16,518	2,075	112	22,250	More than 1,500,000
12	13,359	4,631	17,990	93	14,231			14,324	500,000 - 1,000,000
13	17,484	16,293	33,777	1,082	25,822	5,788	1,085	33,777	More than 1,500,000
14	5,133	1,121	6,254					0	Less than 500,000
15	2,042	720	2,762	221	2,539			2,760	Less than 500,000
16	2,337	798	3,135						Less than 500,000
17	12,967	9,463	22,430	7,904		7,451	7,075	22,431	More than 1,500,000
18	N/A	N/A	0	N/A	N/A	N/A	N/A	0	More than 1,500,000
19	35,715	33,108	68,823	1	30,821	37,126	0		More than 1,500,000
20	4,477	1,621	6,098	318	4,318	433	861	5,930	Less than 500,000
21	11,476	5,221	16,697	4	14,369	0	2,324		Less than 500,000
22	2,800	1,900	4,700	1,880	2,820			4,700	Less than 500,000
23	39,520	7,391	46,911	3,386	36,641	0	6,884		1,000,000 - 1,500,000
24	37,175	12,147	49,322					0	More than 1,500,000
25	3,059	1,345	4,404	47	4,357	0	0	4,404	Less than 500,000
26	36,396	8,613	45,009	9,167	35,817	25			1,000,000 - 1,500,000
27	20,102	1,300	21,402	102	20,876	0	424		Less than 500,000
28	36,279	7,784	44,063						More than 1,500,000
29	16,798	6,658	23,456					0	1,000,000 - 1,500,000
30	92,127	13,355	105,483	752	89,732	5,733	9,304	105,521	More than 1,500,000
31	2,954	23,097	26,051	61	25,820	146	24	26,051	1,000,000 - 1,500,000
32	12,169	1,980	14,149					0	500,000 - 1,000,000
33	20,346	5,355	25,701	4	19,504	2,512	3,682	25,702	500,000 - 1,000,000
34	32,792	26,063		647	23,242	1,244	33,722		More than 1,500,000

Company ID #	Linear Circuit Miles			Linear Circuit Mile By Voltage Class					Customer Count Range
	OH	UG	Sub-Total	5 kV	15 kV	25 kV	35 kV	Sub-Total	
	35	768	897	1,665	152	1,512	0	0	
36	13,416	5,035	18,451					0	1,000,000 - 1,500,000
37	7,835	2,449	10,284		10,284			10,284	Less than 500,000
38	50,754	9,264		50,849	9,145				More than 1,500,000
39	21,687	3,527		5,314	16,789	1,806	1,306		500,000 - 1,000,000
40	38,901	30,563		8,971	37,741	21,078	1,674		More than 1,500,000
41	854	1,272	2,125	226	1,900			2,125	Less than 500,000
42	3,814	2,197	6,011	767	5,054		160	5,981	Less than 500,000
43	1,798	766	2,564					0	Less than 500,000
44	8,510	6,480	14,990	470	4,507	9,994	18		Less than 500,000
45	9,851	181	10,032	1,812	6,188	0	2,031	10,032	Less than 500,000
46	11,646	9,592	21,238					0	1,000,000 - 1,500,000
47	68,451	18,871	87,322	417	114,240	53,183	0	167,841	More than 1,500,000
48	3,685	4,175	7,861	149	7,711			7,861	500,000 - 1,000,000
49	37,081	9,376	46,457	8,279	34,985	114	3,080	46,457	1,000,000 - 1,500,000
50	48,126	6,528	54,654	9,345	35,514	0	9,795	54,654	1,000,000 - 1,500,000
51	14,946	11,759	26,704	474	22,462	787	2,981	26,704	1,000,000 - 1,500,000
52	31,094	16,612	47,706	13,771	30,317	863	2,685		More than 1,500,000
53	5,787	1,960	7,747	17	7,418	311		7,747	Less than 500,000
54	9,507	13,838	23,345	15	20,082	3,248	0	23,345	1,000,000 - 1,500,000
55			0					0	1,000,000 - 1,500,000
56	13,311	7,735	21,046	4	112	21,078	63	21,257	Less than 500,000
57	4,555	1,193	5,748	2,112	3,636	0	0	5,748	Less than 500,000
58	26,074	8,048	34,122	3,999	24,847	370	4,119	33,335	1,000,000 - 1,500,000
59	19,934	3,621	23,555	56	23,494	4	0	23,554	500,000 - 1,000,000
60	42,717	22,286	65,003	485	50,031	10,842	2,766	64,124	More than 1,500,000
61	8,138	5,479	13,617	3,557	8,968	0	1,092	13,617	500,000 - 1,000,000
63	18,085	2,067	20,152	1,537	10,274	980	7,362	20,152	500,000 - 1,000,000
66	11,458	3,826	15,284	1,520	11,759	0	2,004	15,284	500,000 - 1,000,000
67	2,607	4,700	7,307	690	6,617			7,307	Less than 500,000
68	1,771	660	2,431	221	1,889	131	190	2,431	Less than 500,000



Company ID #	Linear Circuit Miles			Linear Circuit Mile By Voltage Class					Customer Count Range
	OH	UG	Sub-Total	5 kV	15 kV	25 kV	35 kV	Sub-Total	
69	11,173	19,454	30,627	86	29,907	607	27	30,627	1,000,000 - 1,500,000
71	5,818	1,369	7,187	82	7,105	0	0	7,187	Less than 500,000
74	846	474	1,320					0	Less than 500,000
75	1,104	162	1,266	81	1,183	0	0	1,264	Less than 500,000
76	16,658	4,007	20,666	3,984	16,378	0	304	20,666	500,000 - 1,000,000
77	5,776	5,972	11,748	69	11,270	409	0	11,748	500,000 - 1,000,000
79	8,174	8,115	16,289		16,278		11	16,289	500,000 - 1,000,000
80	5,618	749		78	6,260	27			Less than 500,000
82	17,892	5,354	23,246	5,753	17,244	37	212		500,000 - 1,000,000
83	37,288	6,691	43,979	9,304	34,420	255	0	43,979	1,000,000 - 1,500,000
84	63,983	10,487	74,470					0	1,000,000 - 1,500,000
86	12,005	7,395	19,400	3,288	15,662	0	451	19,400	1,000,000 - 1,500,000
89	13,036	4,955	17,990	584	15,638	1,761	7	17,990	Less than 500,000
90	15,542	12,740	28,282	6,722	6,262	14,862	505	28,351	1,000,000 - 1,500,000
92	382	67	449	80	369			449	Less than 500,000
97	15,305	5,169	20,474	5,219	13,961	790	504	20,474	500,000 - 1,000,000
<b>Sub-Total</b>	<b>1,358,385</b>	<b>555,522</b>	<b>1,693,989</b>	<b>186,062</b>	<b>1,211,890</b>	<b>211,076</b>	<b>120,436</b>	<b>1,222,164</b>	<b>79,973,160</b>
<b>TOTAL</b>			<b>TOTAL by Voltage Class</b>						
<b>TOTAL Customers Served By Survey Participants</b>									

### 2020 Survey Comments

The chart on the following pages lists the survey comments submitted by the participants of the EEI 2020 Reliability Survey.

ID #	Survey Comments
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17	N/A
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20	Our % of cust seeing interruptions is approximated from Feeder data. We have recently installed a MDM and will look at using AMI data to drive this in the future.
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25	We tracked planned outages but we do not include planned outages in our reliability indices. Also, the data provided for this survey includes only sustained outages (>5 min).
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ID #	Survey Comments
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