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Project No. 46735

Public Utility Commission of Texas

Electric Utility Distribution System Spending and Reliability

Prepared by the Infrastructure Division

2013 – 2022

September 2023

Electric Utility Distribution System Spending and Reliability

Project No. 46735

Table of Contents

Table of Acronyms and Abbreviations

AEP TCC	AEP Texas Central Company
AEP Texas	The resultant entity after merger of AEP Texas Central Company and AEP Texas North Company
AEP TNC	AEP Texas North Company
CNP	CenterPoint Energy Houston Electric, LLC
Commission	Public Utility Commission of Texas
EPE	El Paso Electric Company
ETI	Entergy Texas, Inc.
FERC	Federal Energy Regulatory Commission
O&M	Operations and Maintenance
Oncor	Oncor Electric Delivery Company LLC
Sharyland	Sharyland Utilities, L.P.
SWEPCO	Southwestern Electric Power Company
SPS	Southwestern Public Service Company
TAC	Texas Administrative Code
TNMP	Texas-New Mexico Power Company
VM	Vegetation Management

Electric Utility Distribution System Spending and Reliability

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FOREWORD

The Commission tasked staff with tracking the reliability and reliability-related spending of investor-owned electric utilities providing distribution service across the state of Texas. The eighth annual version covers the ten-year period from 2013 – 2022.

In response to previous reports, several utilities and other interested parties have provided written comments with suggestions regarding:

- Differences in data reporting between utilities (customer counts and line miles);
- The inability to isolate spending for reliability purposes from total spending as reported in the source information;
- Desire for additional metrics and;
- Exercising caution when making inter-utility comparisons.

Staff has evaluated methods for addressing these comments in future reports and notes that addressing the first three comments likely will require form or rule changes. At this time the Commission has not directed Staff to make such changes.

This report maintains the format of the previous reports and updates the data.

Electric Utility Distribution System Spending and Reliability

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SECTION 1: INTRODUCTION

The electric utilities in Texas have widely varying sizes and operating environments. Their operating environments reflect the geographical diversity of Texas – from coastal and densely wooded areas in the east to deserts and largely treeless plains in the west, as well as densely populated urban areas and sparsely populated rural areas.

This report provides data on

- Distribution system spending – including VM spending and reliability;
- All investor-owned electric distribution utilities serving customers in Texas[1];
- Variations in spending and reliability data in graphical format, and;
- Outage comparisons between utilities.

Section 2 provides data for each utility and Section 3 provides inter-utility comparisons by types of outages.

[1] The Commission does not generally regulate the retail rates and services of municipally owned electric utilities and cooperatively owned electric utilities.

SECTION 2: UTILITY-SPECIFIC INFORMATION

Section 2A: Format for Utility-Specific Data

The utilities are presented in alphabetical order in the remainder of Section 2. Each utility has its own set of figures.

The base data used to generate the figures come from three sources:

- FERC Form 1 filings by each utility - which provides utility-specific data using the Uniform System of Accounts, and the customer counts for the utility's entire service area;
- Annual vegetation management reports filed with the Commission, and;
- Reliability data obtained from the annual service quality reports filed with the Commission.

Ten years of FERC Form 1 and reliability data have been provided for each of the utilities, except for Sharyland. The Oncor section of this report discusses this exception in detail. The VM rule 16 TAC § 25.96 took effect in January 2013, hence all utilities have reported VM spending for 2012 or 2013 and the subsequent years. In addition, the VM and reliability data in this report are for Texas retail customers only; whereas all other spending data from FERC Form 1 includes all of the utilities' distribution customers – sometimes outside of Texas. This distinction is relevant for EPE, SPS, and SWEPCO because the service areas of these three utilities extend into other states.

The figures are labelled Figures A through N in each section and captured a 10-year period. Below are details of each.

Figure (A): Distribution Gross Capital Additions - This figure shows the cost of distribution facilities added in the given year, without deduction of the cost of distribution facilities that were replaced or otherwise removed. It includes the cost of distribution facilities needed for both new and existing customers (load growth and reliability). The data is from FERC Form 1 for accounts 360 to 369 and 371 to 374. These accounts include the additions for costs for land and land rights, structures and improvements, station equipment, station battery equipment, poles/towers/fixtures, overhead conductors and devices, underground conduit, underground conductors and devices, line transformers, services, installations on customer premises, leased property on customer premises, street lighting and signals, and asset retirement costs. Meters additions (account 370) has been excluded.

Figure (B): Distribution Gross Capital Additions per Customer – This figure shows the distribution gross capital additions in Figure (A) divided by the utility's number of customers.

Figure (C): Distribution Maintenance Spending – This figure shows maintenance expenses reported in FERC accounts 590 to 596 and 598. These accounts include maintenance supervision and engineering, maintenance of structures, station equipment, overhead lines, underground lines, line transformers, street lighting and signal sets, and miscellaneous distribution plant. Maintenance of meters (account 597) has been excluded.

Figure (D): Distribution Maintenance Spending per Customer – This figure shows the distribution maintenance spending for Figure (C) divided by the utility's number of customers.

Figure (E): Distribution Operations Spending – This figure shows operations expenses reported in FERC accounts 580 to 585 and 587 to 589. These accounts include operation supervision and engineering, load dispatching, station expenses, overhead line expenses, underground line expenses, street lighting and signal expenses, customer installations expenses, miscellaneous expenses, and rents. Meter expenses (account 586) has been excluded.

Figure (F): Distribution Operation Spending per Customer - This figure shows the distribution operations expenses in Figure (E) divided by the utility's number of customers.

Figure (G): Distribution O&M Spending – This figure combines the expenses from Figure (C) and Figure (E).

Figure (H): Distribution O&M Spending per Customer - This figure shows the distribution O&M expenses in Figure (G) divided by the utility's number of customers.

Figure (I): Vegetation Management Spending – This figure shows the VM expenses reported to the Commission. Some utilities account for routine VM and VM associated with service restoration after major storms separately. If this is the case for a given utility, these two types of VM spending are depicted separately on the graph.

Figure (J): Vegetation Management Spending per Customer - This figure shows the VM expenses in Figure (I) divided by the utility's number of customers.

Figure (K): System Average Interruption Frequency Index (SAIFI) – This figure shows the average number of times that a customer's service is interrupted. SAIFI is calculated by summing the number of customers interrupted for each event and dividing by the total number of customers on the system being indexed. The reported SAIFI values do not include a momentary interruption, which 16 TAC § 25.52(c)(3) defines as a single operation of an interrupting device which results in a voltage zero and the immediate restoration of voltage. 16 TAC § 25.52 specifies

four types of system outages. The two shown in this figure are the SAIFI values for major events (e.g., major storms) and forced outages. The other two types of system outages are scheduled outages and outside-causes outages, which are not included in this figure. A lower SAIFI value represents a higher level of service reliability.

Figure (L): Cumulative SAIFI Proportions - This figure shows the proportion of system SAIFI from each of the four types of outages from the utility's annual service quality reports. The proportions are derived by adding each of the four outage types over a ten-year period. The four types of outages match the outages described in 16 TAC § 25.52 and are forced, scheduled, outside causes, and major events. The reported SAIFI values do not include a momentary interruption.

Figure (M): System Average Interruption Duration Index (SAIDI) – This figure shows the average amount of time a customer's service is interrupted during the reporting period. SAIDI is calculated by summing the restoration time for each interruption event multiplied by the number of customers interrupted for each event and dividing by the total number of customers. SAIDI is expressed in minutes. The reported SAIDI values do not include a momentary interruption, which 16 TAC § 25.52(c)(3) defines as a single operation of an interrupting device which results in a voltage zero and the immediate restoration of voltage. 16 TAC § 25.52 specifies four types of system outages. The two shown in this figure are the SAIDI values for major events (e.g., major storms) and forced outages. The other two types of system outages are scheduled outages and outside-causes outages, which are not included in this figure. A lower SAIDI value represents a higher level of service reliability.

Figure (N): Cumulative SAIDI Proportions - This figure shows the proportion of system SAIDI from each of the four types of outages from the utility's annual service quality reports. The proportions are derived by adding each of the four outage types over a ten-year period. The four types of outages match the outages described in 16 TAC 25.52 and are forced, scheduled, outside causes, and major events. The reported SAIDI values do not include a momentary interruption.

Section 2B: AEP Texas, Inc. (AEP Texas)

Number of Customers	1,093,593
Miles of Distribution Lines	44,600
Number of Customers per mile of Distribution Line	24

AEP TCC and AEP TNC, which operated within ERCOT, merged to form AEP Texas Inc. on December 31, 2016. For time periods before the merger, TCC and TNC filed separate data with FERC, but filed joint VM reports with the Commission that combined their data. In the final order for the merger AEP was ordered to combine the SAIDI and SAIFI benchmarks for TCC and TNC into a singular company-wide metric. Accordingly, the data in the charts below reflect the new combined company starting 2017. The data from previous years for the two separate companies have been combined to provide a more meaningful comparison.

AEP Texas major event SAIDI was very high in 2021 due to Winter Storm Uri and 2017 due to Hurricane Harvey and necessitated different scaling from SAIDI forced outages. Hence, it is shown in two separate graphs Figure 2B_M (i) and (ii).

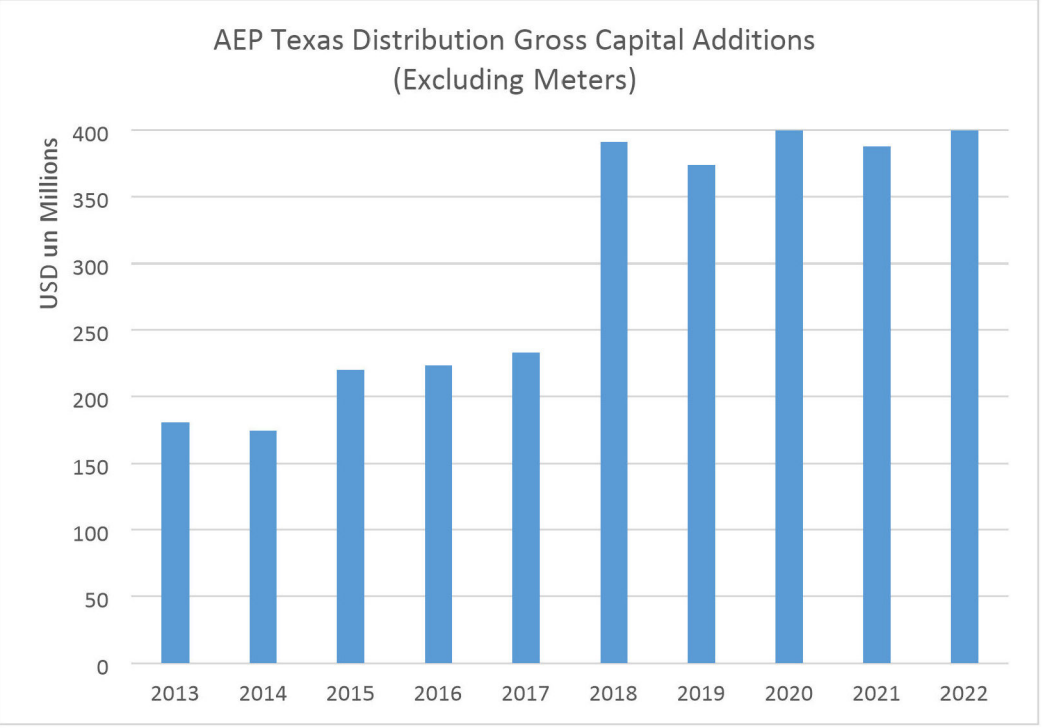

Figure 2B_A: AEP Texas Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

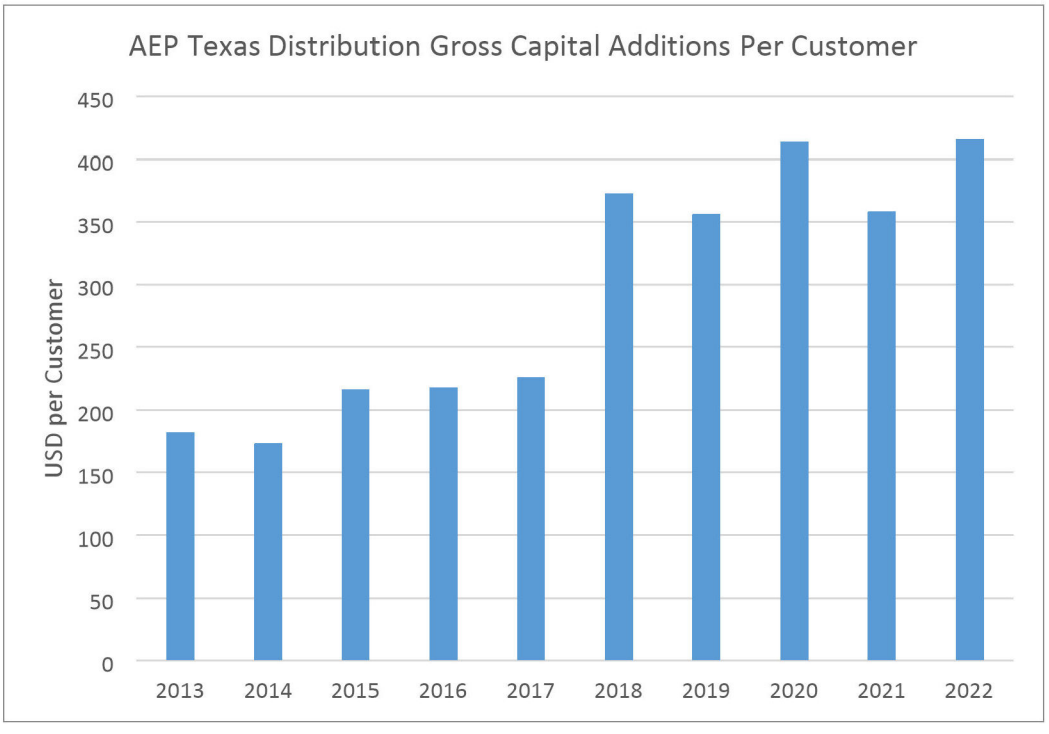

Figure 2B_B: AEP Texas Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

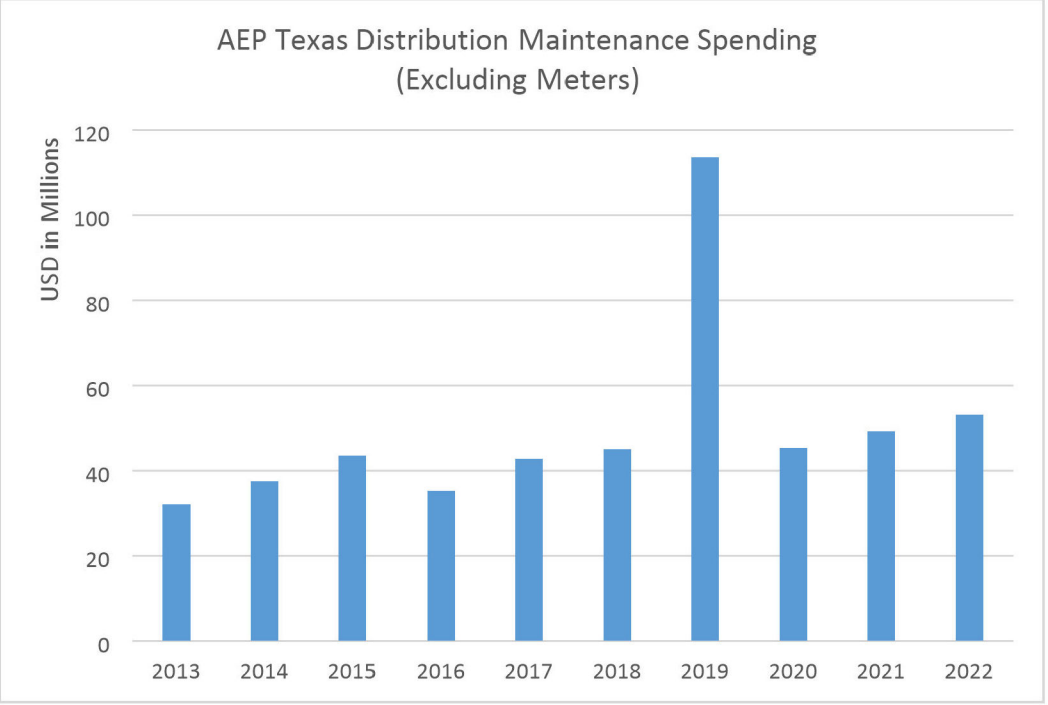

Figure 2B_C: AEP Texas Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

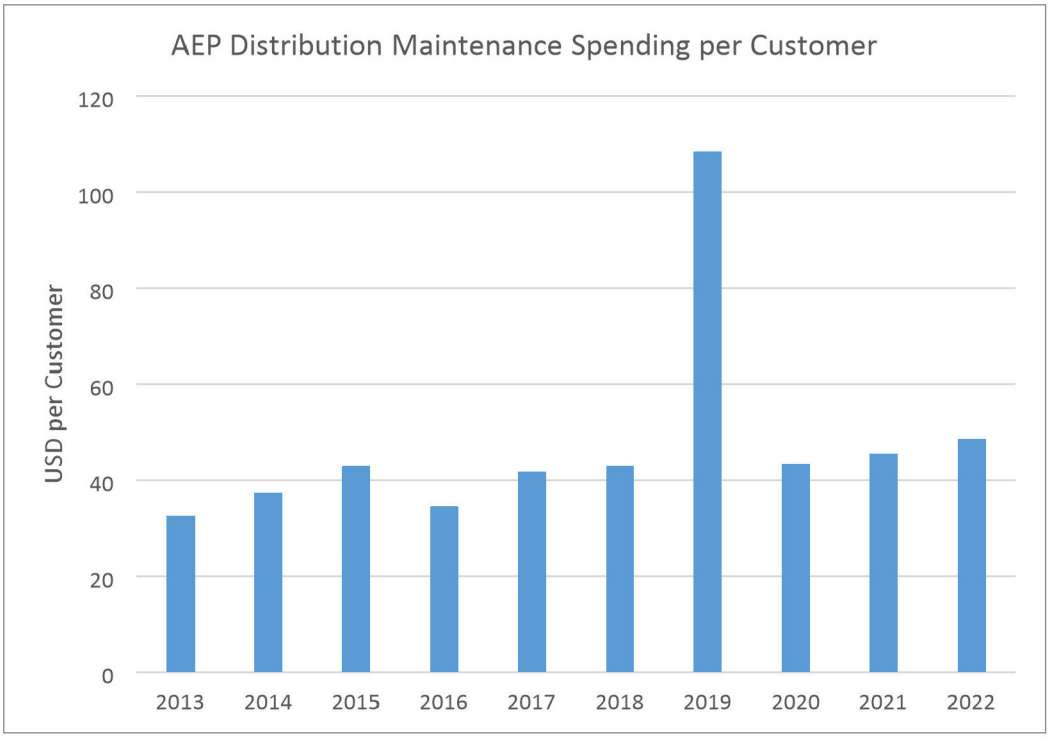

Figure 2B_D: AEP Texas Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

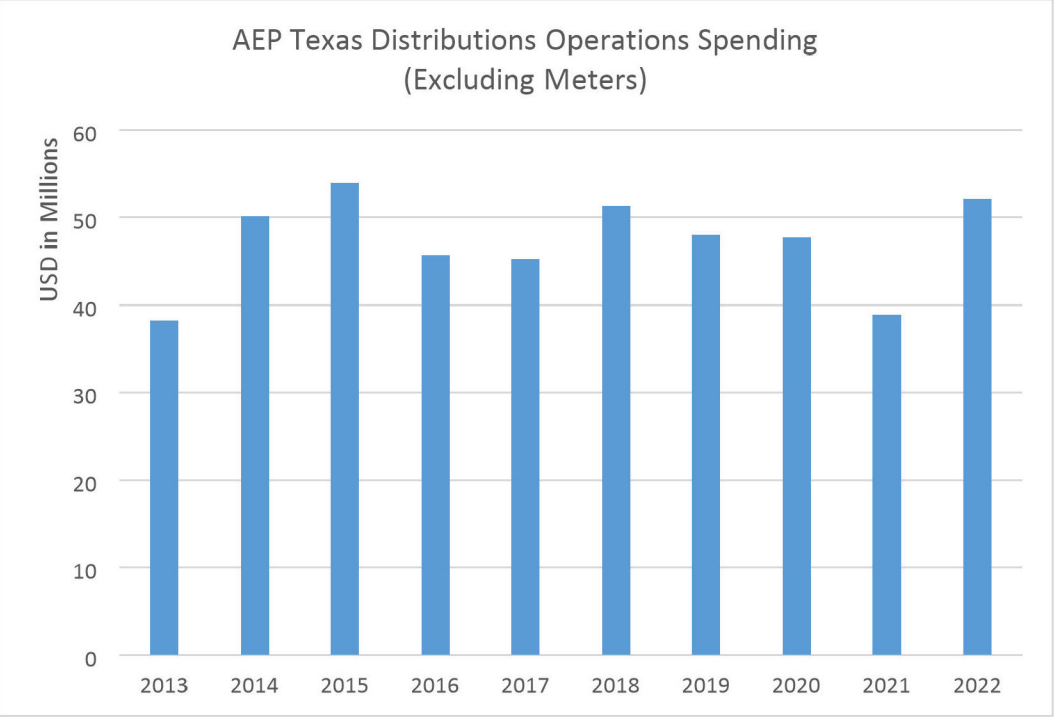

Figure 2B_E: AEP Texas Distribution Operations Spending (Excluding Meters) for 2013 - 2022

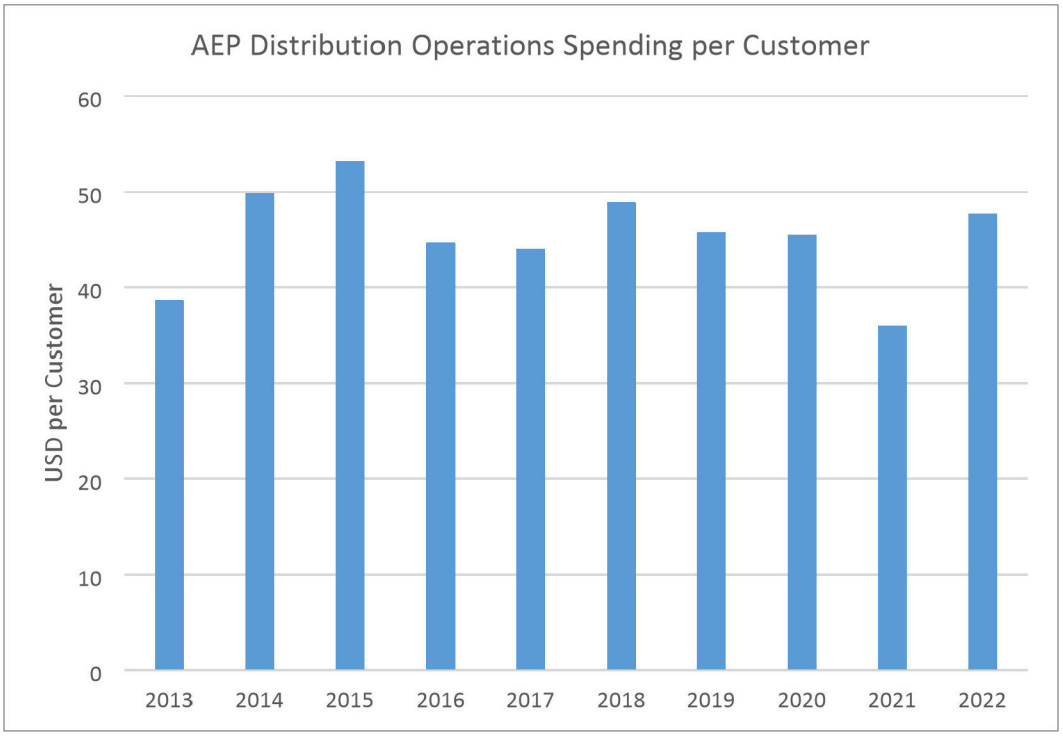

Figure 2B_F: AEP Texas Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

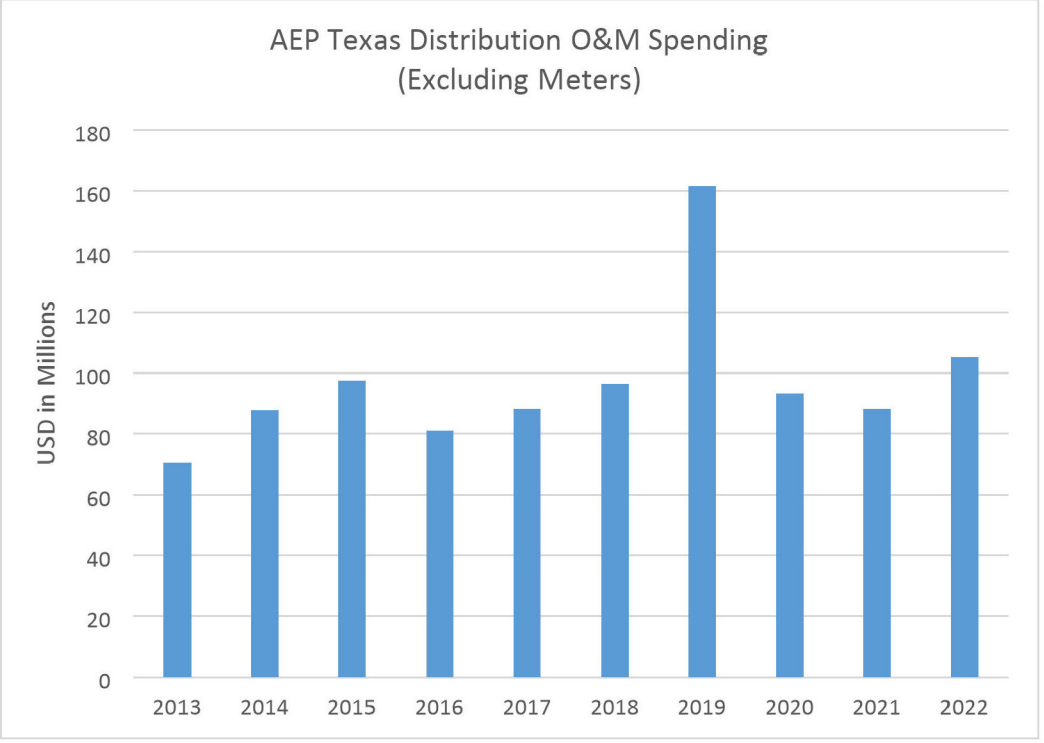

Figure 2B_G: AEP Texas Distribution O&M Spending (Excluding Meters) for 2013 - 2022

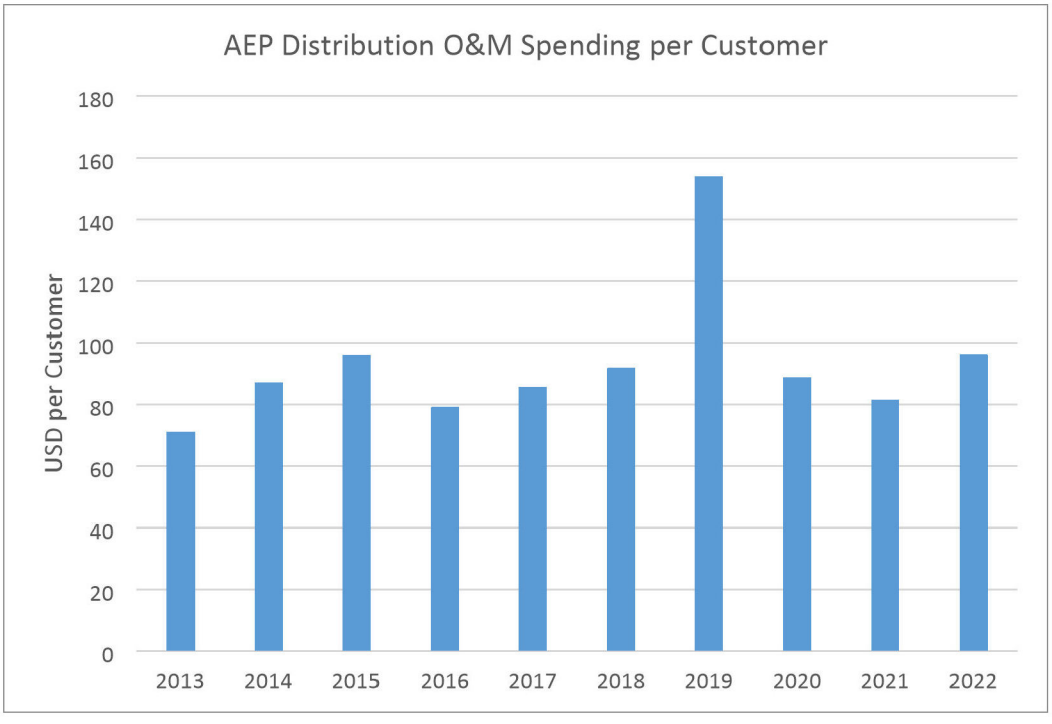

Figure 2B_H: AEP Texas Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

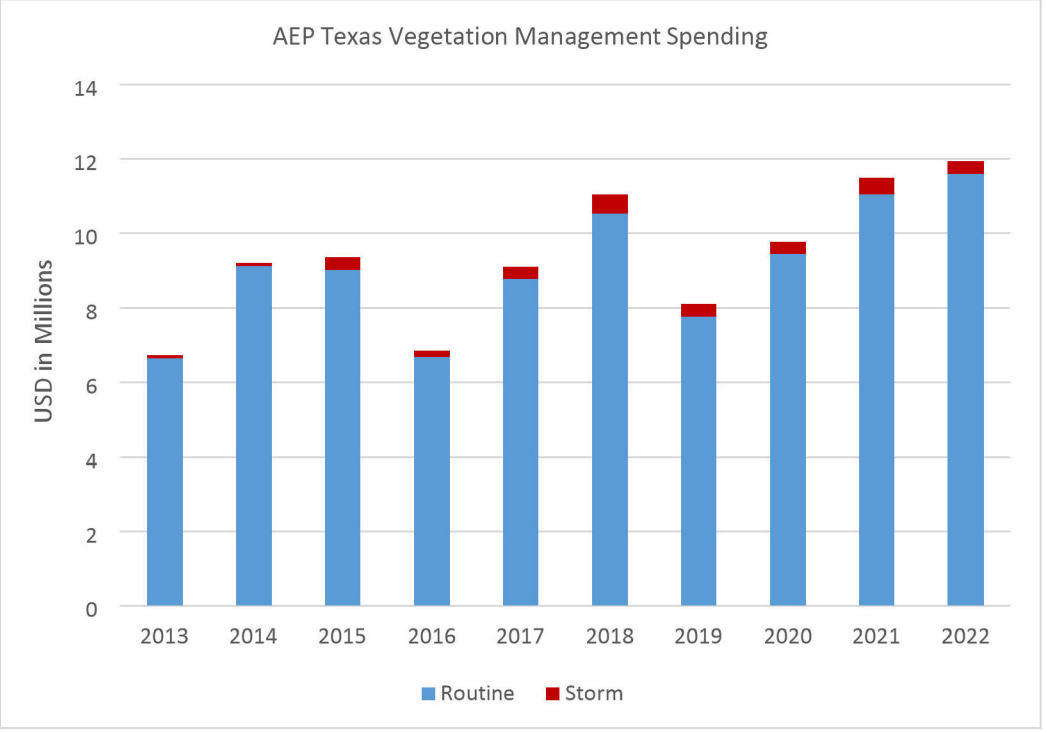

Figure 2B_I: AEP Texas Vegetation Management Spending for 2013 - 2022

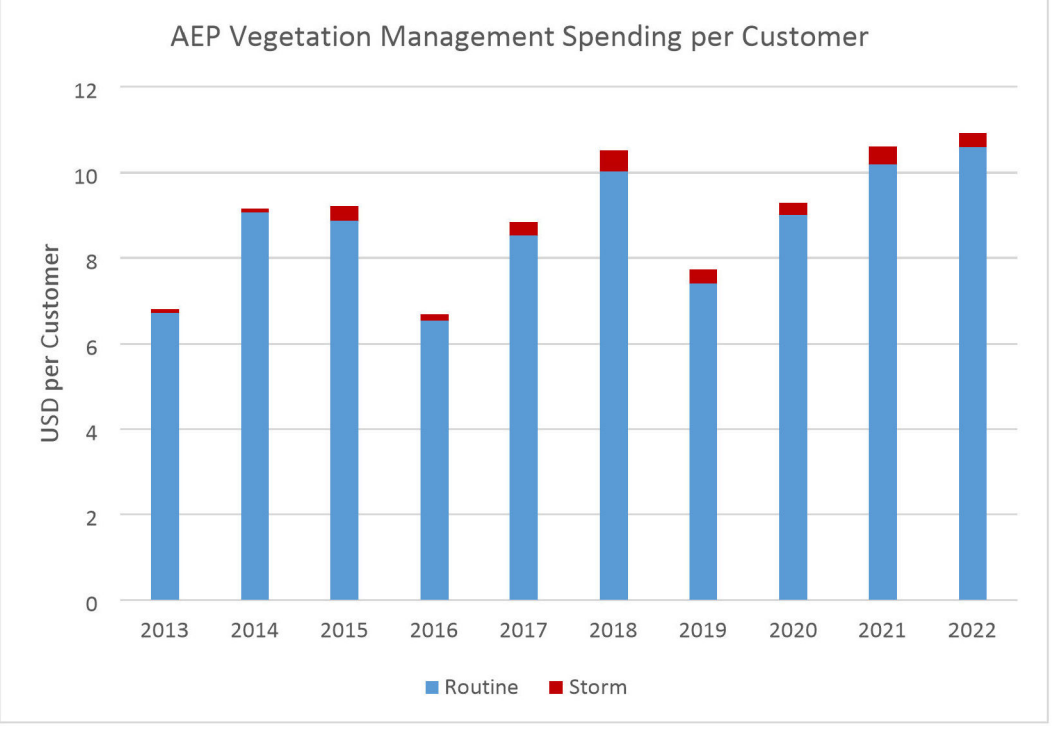

Figure 2B_J: AEP Texas Vegetation Management Spending per Customer for 2013 - 2022

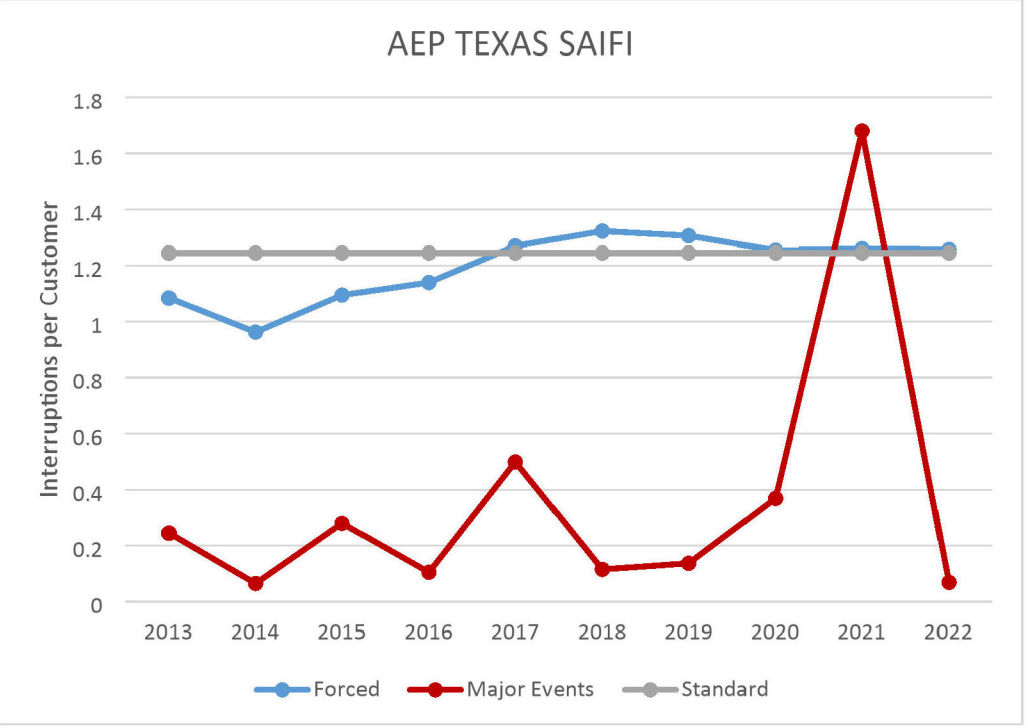

Figure 2B_K: AEP Texas SAIFI for 2013 - 2022

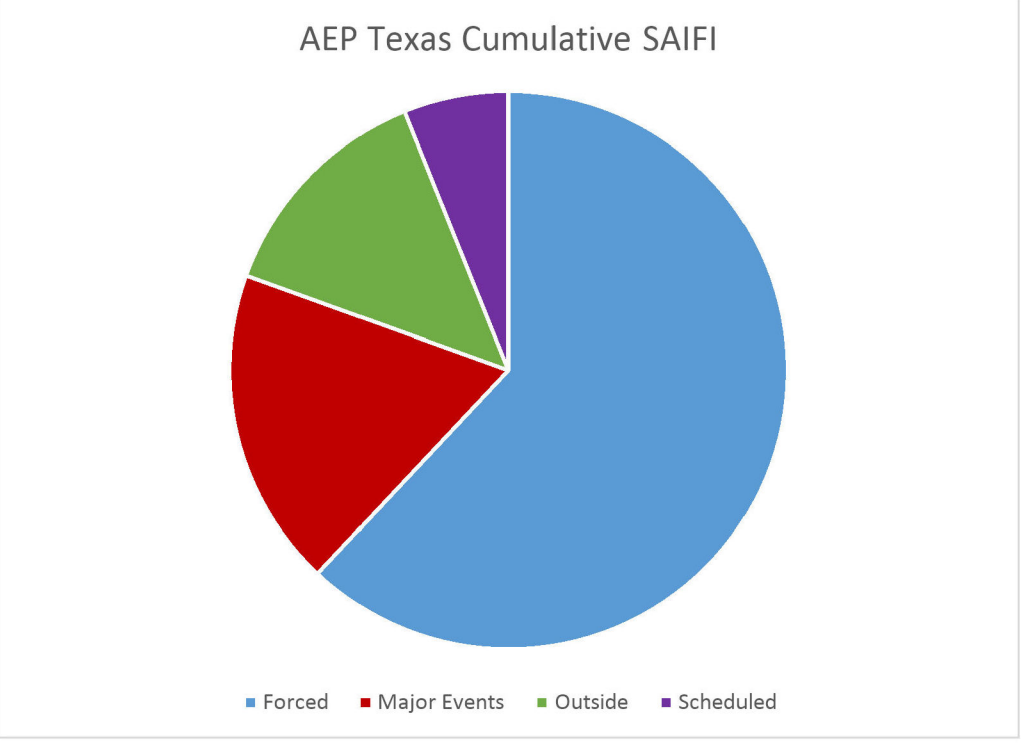

Figure 2B_L: AEP Texas Cumulative SAIFI Proportions for 2013 - 2022

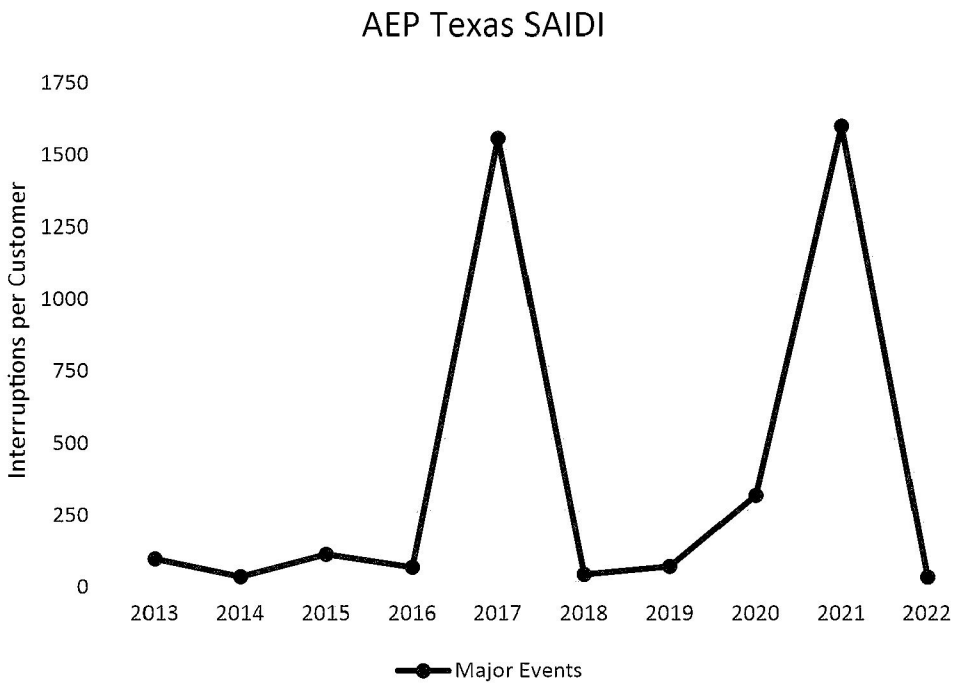

Figure 2B_M (i): AEP Texas SAIDI for Major Events for 2013 - 2022

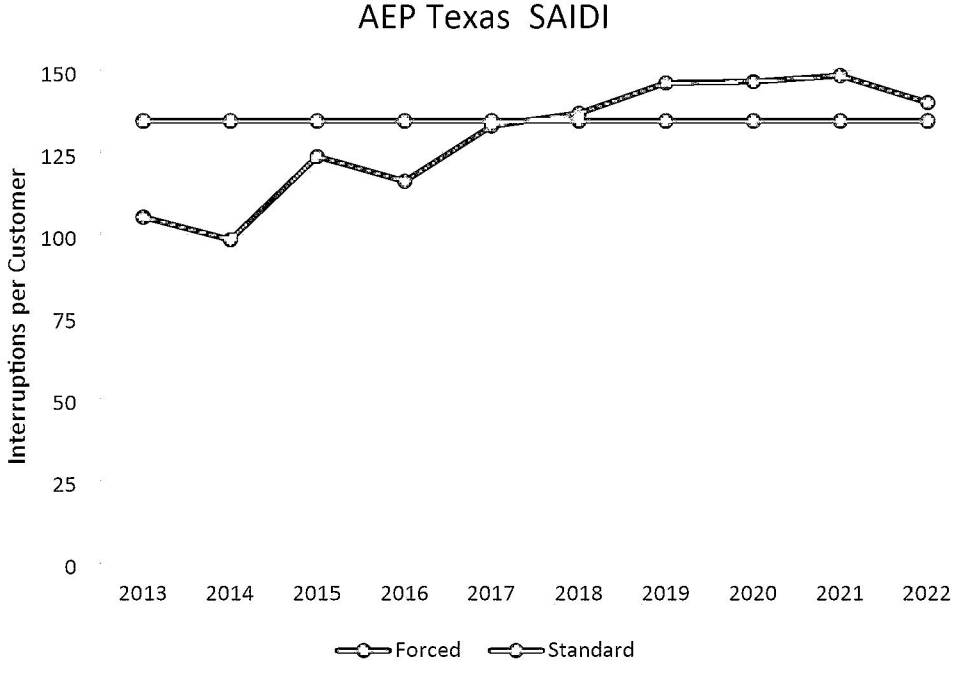

Figure 2B_M (ii): AEP Texas SAIDI for Forced Outages for 2013 - 2022

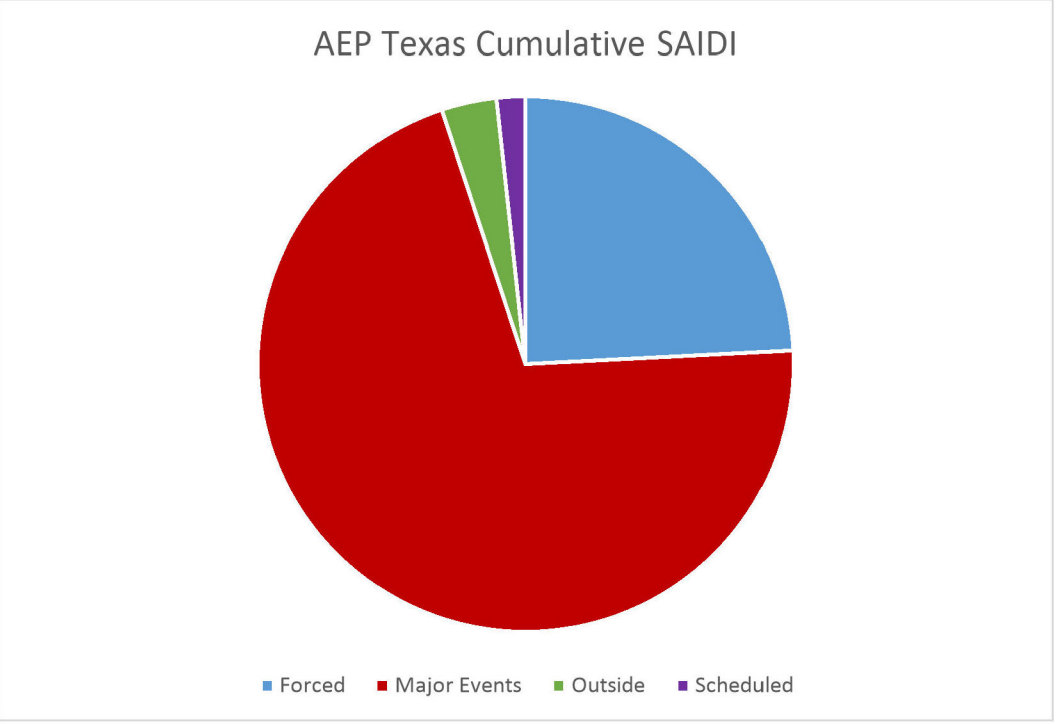

Figure 2B_N: AEP Texas Cumulative SAIDI Proportions for 2013 - 2022

Electric Utility Distribution System Spending and Reliability

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Section 2C: CenterPoint Electric Houston Electric, LLC (CNP)

Number of Customers	2,722,082
Miles of Distribution Lines	29,057
Number of Customers per mile of Distribution Line	93

For CNP Figure 2C_M has been separated into two figures, (i) and (ii), because CNP's major event SAIDI was very high in 2021 due to Winter Storm Uri and in 2017 due to Hurricane Harvey. Therefore, a different scaling than the SAIDI from forced outages were used.

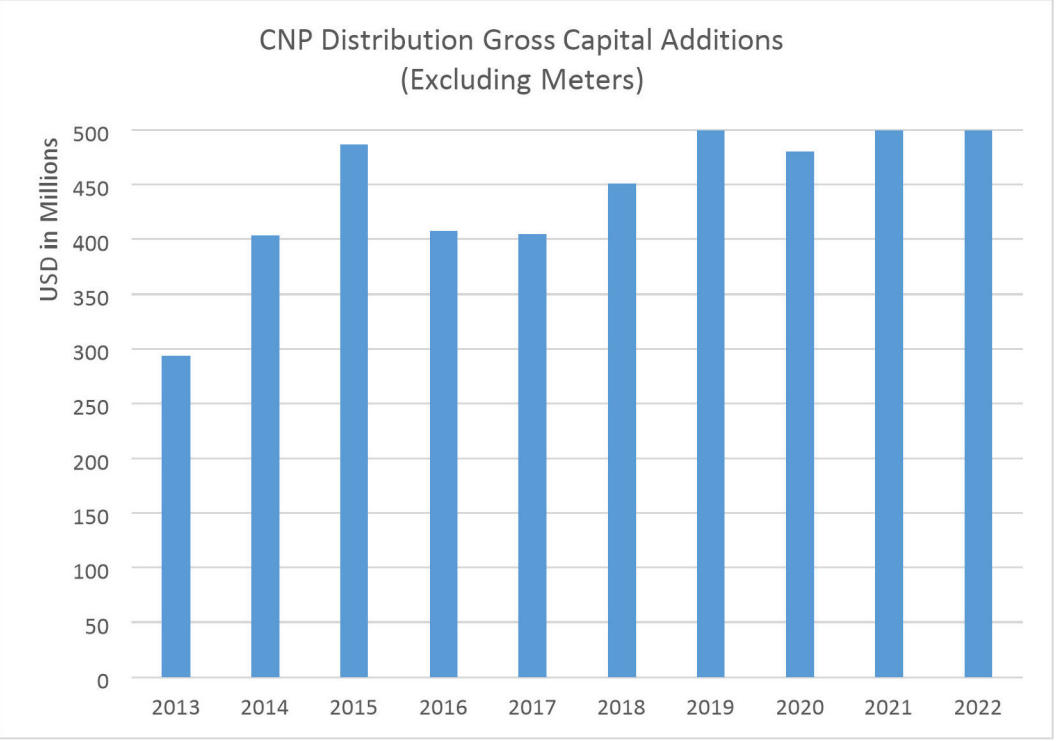

Figure 2C_A: CNP Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

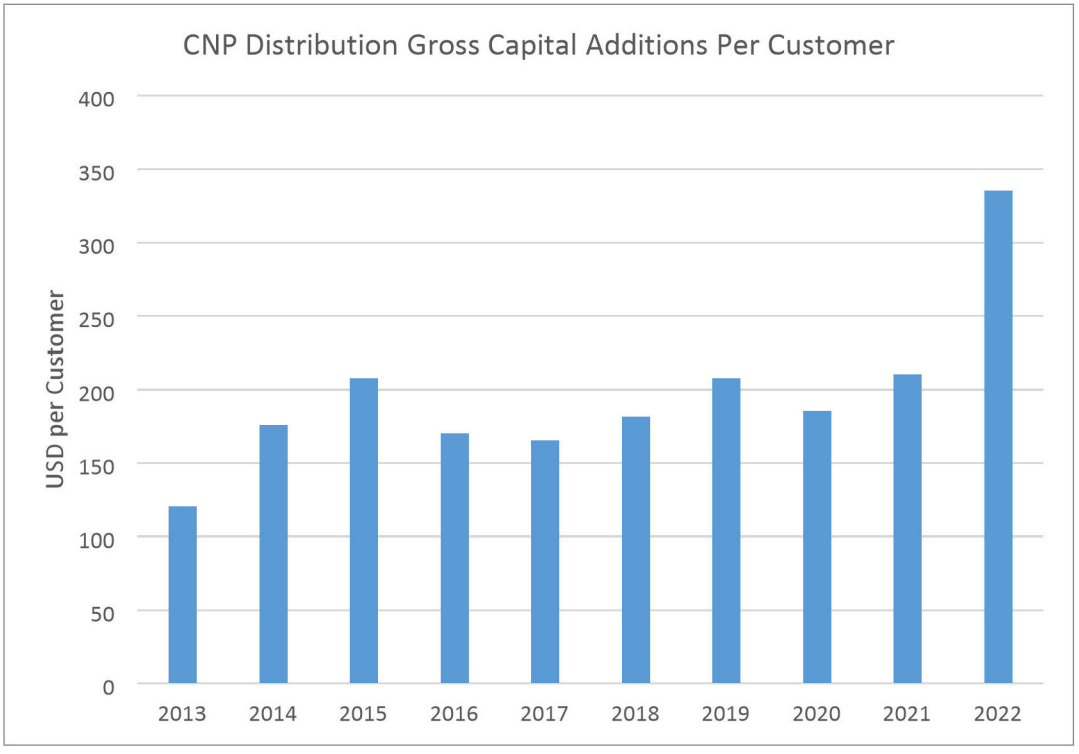

Figure 2C_B: CNP Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

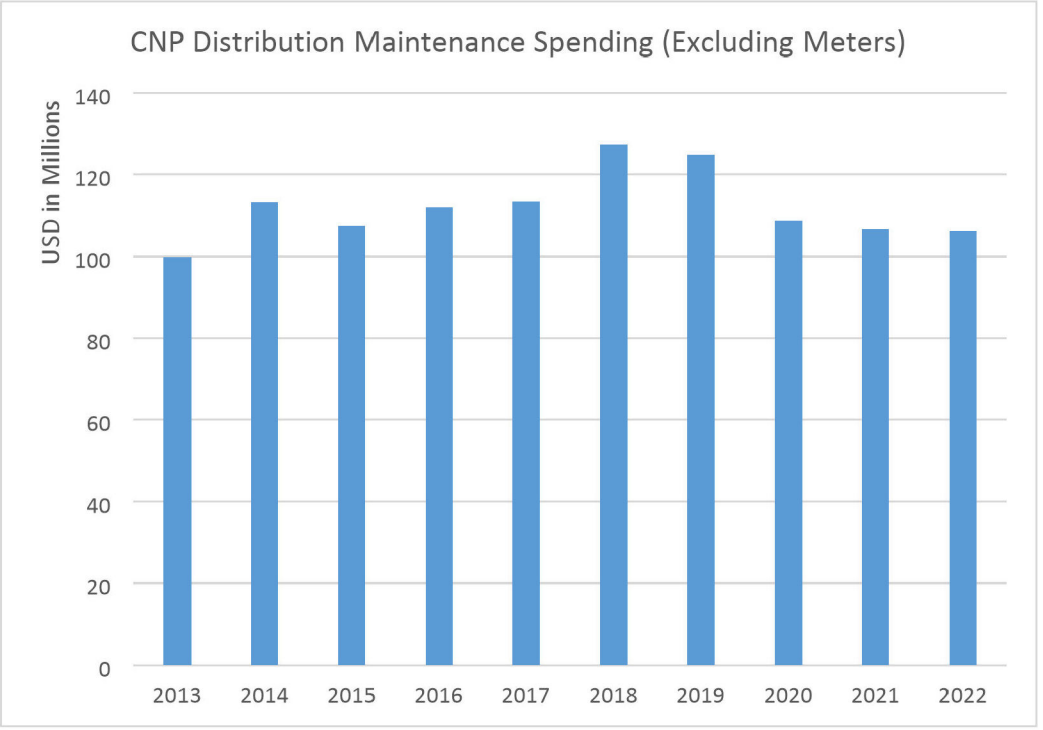

Figure 2C_C: CNP Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

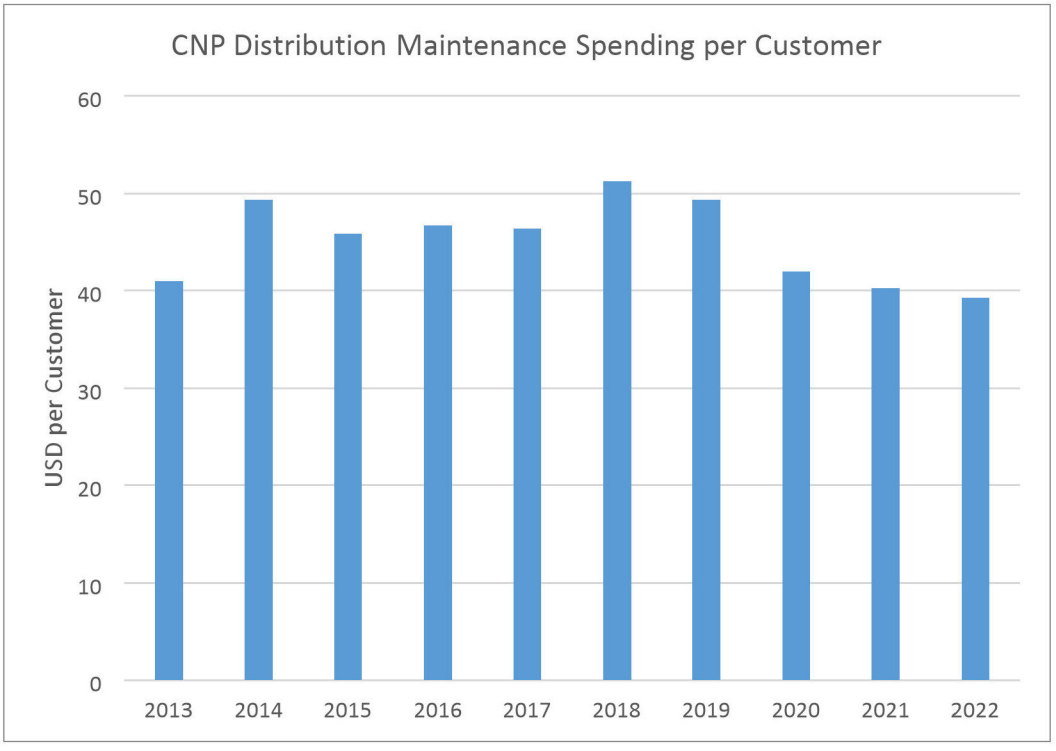

Figure 2C_D: CNP Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

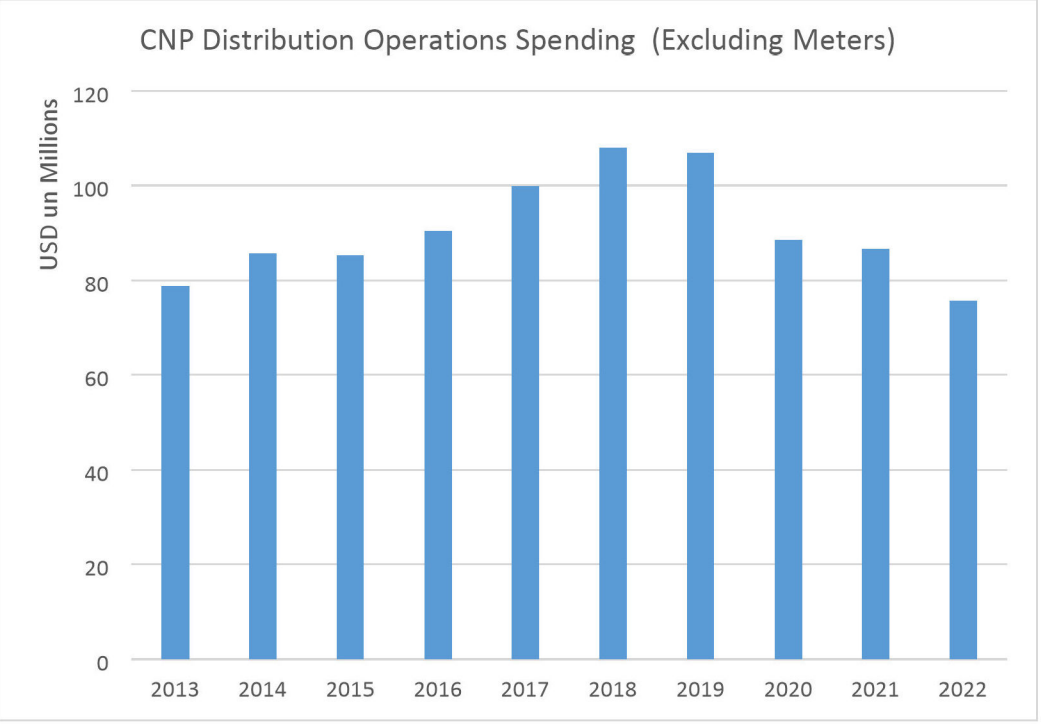

Figure 2C_E: CNP Distribution Operations Spending (Excluding Meters) for 2013 - 2022

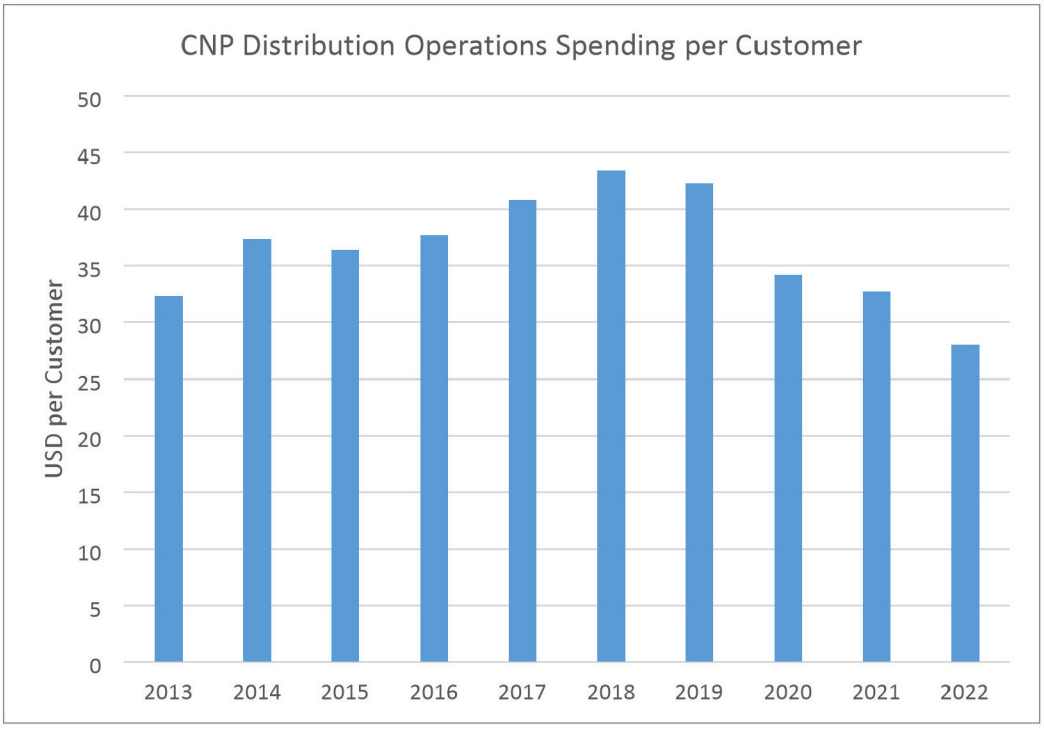

Figure 2C_F: CNP Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

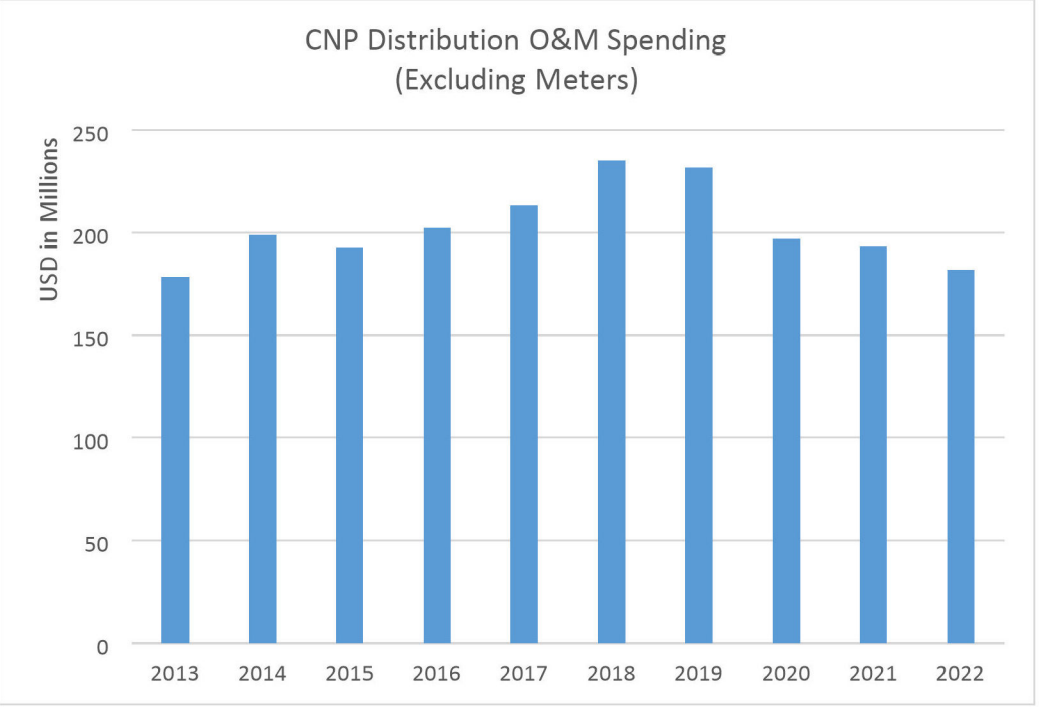

Figure 2C_G: CNP Distribution O&M Spending (Excluding Meters) for 2013 - 2022

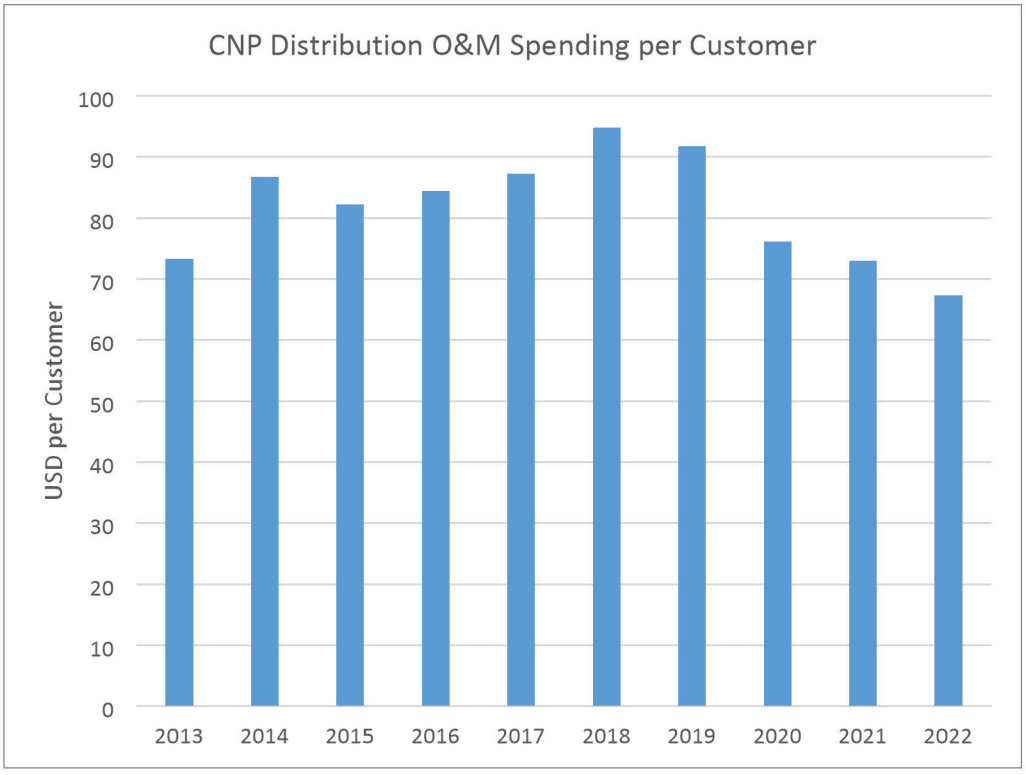

Figure 2C_H: CNP Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

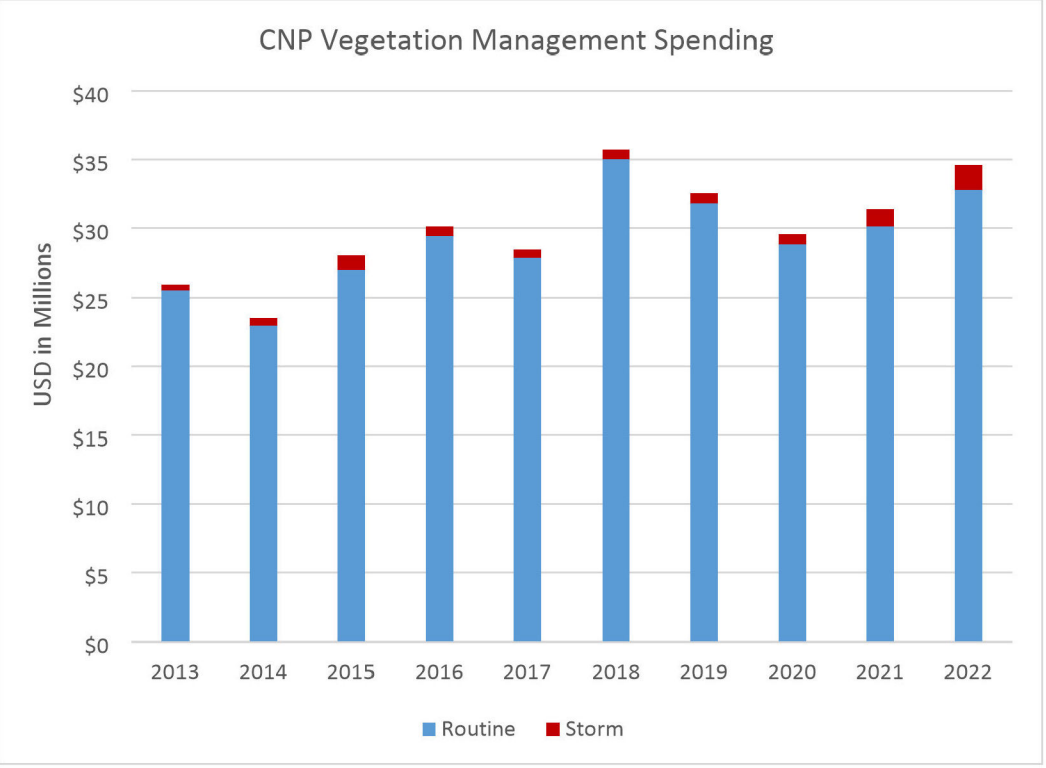

Figure 2C_I: CNP Vegetation Management Spending for 2013 – 2022

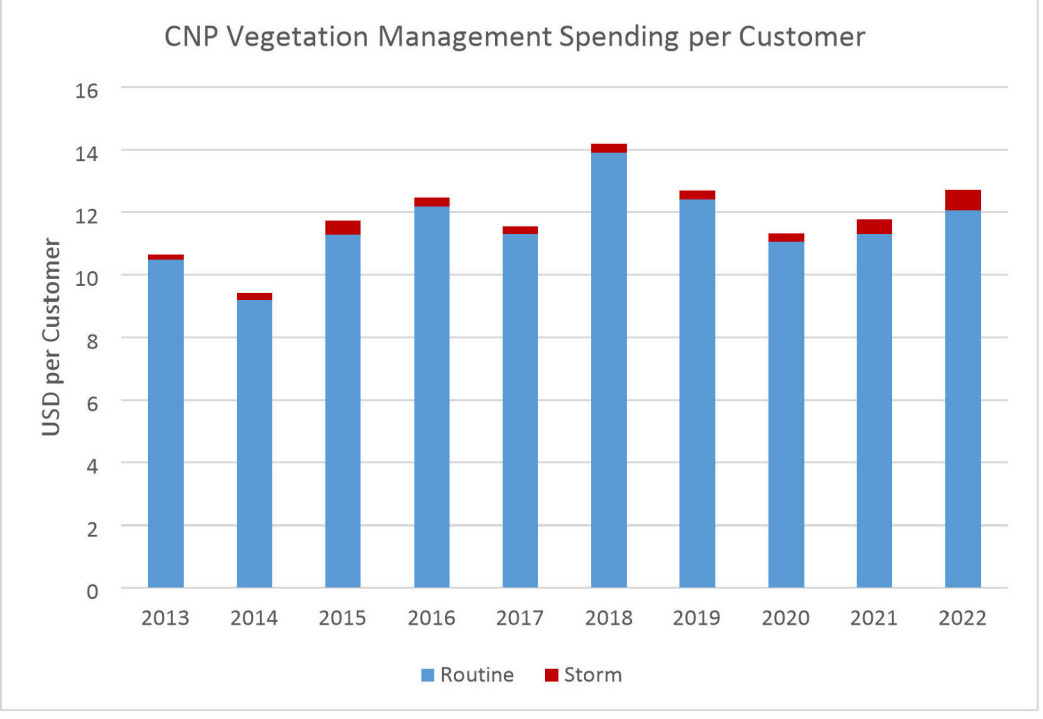

Figure 2C_J: CNP Vegetation Management Spending per Customer for 2013 - 2022

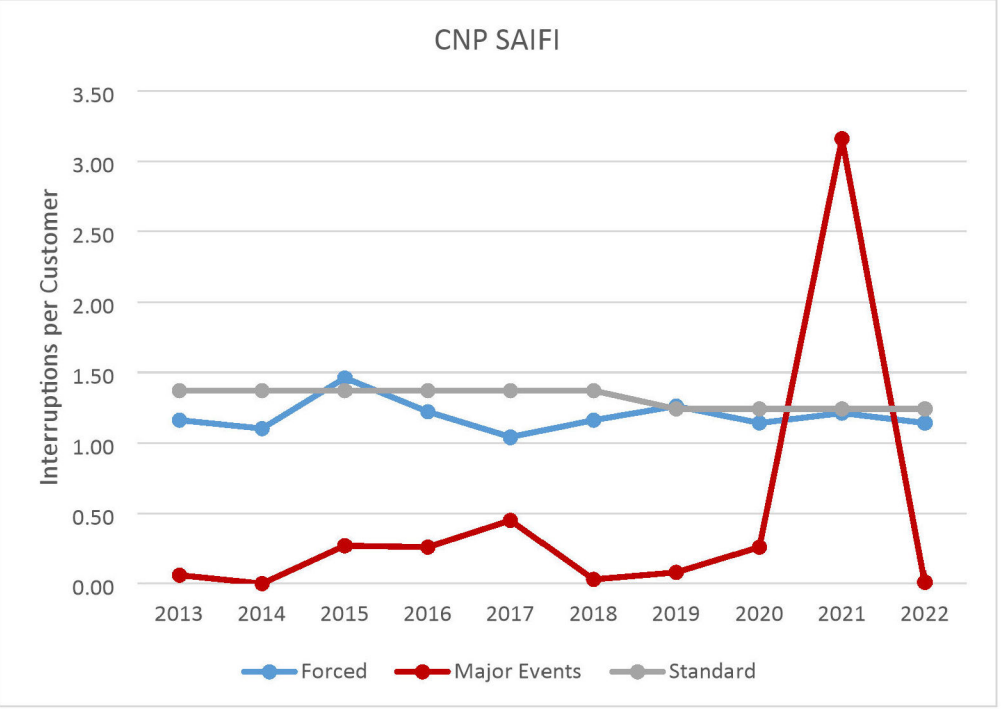

Figure 2C_K: CNP SAIFI for 2013 - 2022

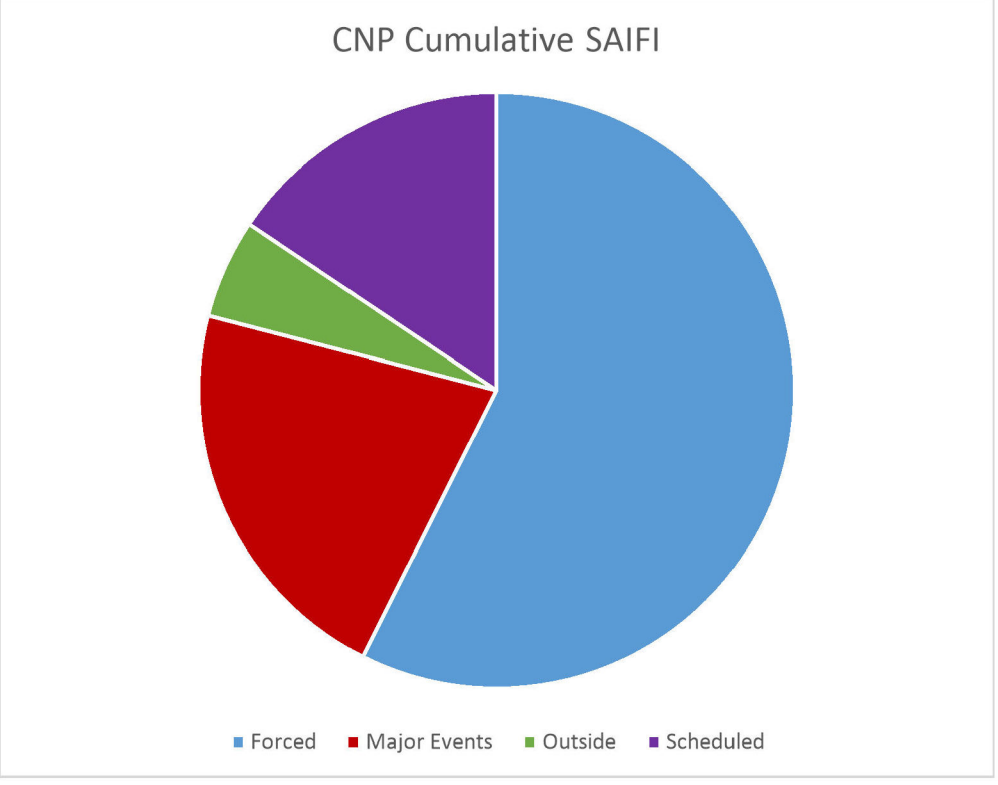

Figure 2C_L: CNP Cumulative SAIFI Proportions for 2013 - 2022

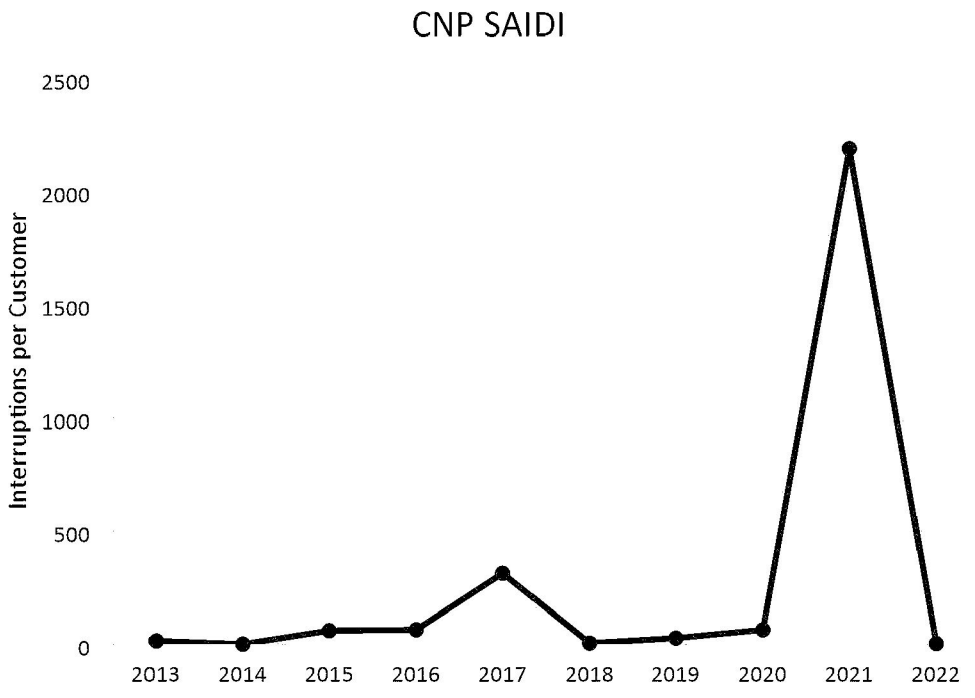

Figure 2C_M (i): CNP SAIDI for Major Events for 2013 - 2022

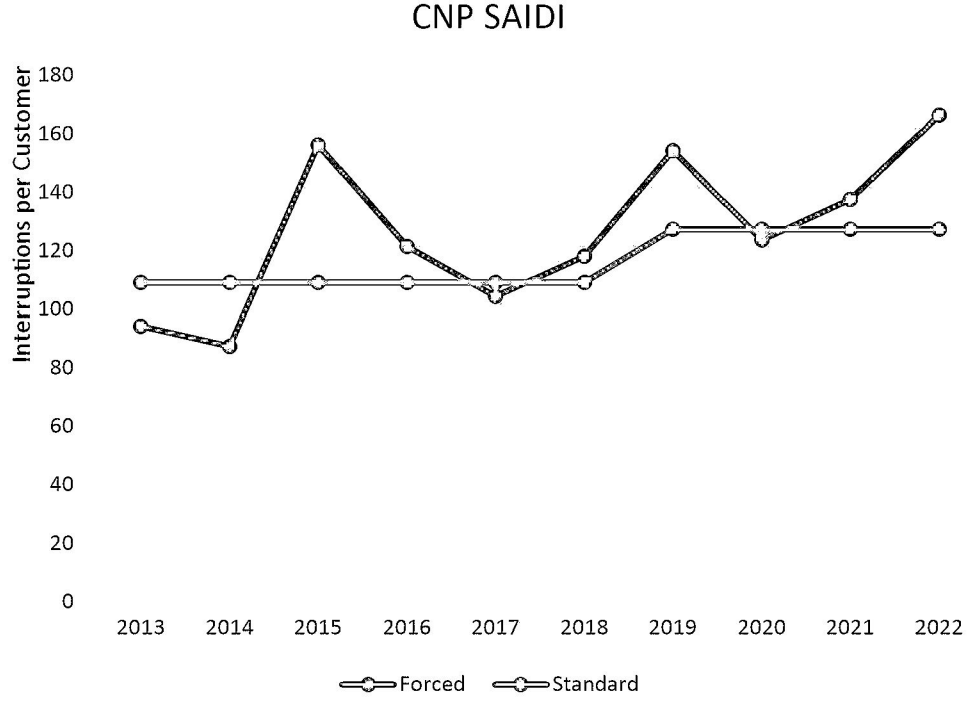

Figure 2C_M (ii): CNP SAIDI from Forced Outages for 2013 - 2022

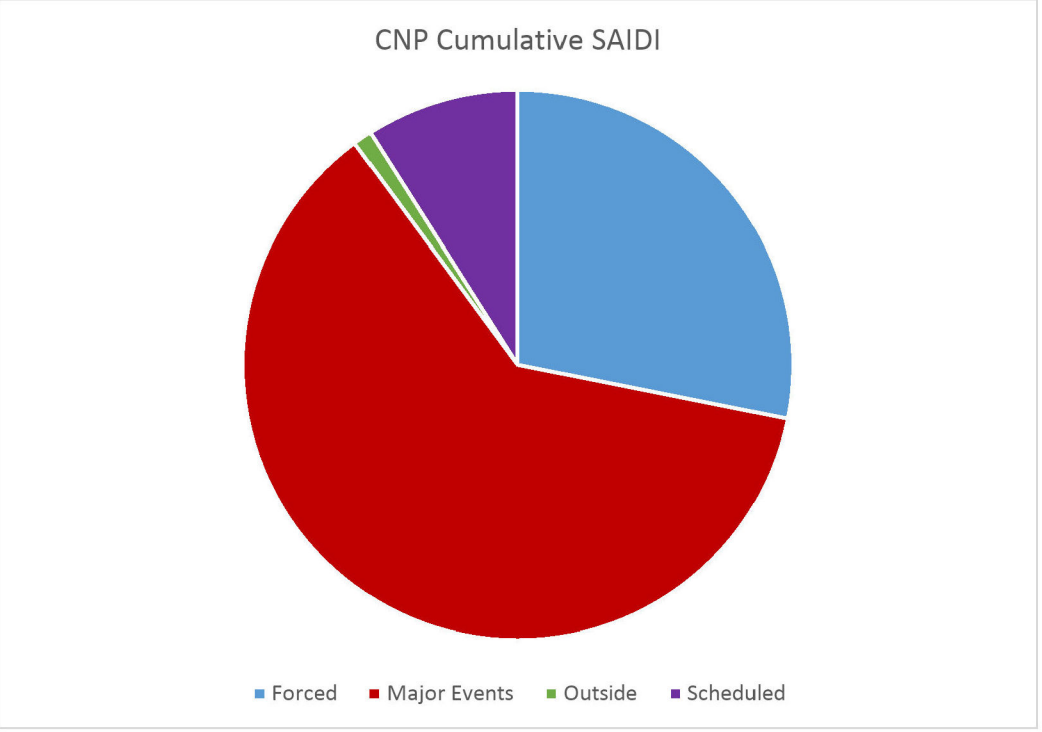

Figure 2C_N: CNP Cumulative SAIDI Proportions for 2013 - 2022

Section 2D: El Paso Electric Company (EPE)

Number of Service Points	288,558
Miles of Distribution Lines	3,135
Number of Service points per mile of distribution line	92

EPE's service area includes portions of both Texas and New Mexico. The spending data and per customer values provided are for all its service area except for VM, which are only for Texas. The reliability data are also only for Texas.

EPE's storm reserve expenditures are not separated out of the VM budget. Hence, storm expenses are not shown separately in Figure 2D_I.

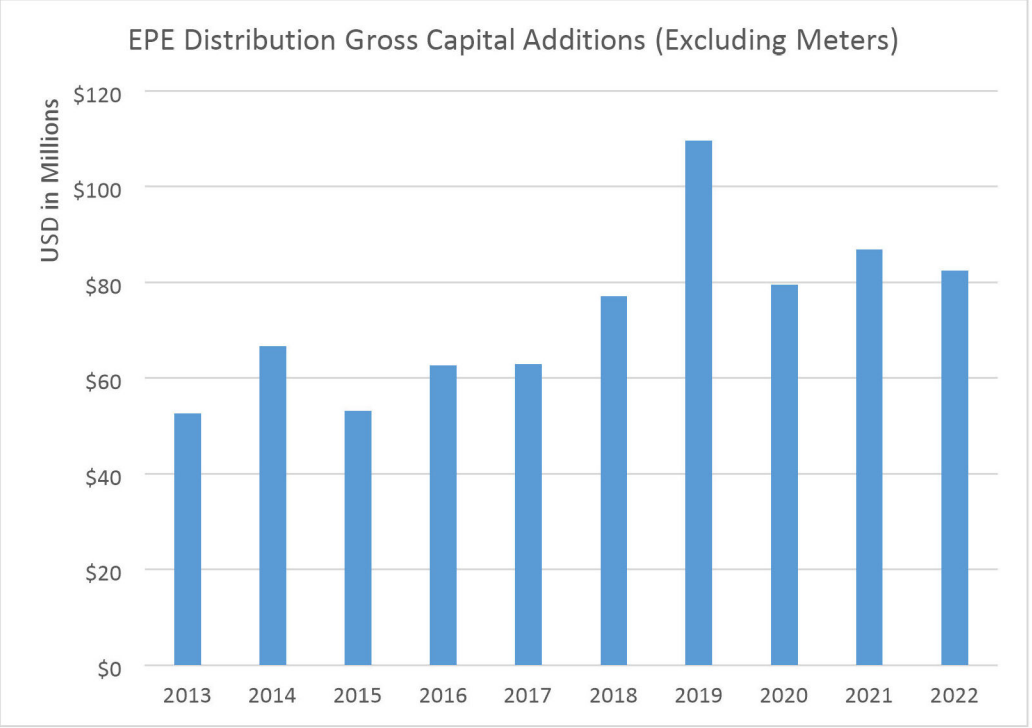

Figure 2D_A: EPE Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

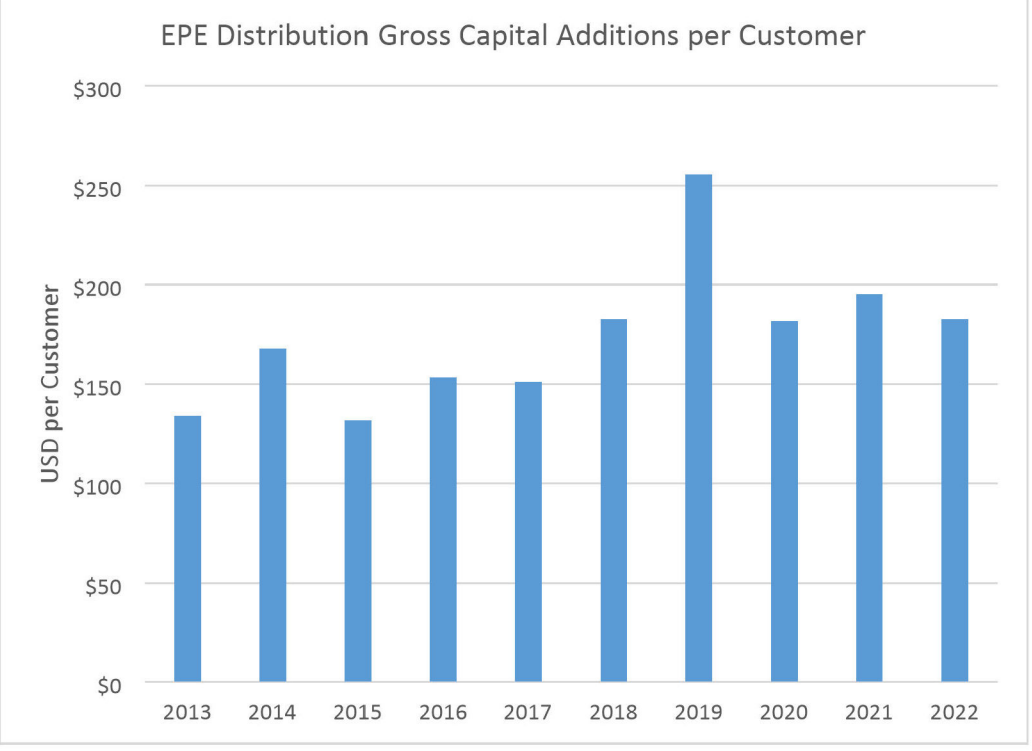

Figure 2D_B: EPE Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

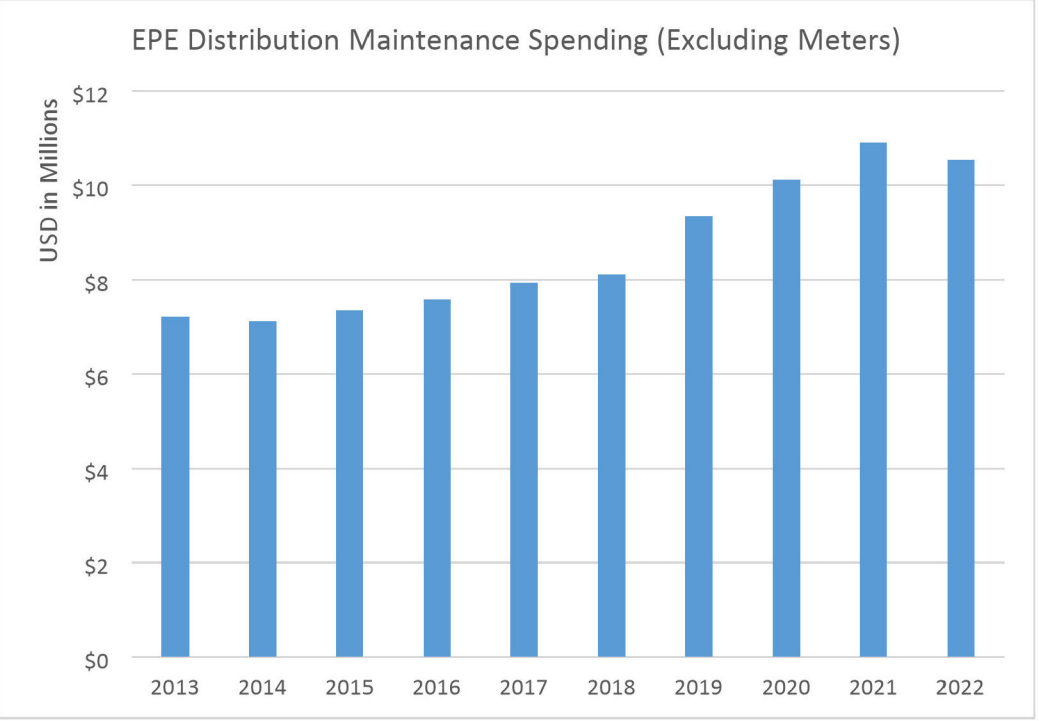

Figure 2D_C: EPE Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

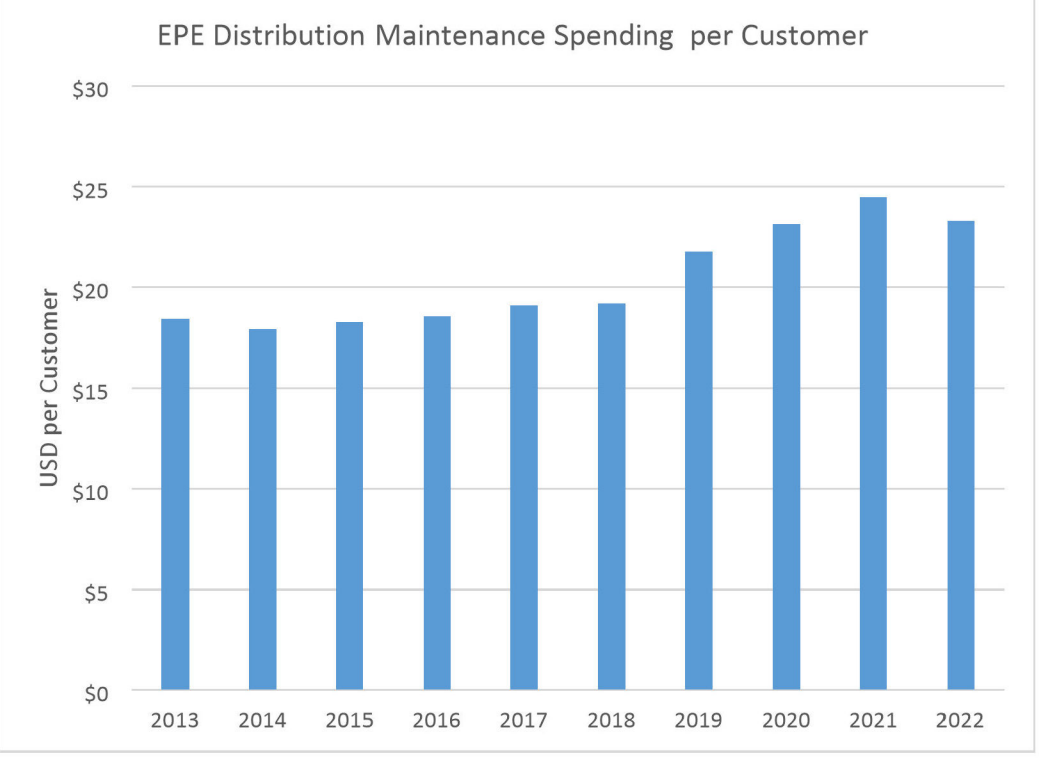

Figure 2D_D: EPE Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2023

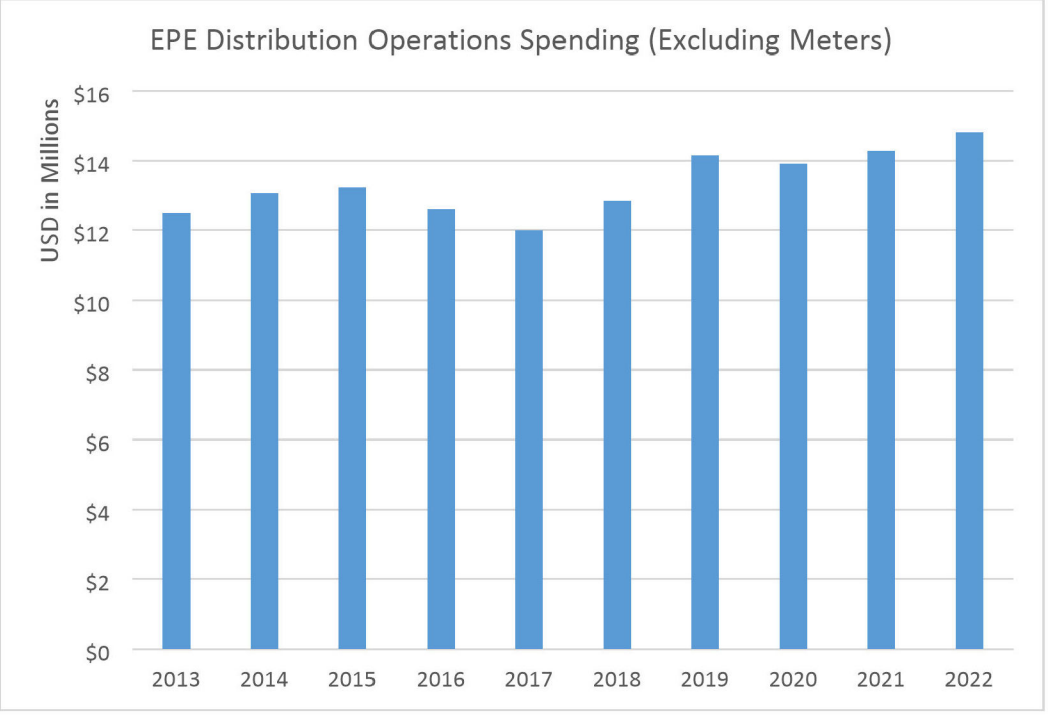

Figure 2D_E: EPE Distribution Operations Spending (Excluding Meters) for 2013 - 2022

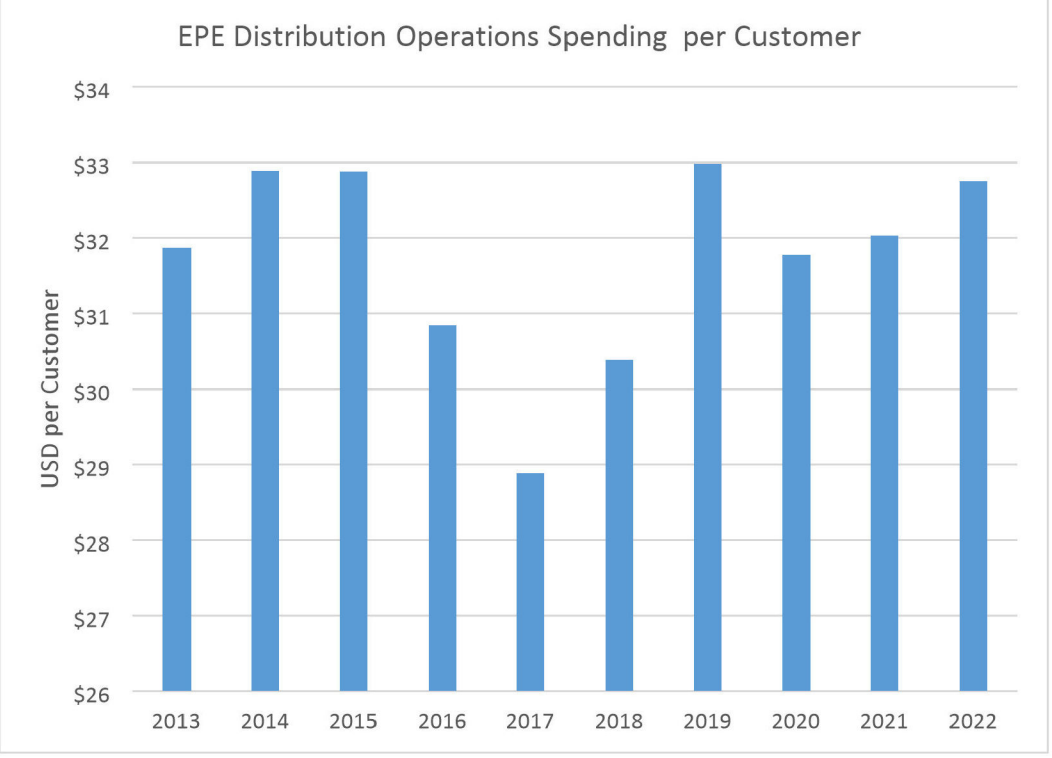

Figure 2D_F: EPE Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

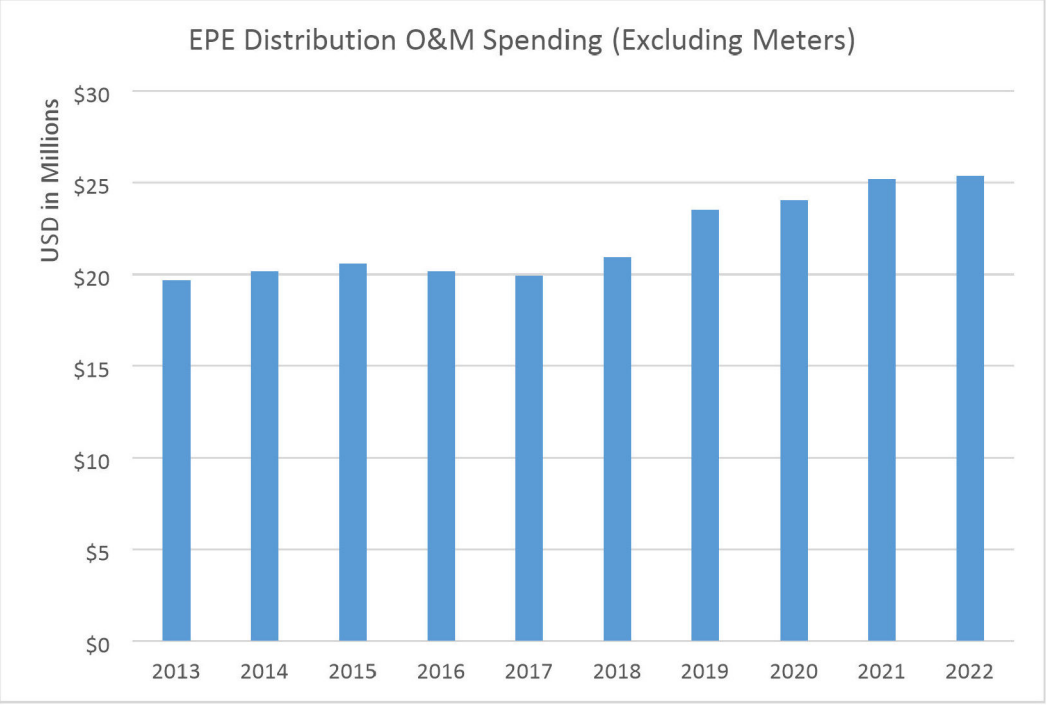

Figure 2D_G: EPE Distribution O&M Spending (Excluding Meters) for 2013 - 2022

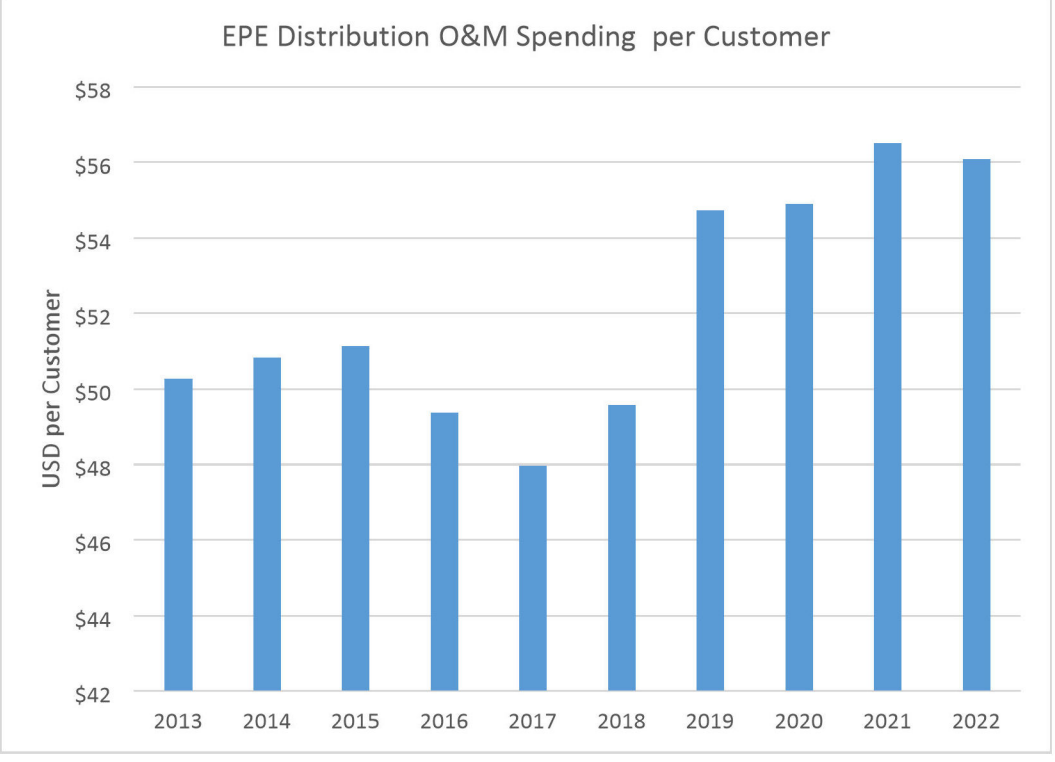

Figure 2D_H: EPE Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

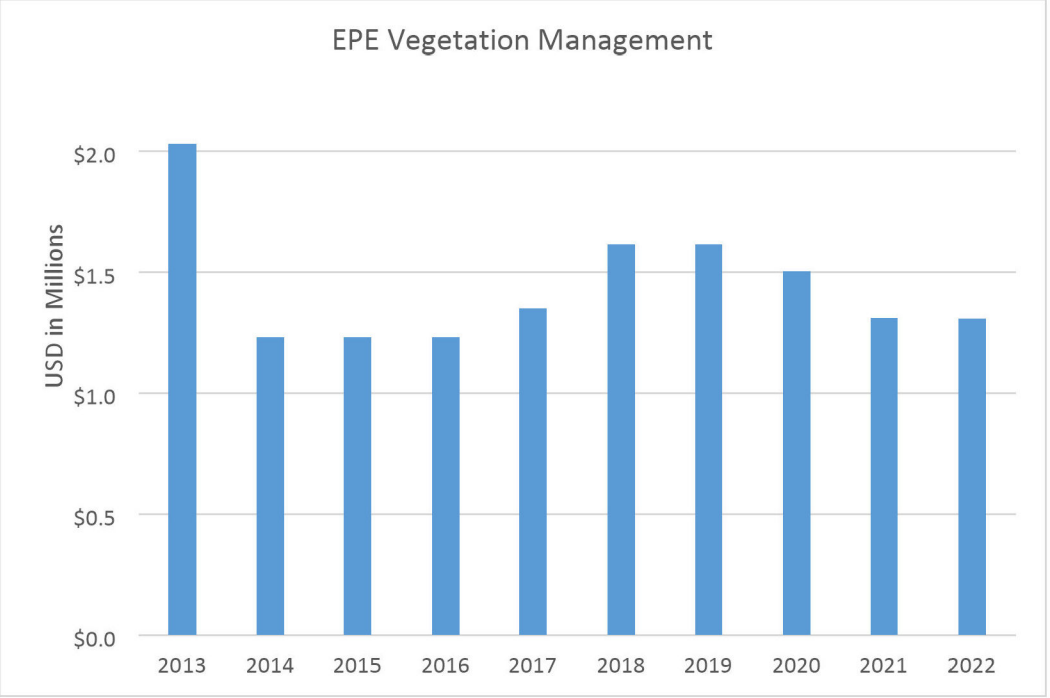

Figure 2D_I: EPE Vegetation Management Spending for 2013 - 2022

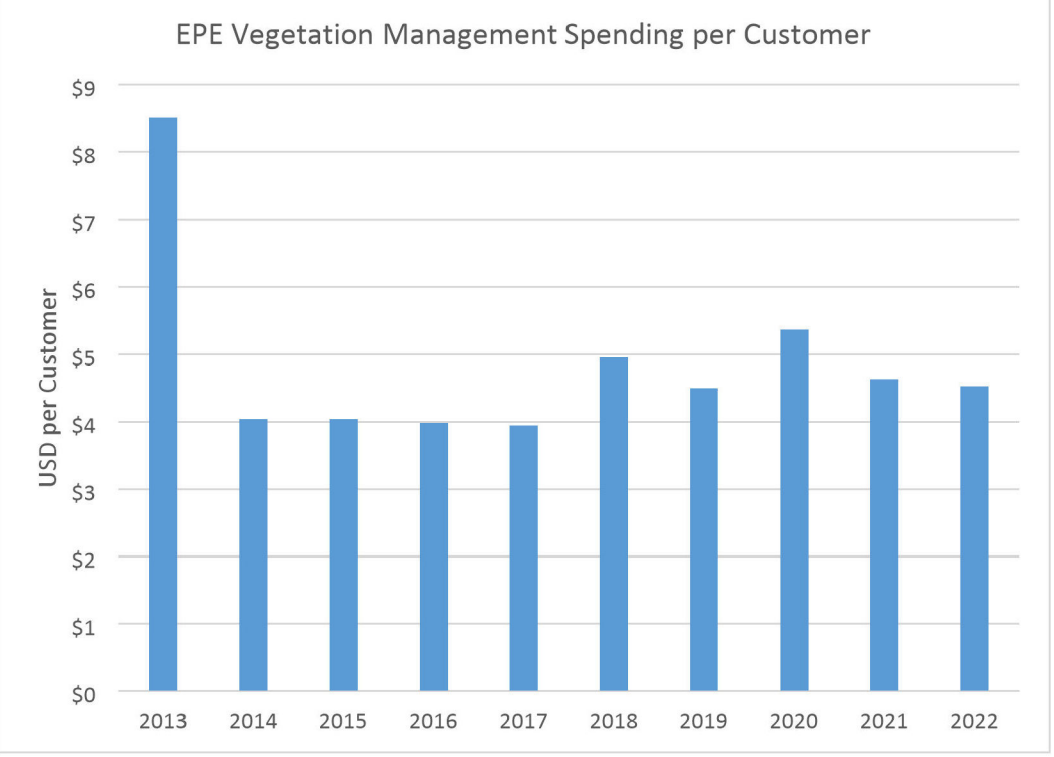

Figure 2D_J: EPE Vegetation Management Spending per Customer for 2013 - 2022

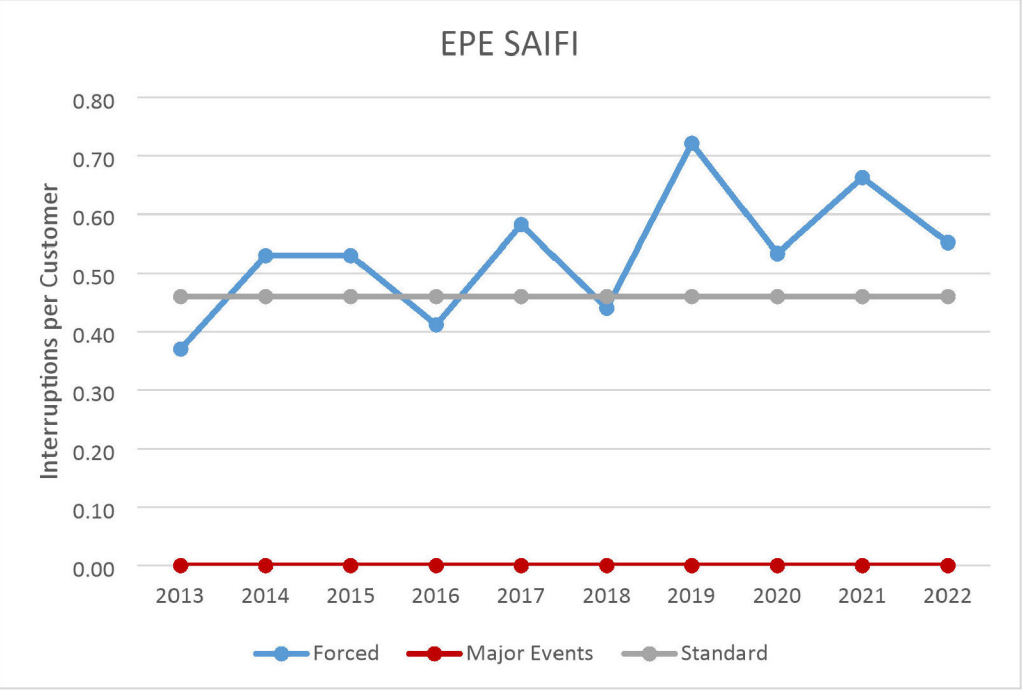

Figure 2D_K: EPE SAIFI for 2013 - 2022

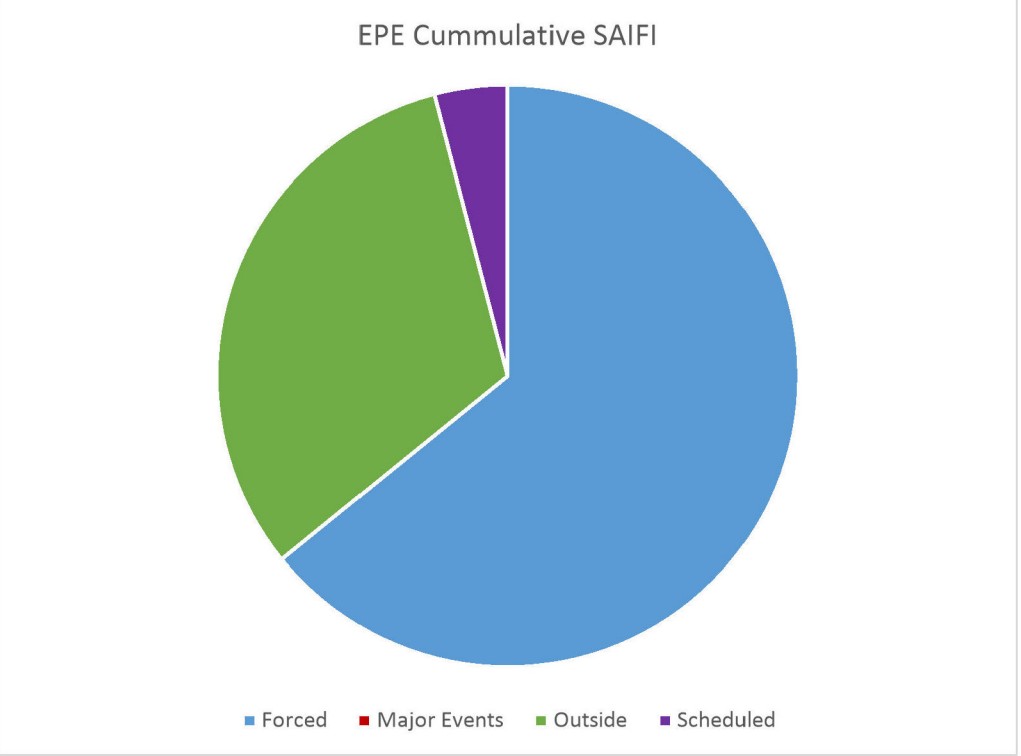

Figure 2D_L: EPE Cumulative SAIFI Proportions for 2013 - 2022

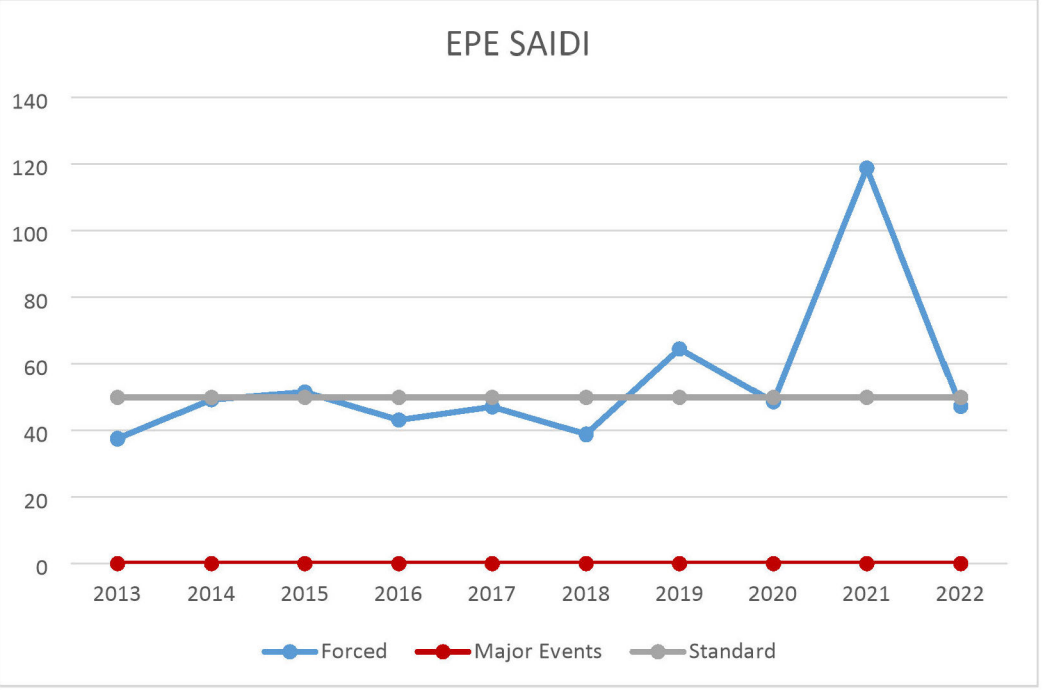

Figure 2D_M: EPE SAIDI for 2013 - 2022

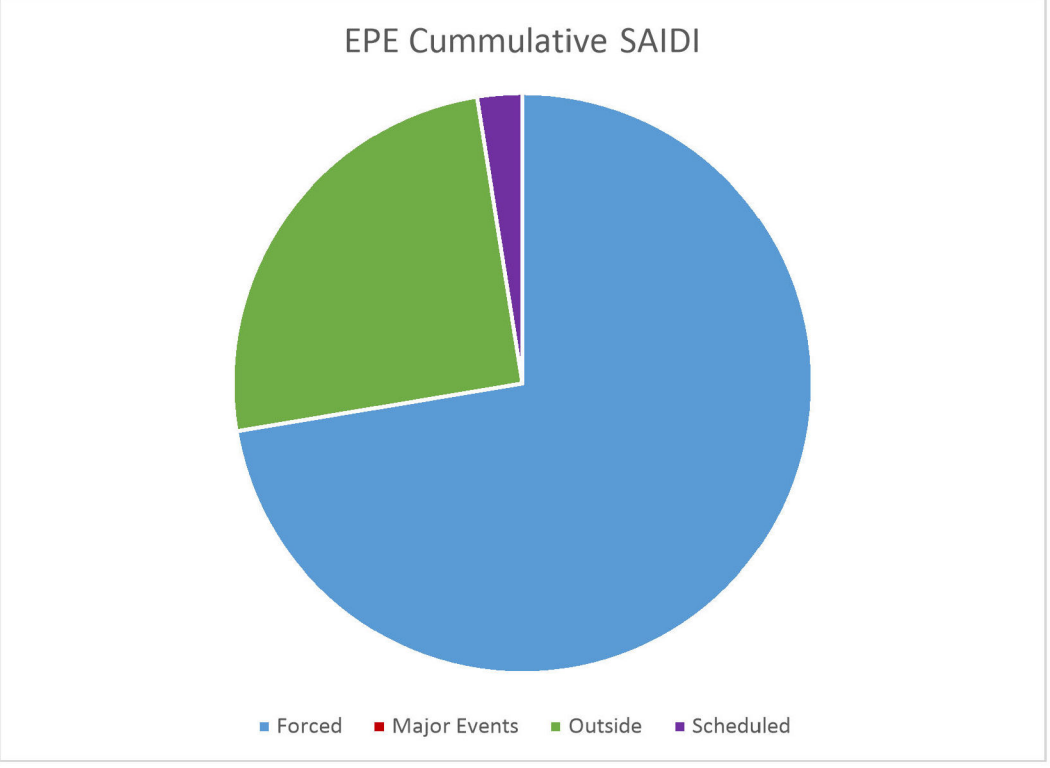

Figure 2D_N: EPE Cumulative SAIDI Proportions for 2013 - 2022

Section 2E: Entergy Texas, Inc. (ETI)

Number of Service Points	489,087
Miles of Distribution Lines	11,790
Number of Service points per mile of distribution line	41

Figure 2E_M has been separated into two figures, (i) and (ii), because ETI's major event SAIDI was very high in 2017 and 2021, this necessitated different scaling than the SAIDI for forced outages.

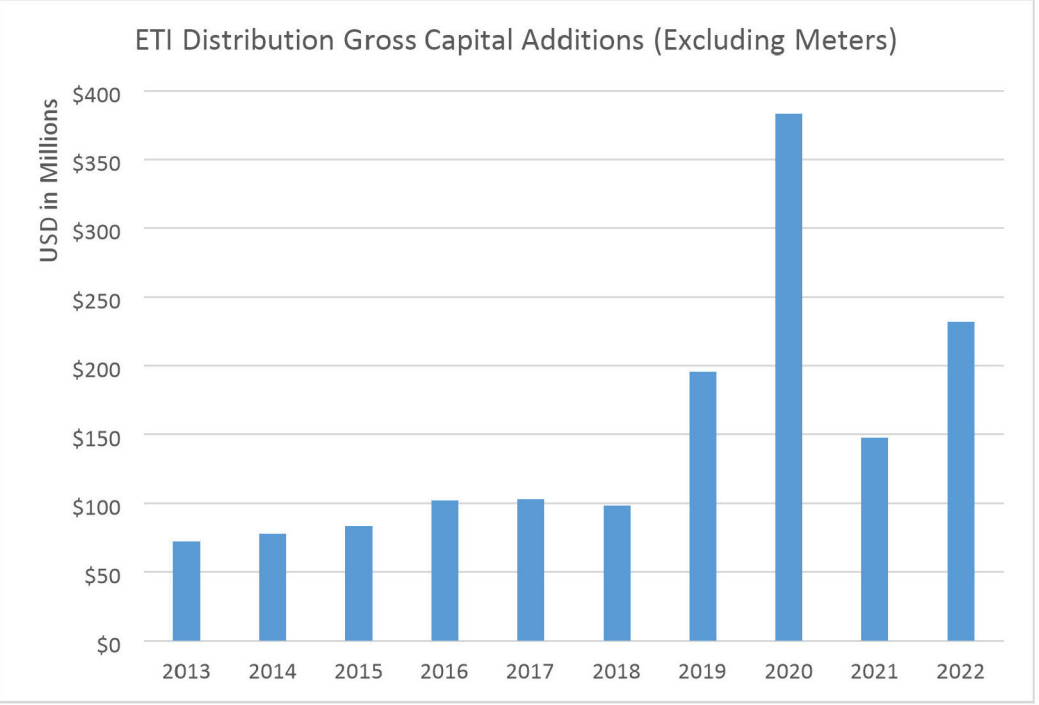

Figure 2E_A: ETI Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

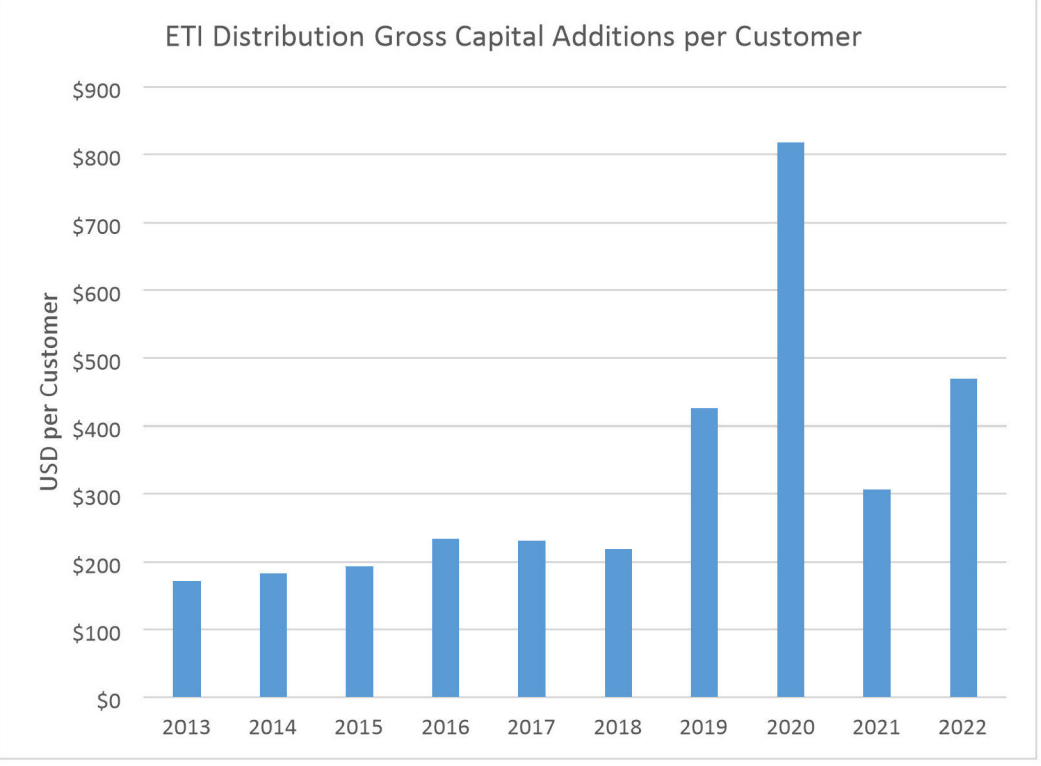

Figure 2E_B: ETI Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

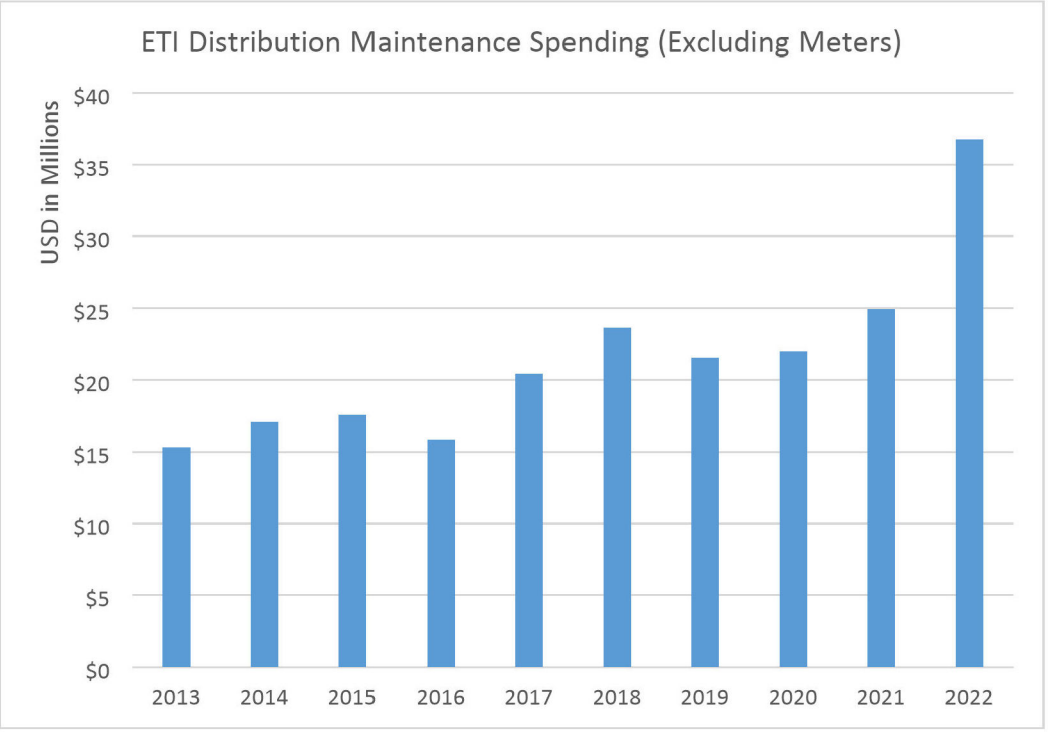

Figure 2E_C: ETI Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

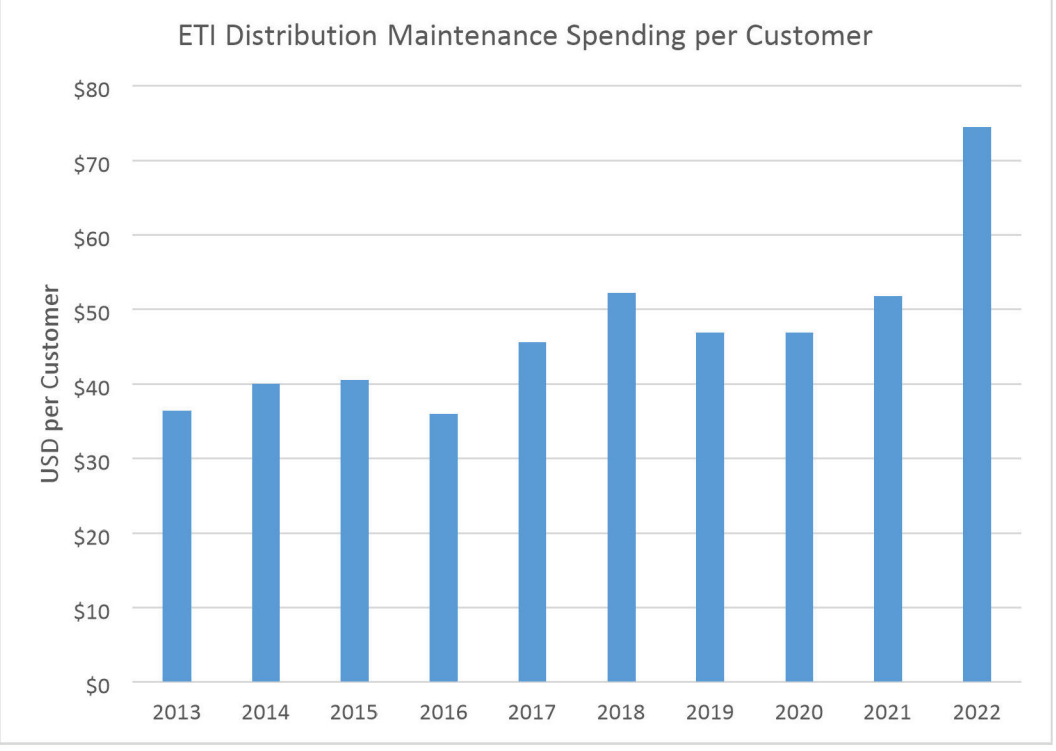

Figure 2E_D: ETI Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

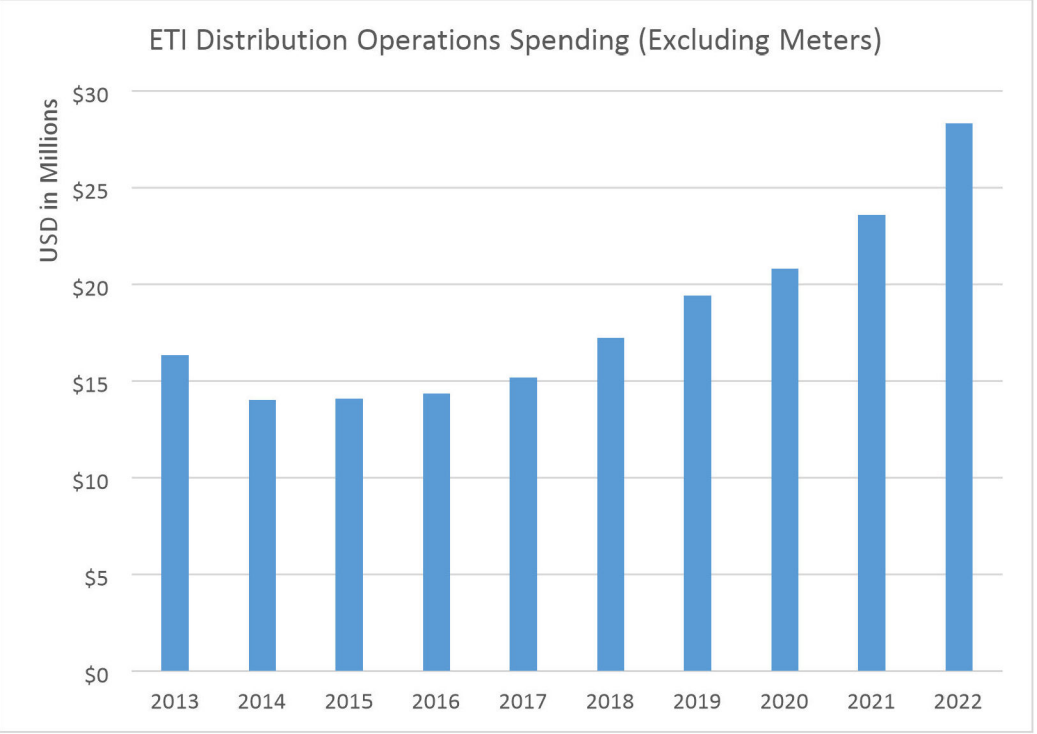

Figure 2E_E: ETI Distribution Operations Spending (Excluding Meters) for 2013 - 2022

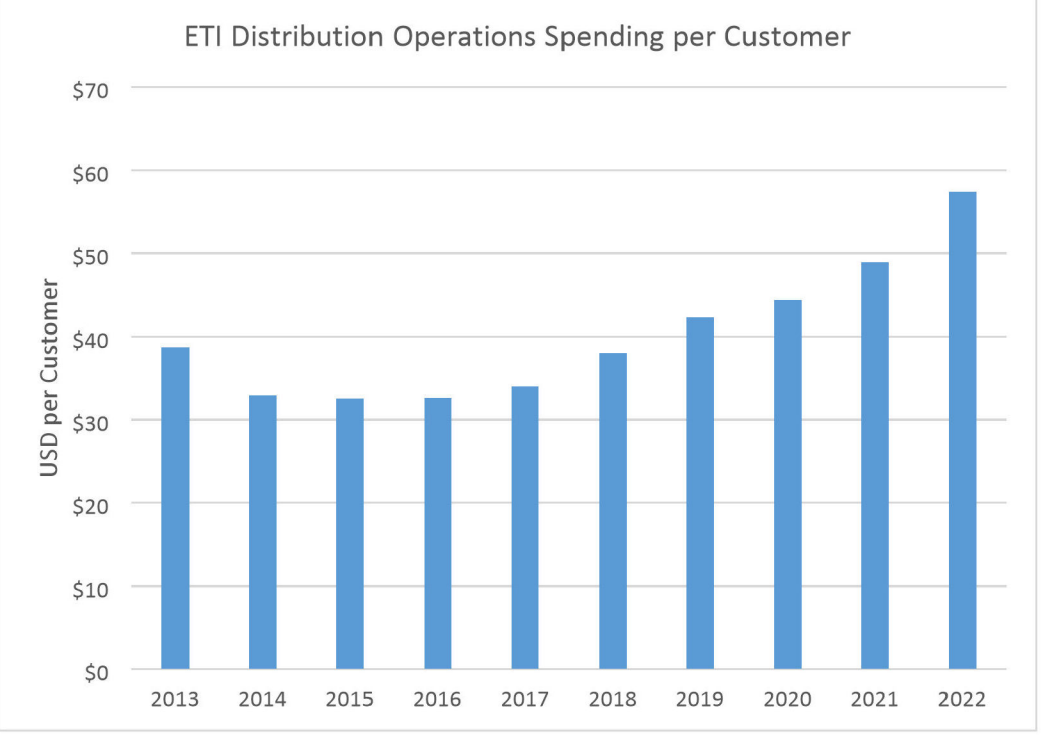

Figure 2E_F: ETI Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

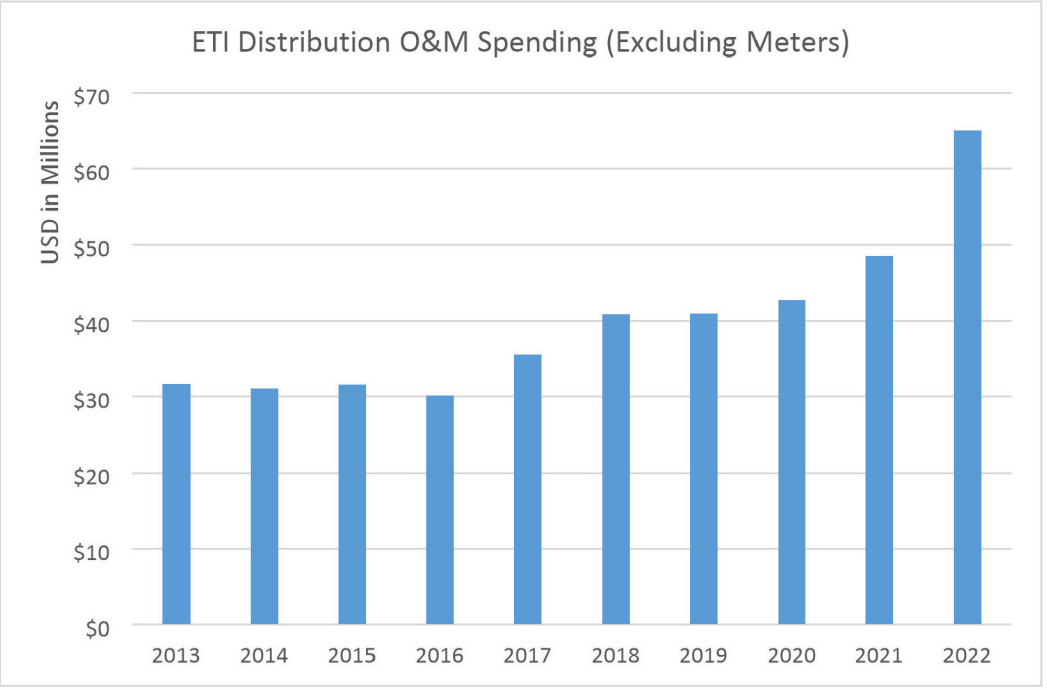

Figure 2E_G: ETI Distribution O&M Spending (Excluding Meters) for 2013 - 2022

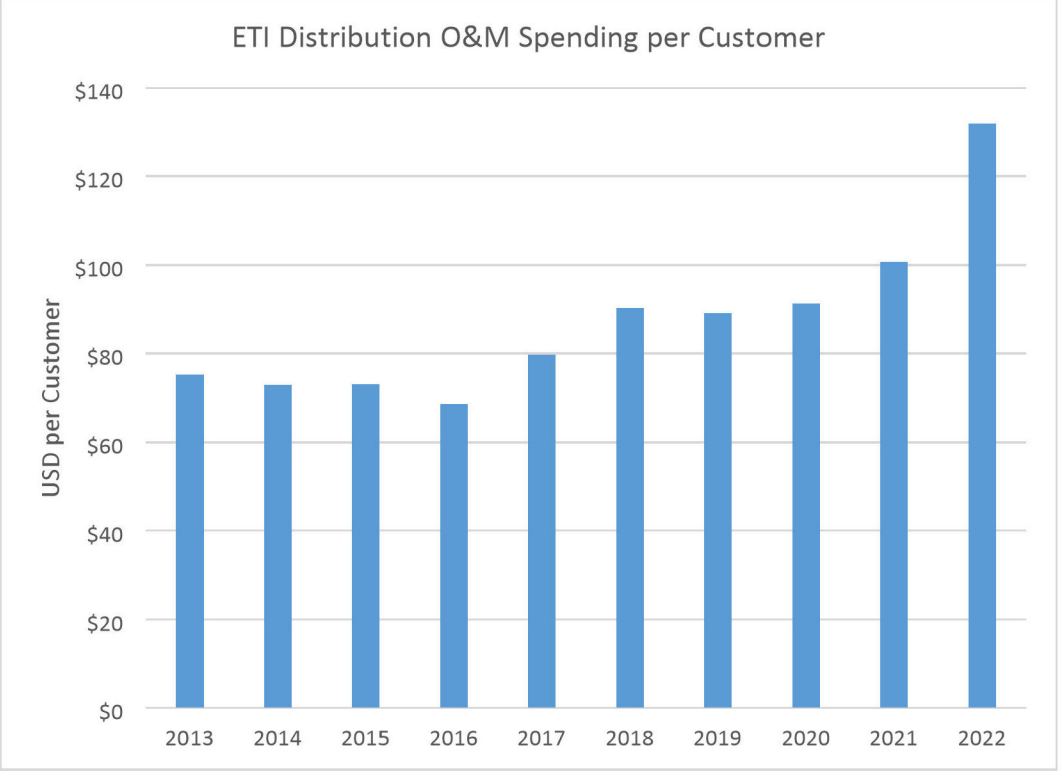

Figure 2E_H: ETI Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

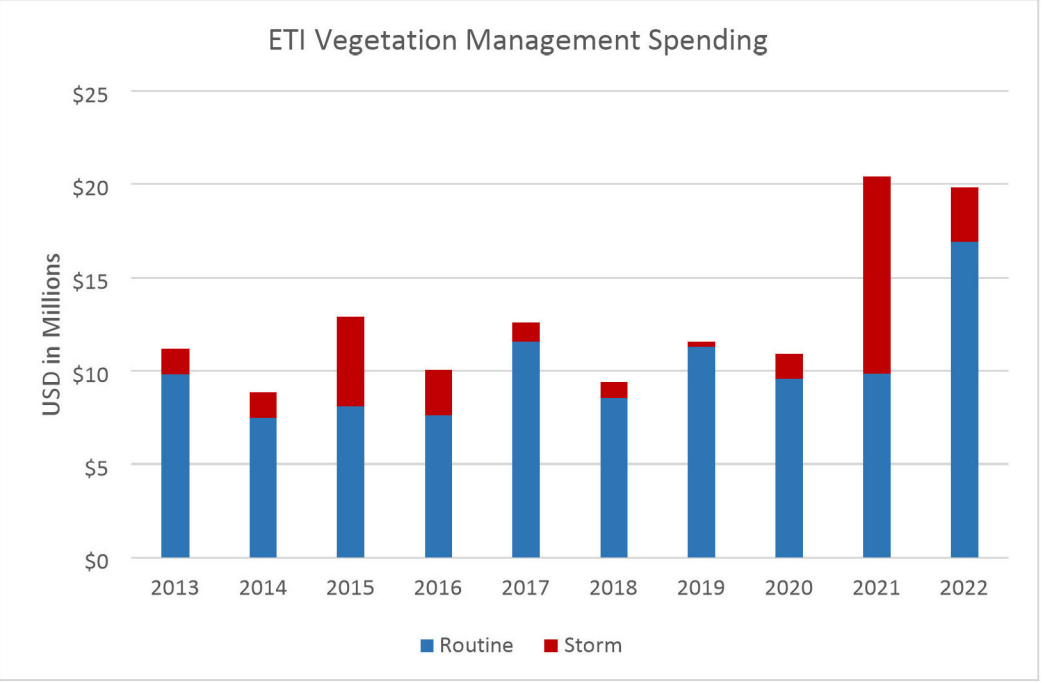

Figure 2E_I: ETI Vegetation Management Spending for 2013 - 2022

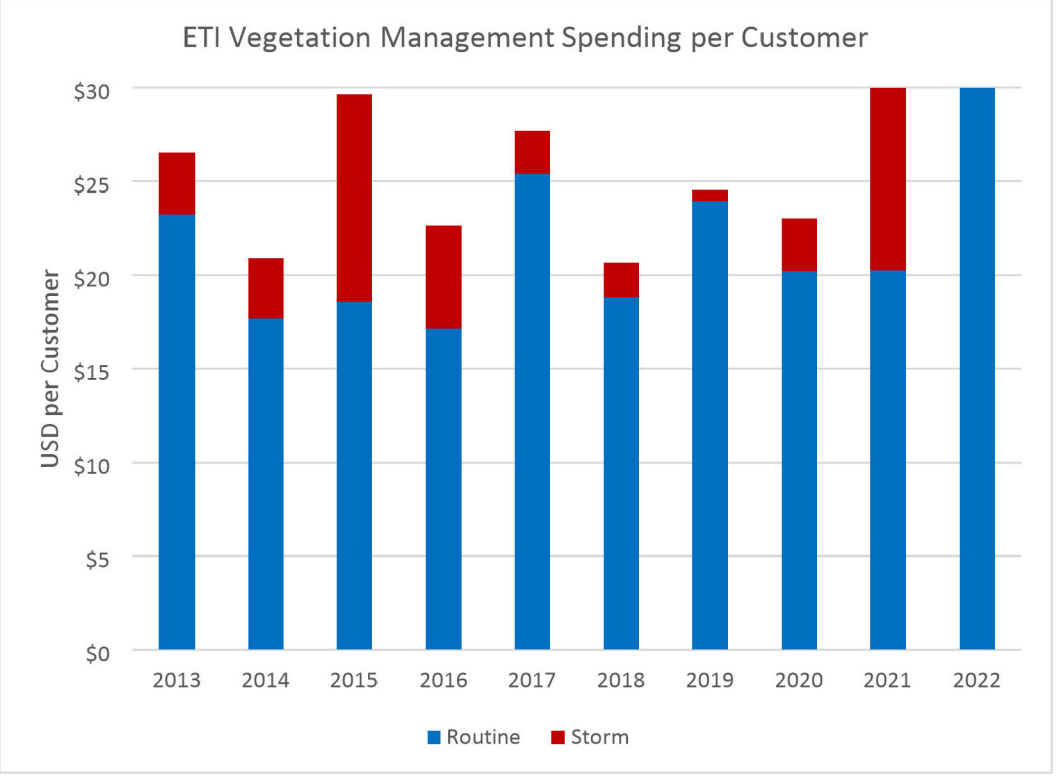

Figure 2E_J: ETI Vegetation Management Spending per Customer for 2013 - 2022

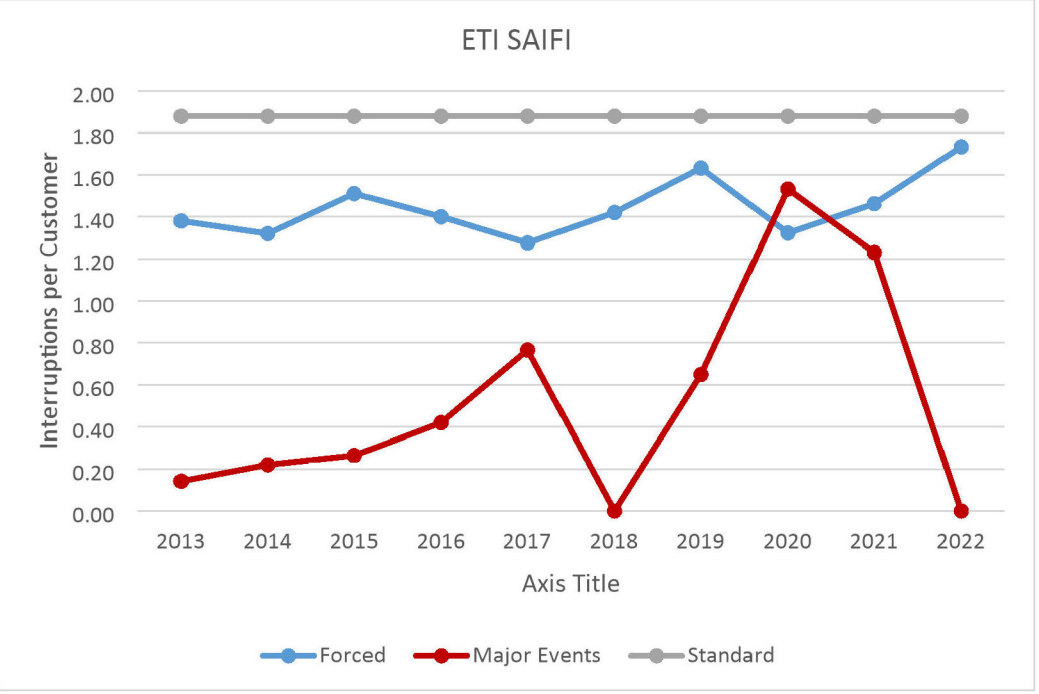

Figure 2E_K: ETI SAIFI for 2013 - 2022

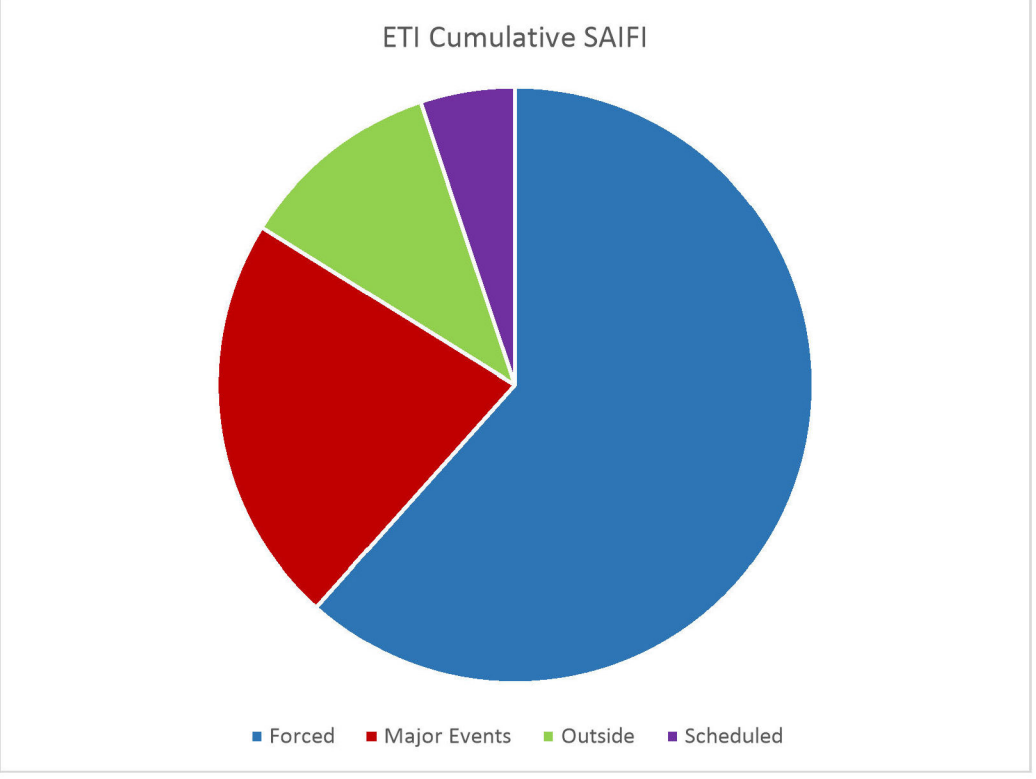

Figure 2E_L: ETI Cumulative SAIFI Proportions for 2013 - 2022

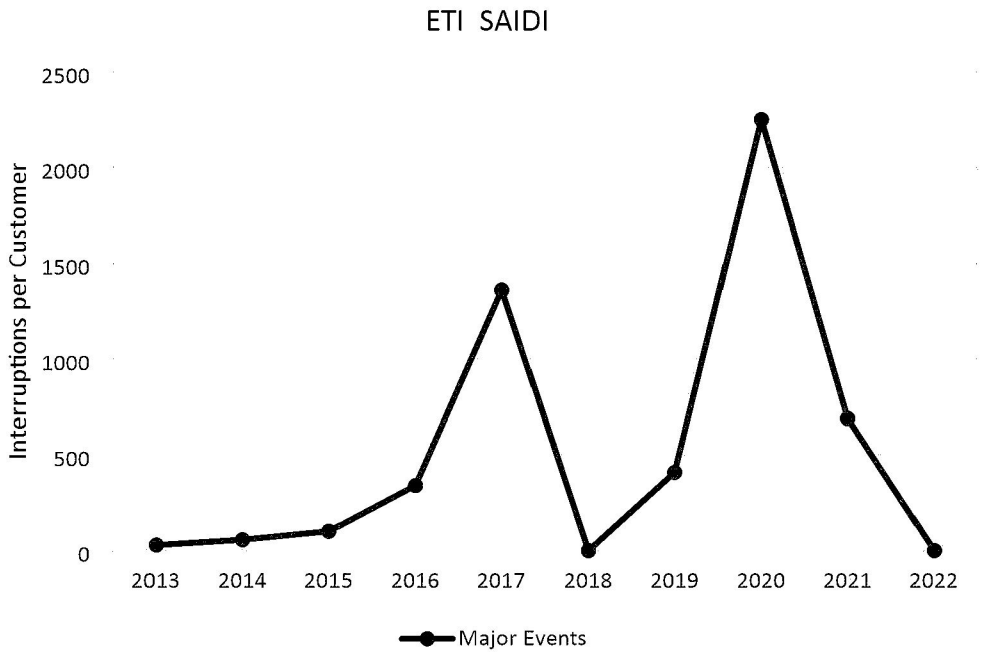

Figure 2E_M(i): ETI SAIDI from Major Events for 2013 - 2022

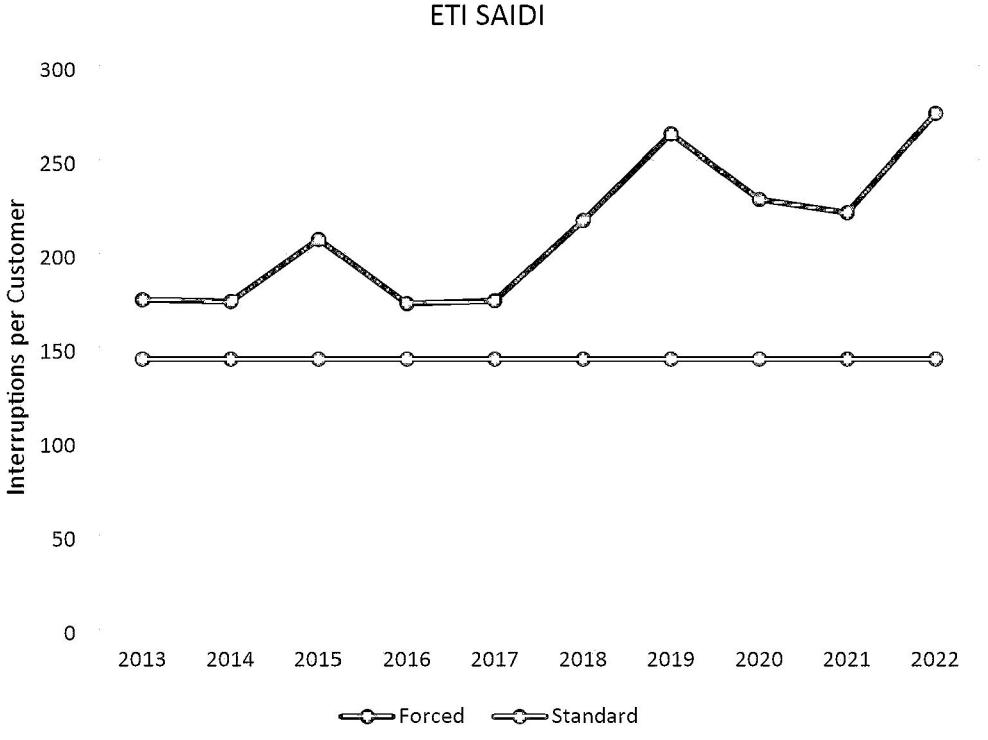

Figure 2E_M (ii): ETI SAIDI from Forced Events for 2013 - 2022

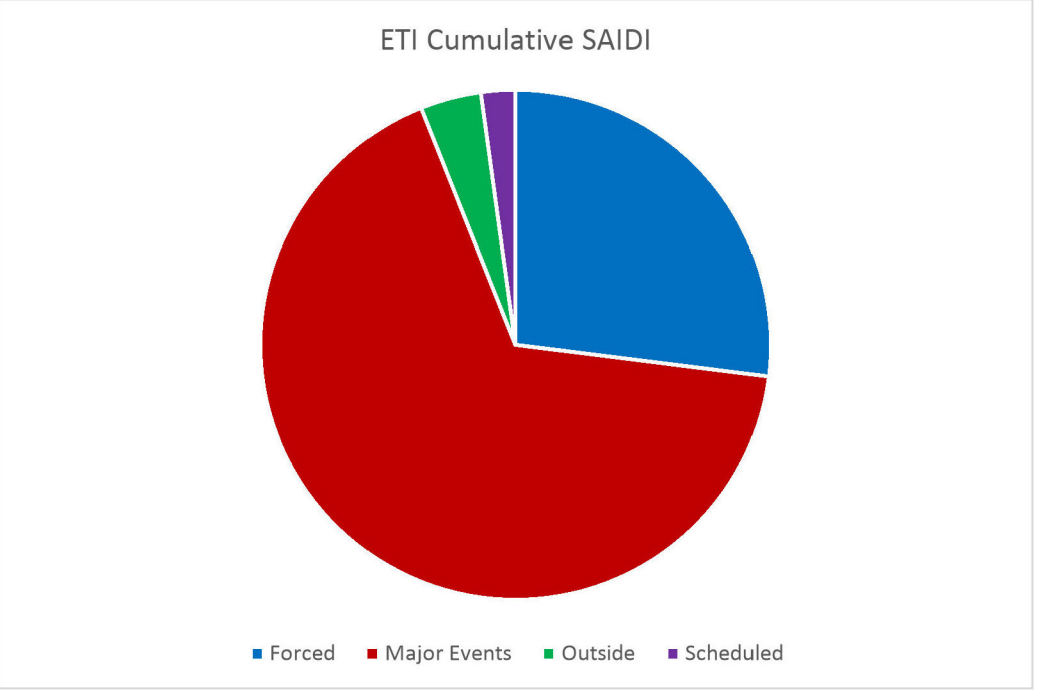

Figure 2E_N: ETI Cumulative SAIDI Proportions for 2013 - 2022

Section 2F: Oncor Electric Delivery Company LLC (Oncor)

Number of Service Points	3,896,232
Miles of Distribution Lines	90,210
Number of Service points per mile of distribution line	43

Oncor acquired the Sharyland distribution system in December of 2016. Among the provisions of the acquisition was the stipulation that Oncor separately track and report SAIDI and SAIFI for the former Sharyland territory for a period of ten years after the closing of the merger. Thus, there are two sets of SAIDI and SAIFI charts below.

Beginning in 2017, Oncor tracked and reported spending and vegetation management data for the former Sharyland territory in combination with the rest of Oncor's service territory. For prior years, the two companies' data have been combined so that the charts below (other than those for SAIDI and SAIFI) show historical data as if for a single company.

In comments provided in response to previous drafts of this report Oncor discussed a discrepancy between the outage definitions in 16 TAC §25.52 and its internal definitions regarding forced outages and outages from outside causes. Oncor stated that it has used its internal definitions for its Commission service quality reports, which include outside cause outages in the force outages. The result is that adding all types of outages together for Oncor results in the double counting of outside cause outages. Oncor has changed its internal process, beginning with 2017, to remove this double counting of outside cause outages. Oncor stated that making its outage information conform to the definitions in 16 TAC §25.52 "would not change totals excessively, and the percentages would change only marginally" [2]. Staff has not altered the numbers included in this report from the numbers reported by Oncor prior to 2017.

Major event SAIDI was very high in 2021 for Oncor. The same is true for Sharyland in 2015 and 2021, which necessitated different scaling from SAIDI forced outages. Hence, it is shown in two separate graphs on Figure 2F_M (i) and (ii).

[2] Oncor comments in Docket 46735, Item 7

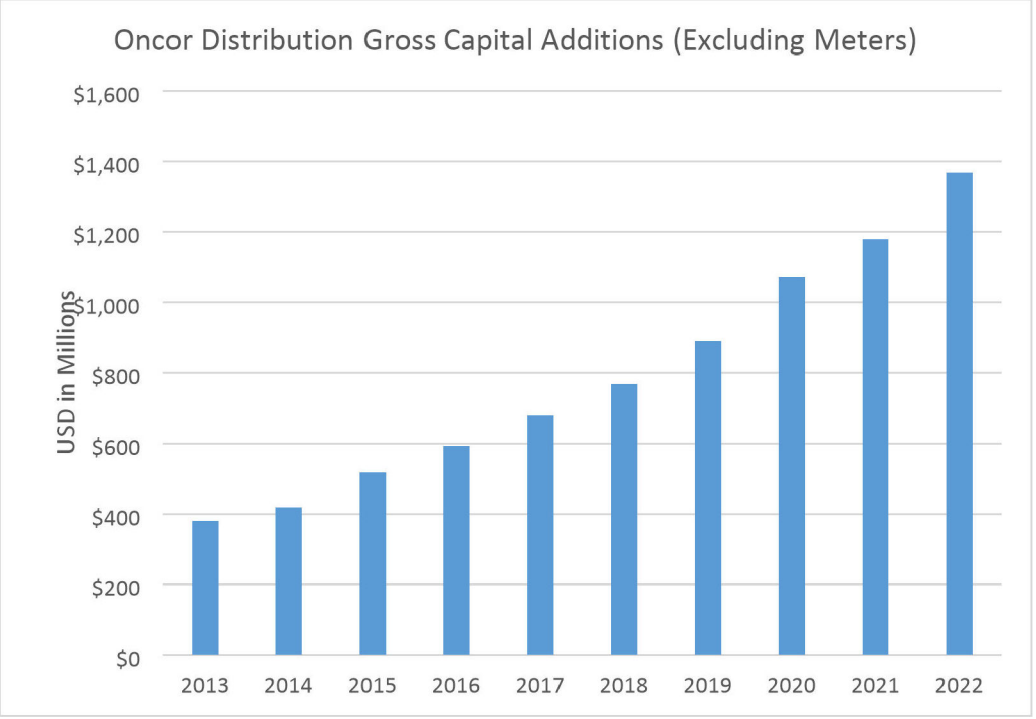

Figure 2F_A: Oncor Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

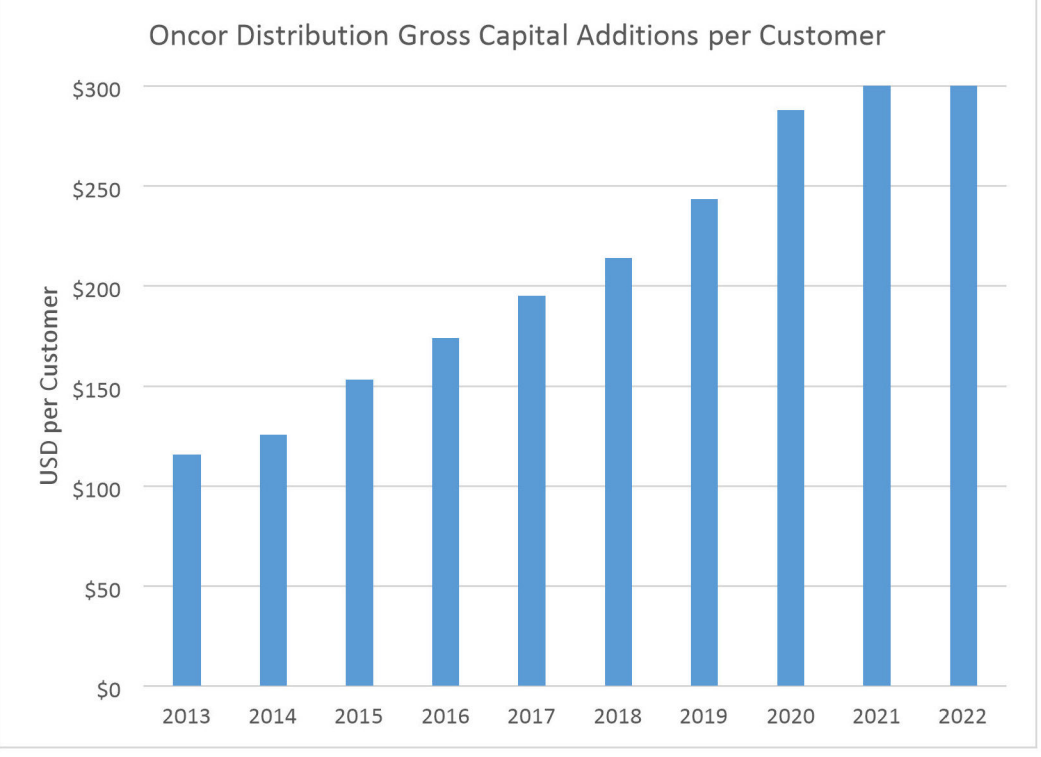

Figure 2F_B: Oncor Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

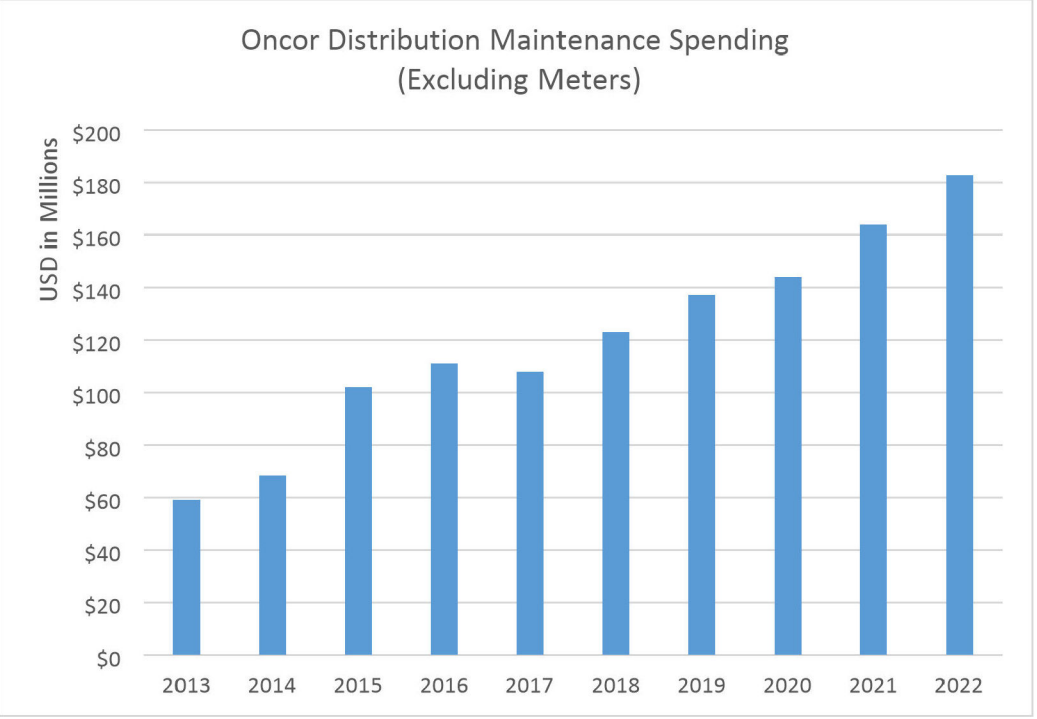

Figure 2F_C: Oncor Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

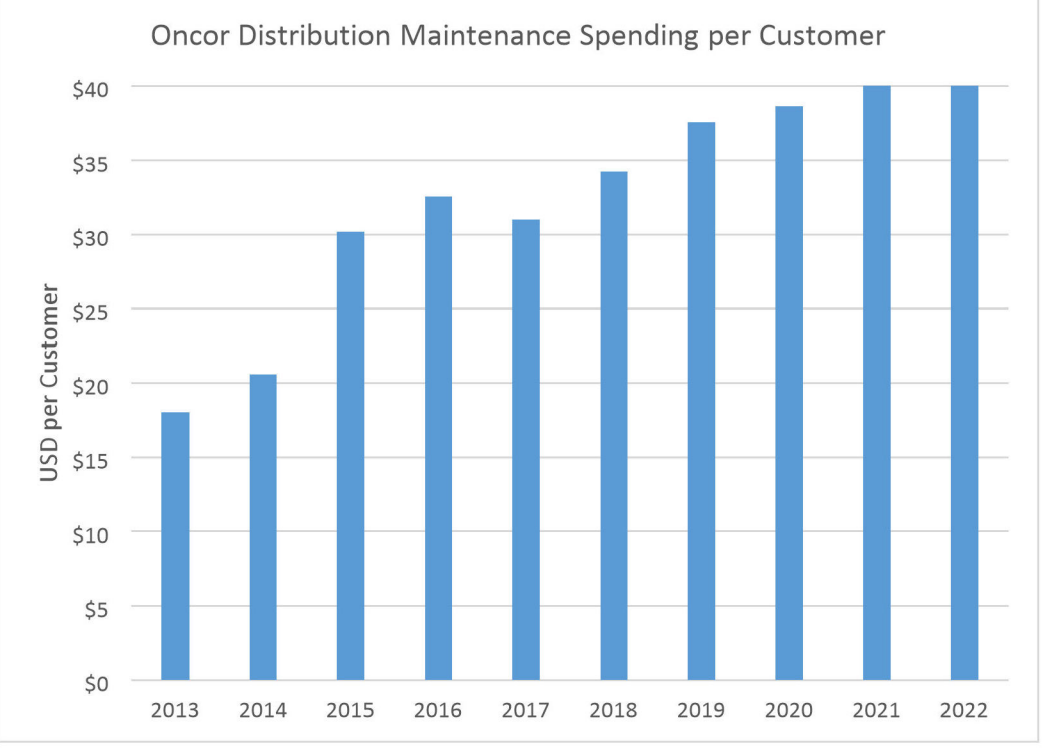

Figure 2F_D: Oncor Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

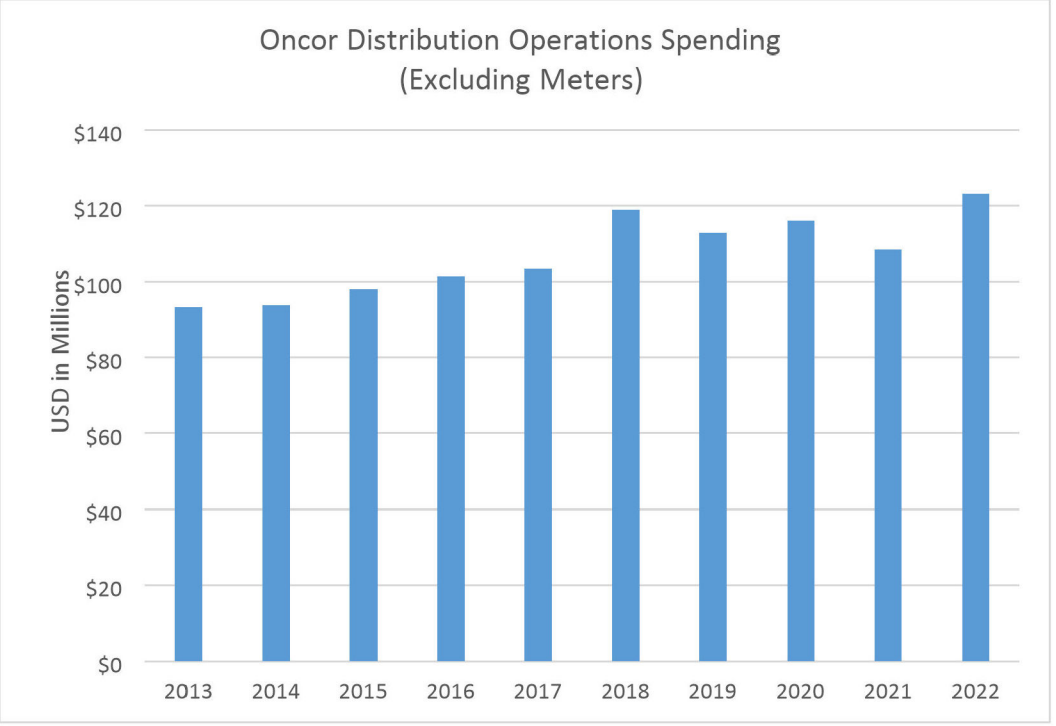

Figure 2F_E: Oncor Distribution Operations Spending (Excluding Meters) for 2013 - 2022

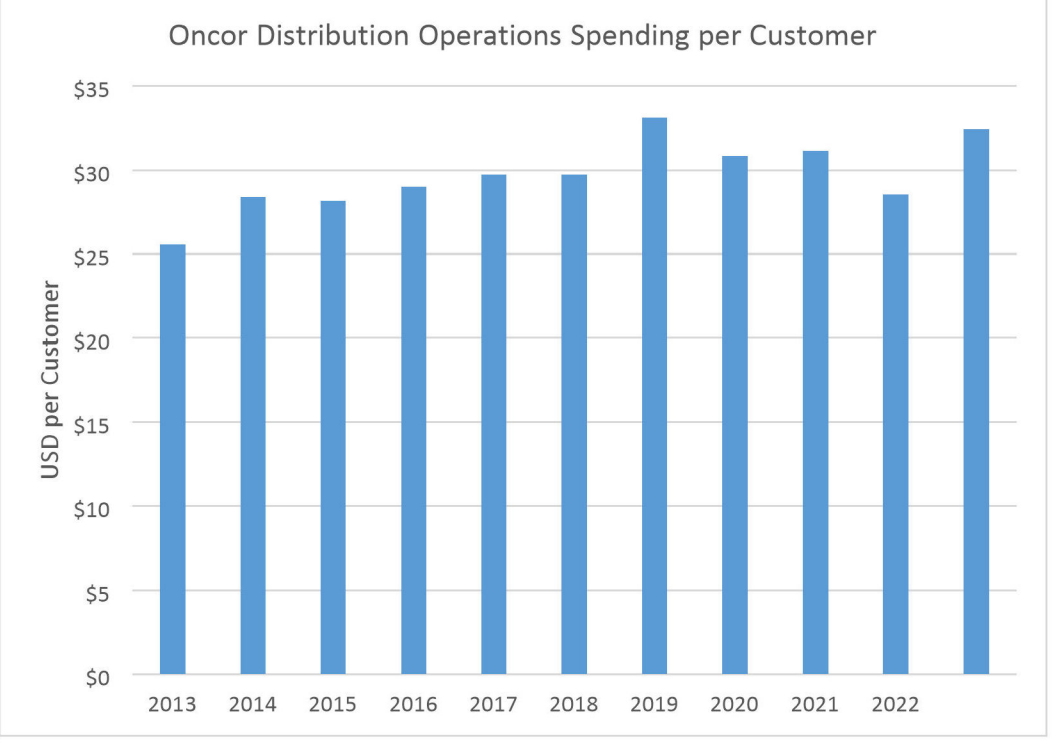

Figure 2F_F: Oncor Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

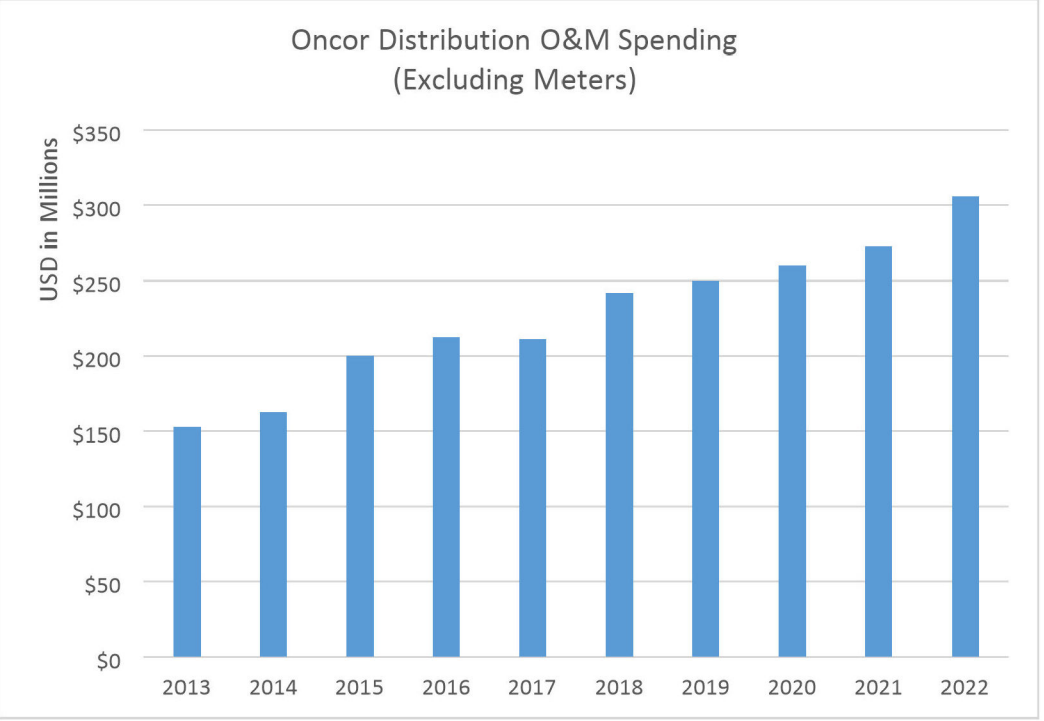

Figure 2F_G: Oncor Distribution O&M Spending (Excluding Meters) for 2013 - 2022

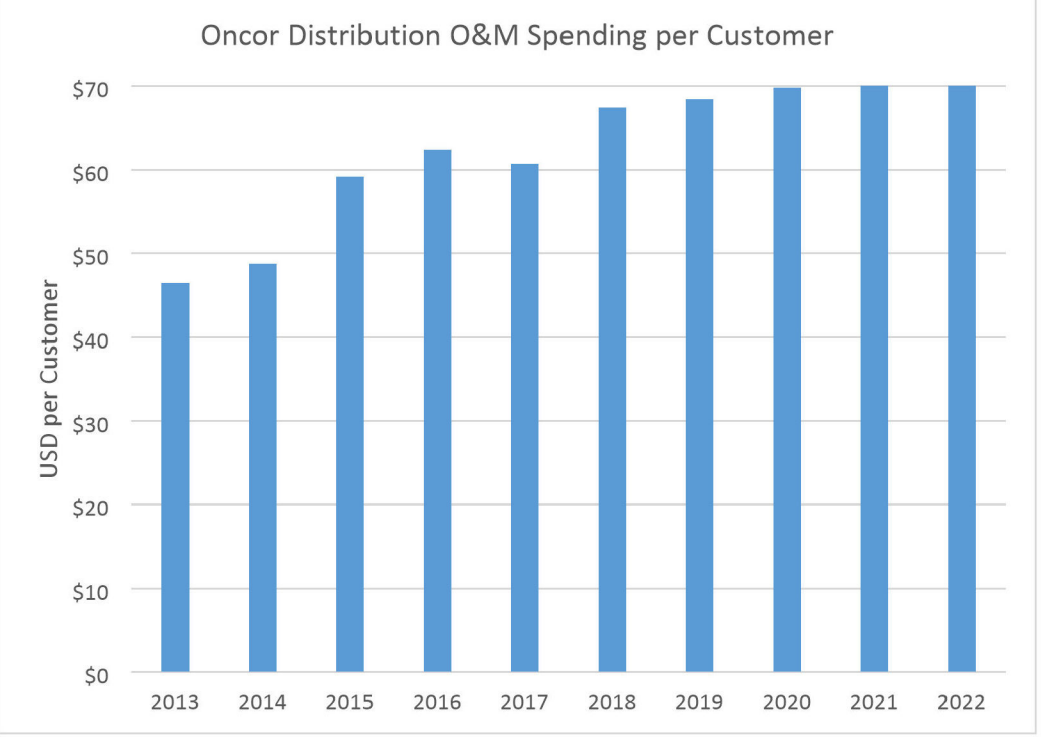

Figure 2F_H: Oncor Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

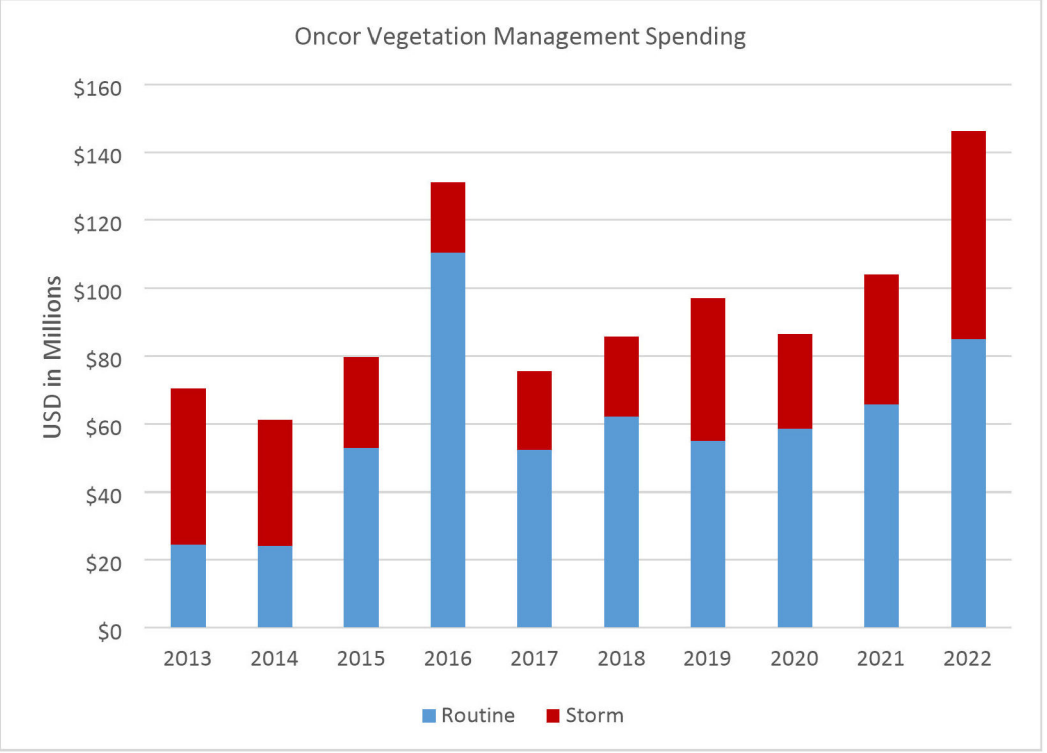

Figure 2F_I: Oncor Vegetation Management Spending for 2013 – 2022

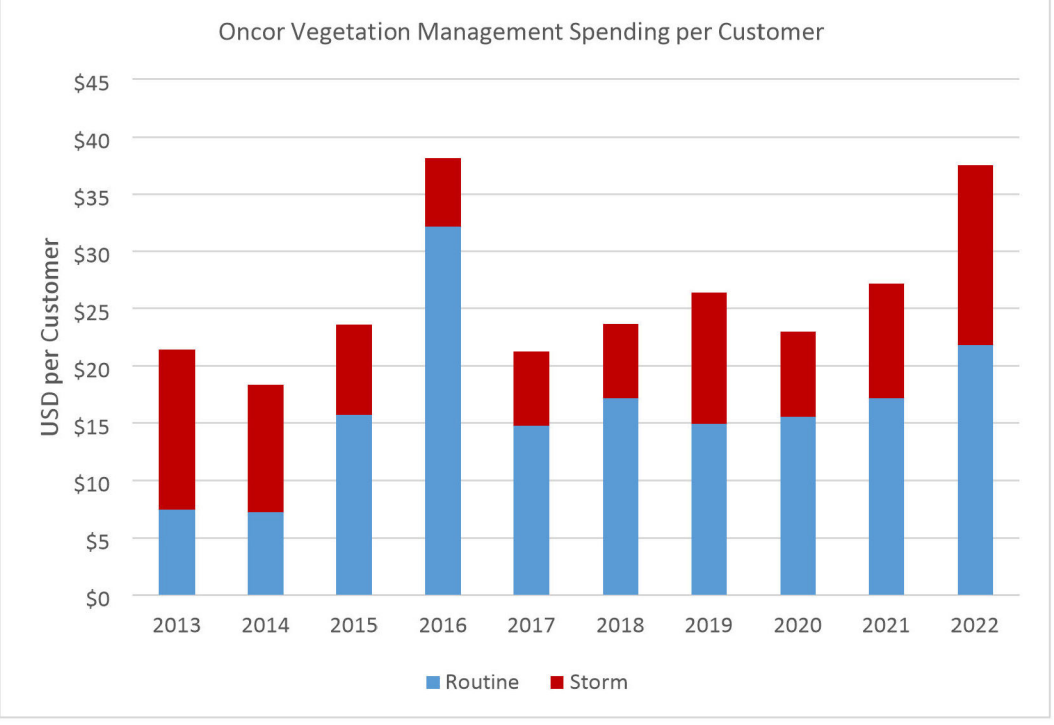

Figure 2F_J: Oncor Vegetation Management Spending per Customer for 2013 - 2022

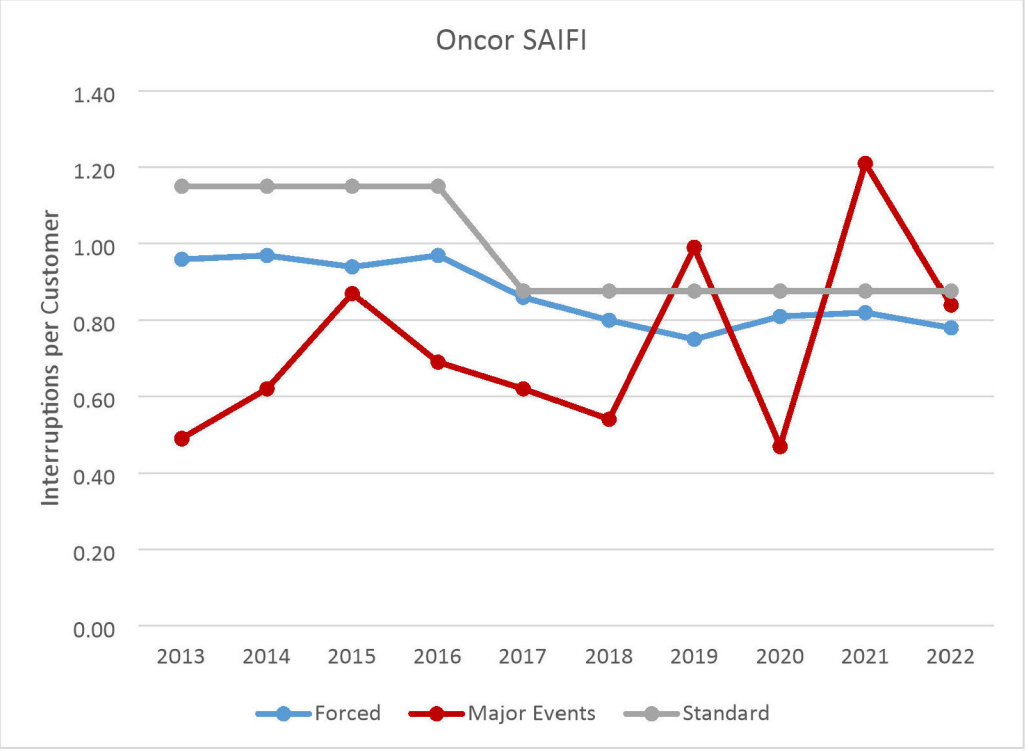

Figure 2F_K: Oncor SAIFI for 2013 - 2022

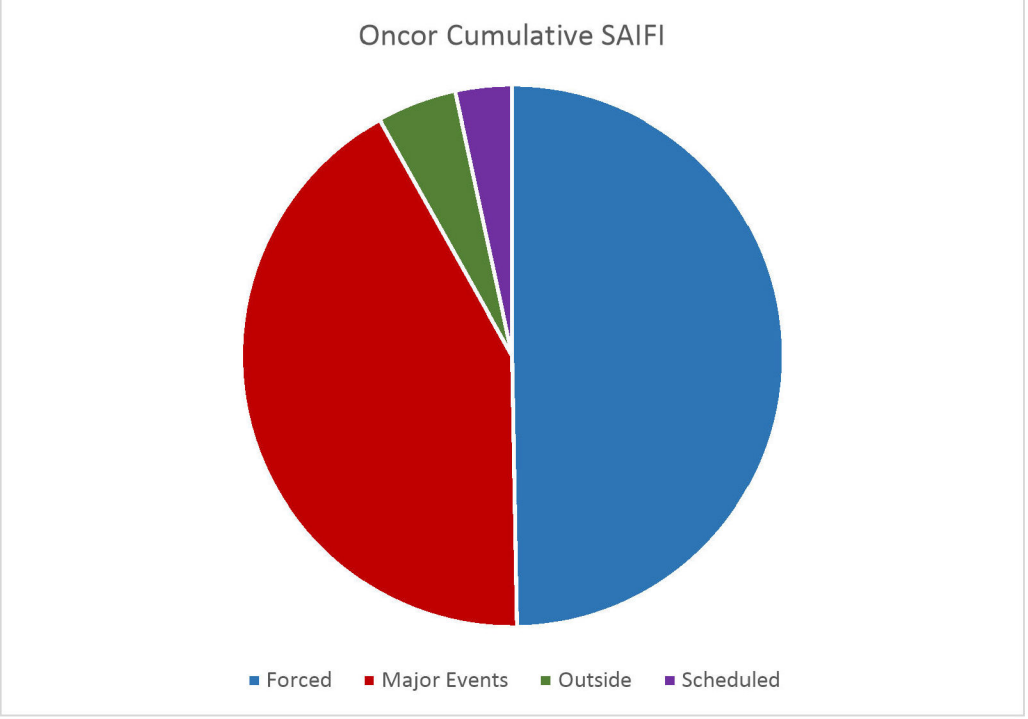

Figure 2F_L: Oncor Cumulative SAIFI Proportions for 2013 - 2022

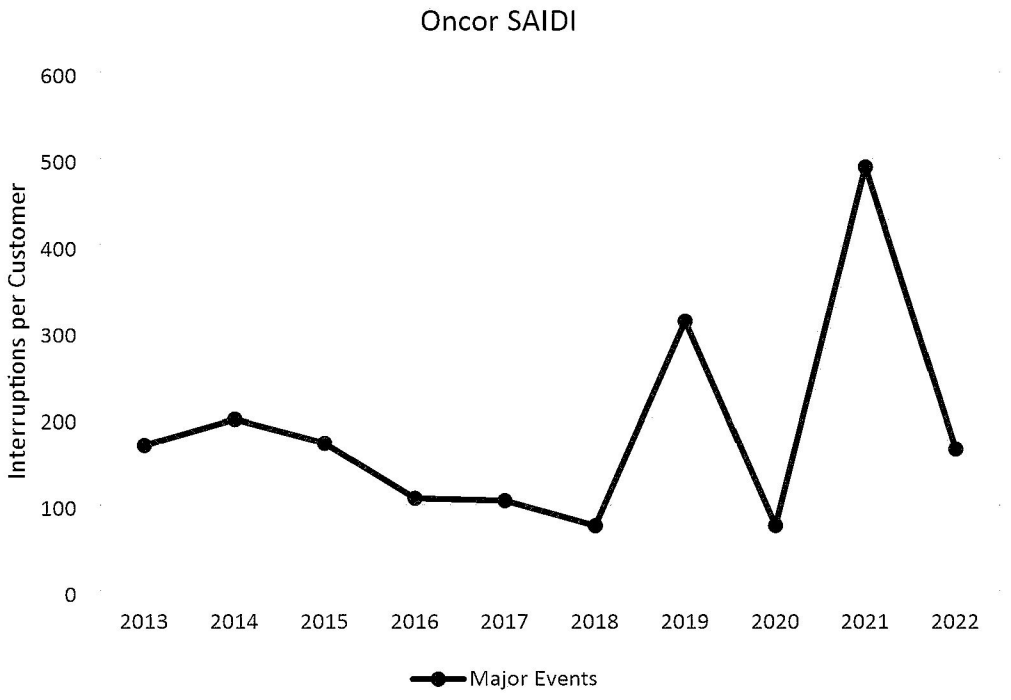

Figure 2F_M (i): Oncor SAIDI for Major Events for 2013 - 2022

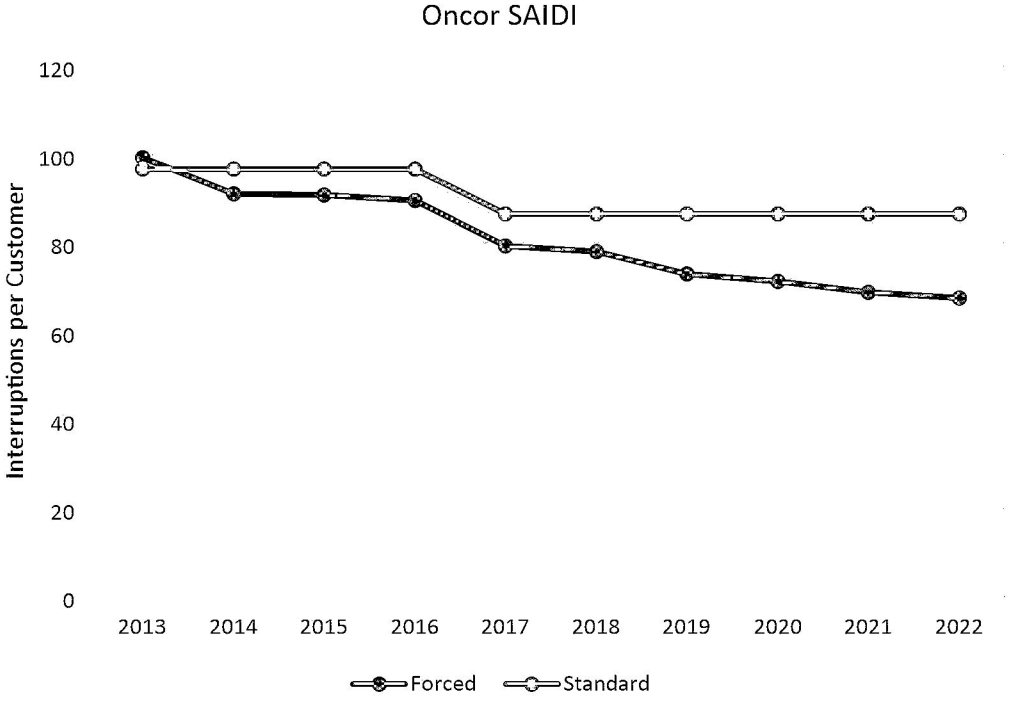

Figure 2F_M (ii): Oncor SAIDI from Forced Outages for 2013 - 2022

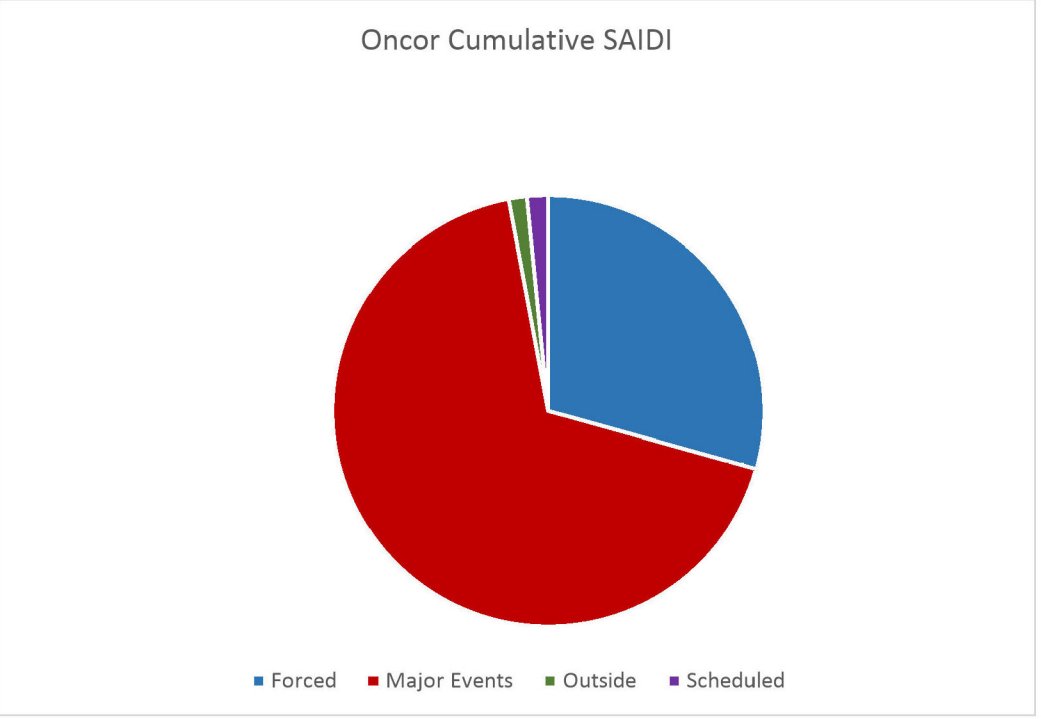

Figure 2F_N: Oncor Cumulative SAIDI Proportions for 2013 – 2022

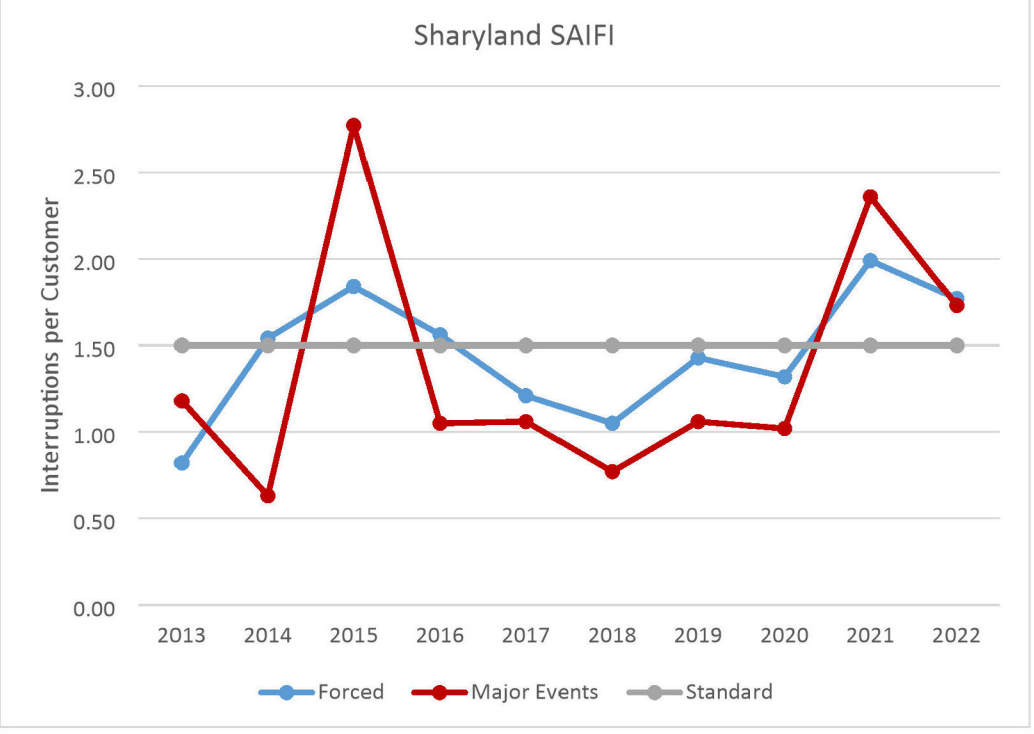

Figure 2F_K: Sharyland SAIFI for 2013 - 2022

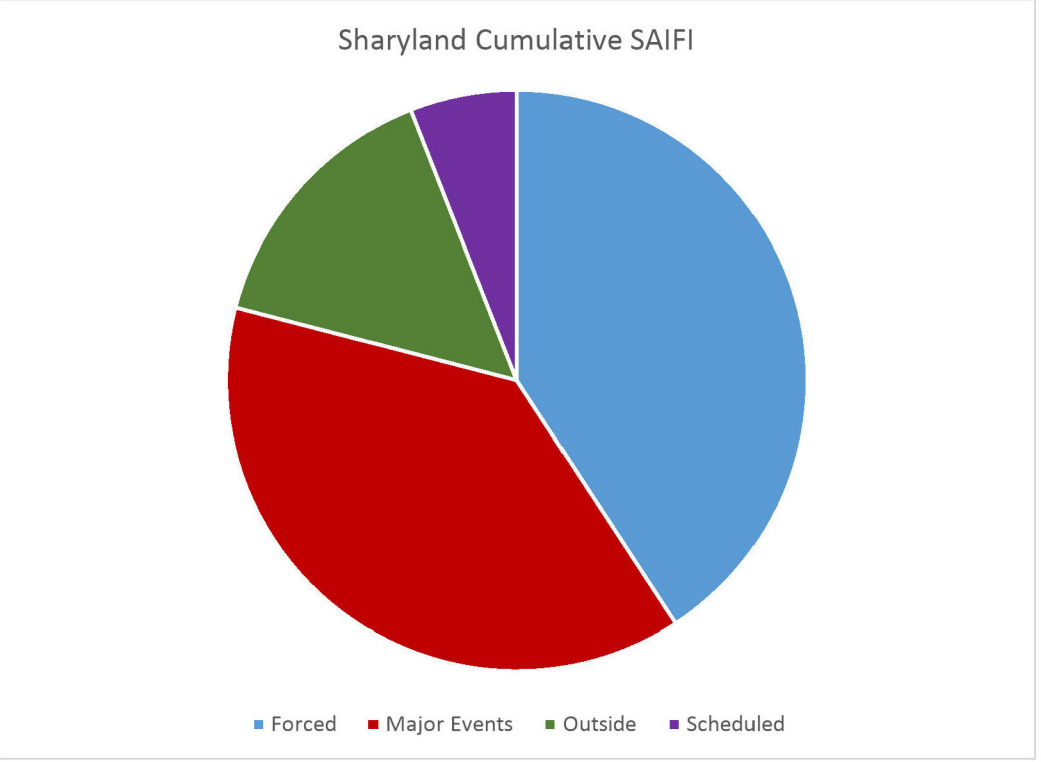

Figure 2F_L: Sharyland Cumulative SAIFI Proportions for 2013 – 2022

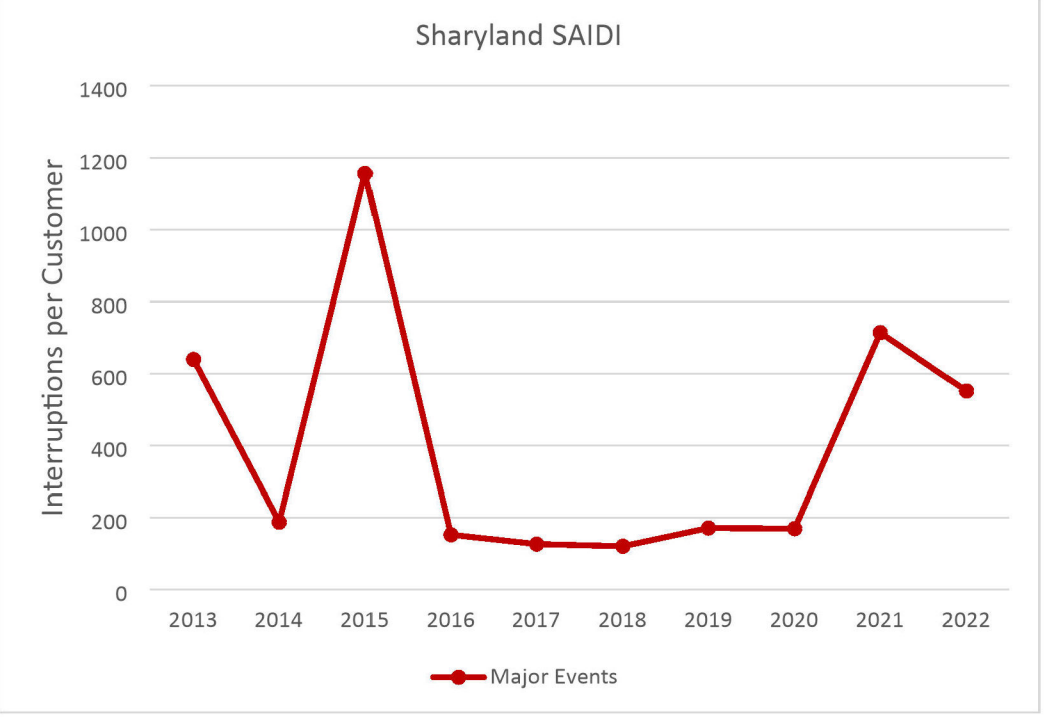

Figure 2F_M (i): Sharyland SAIDI for Major Events for 2013 – 2022

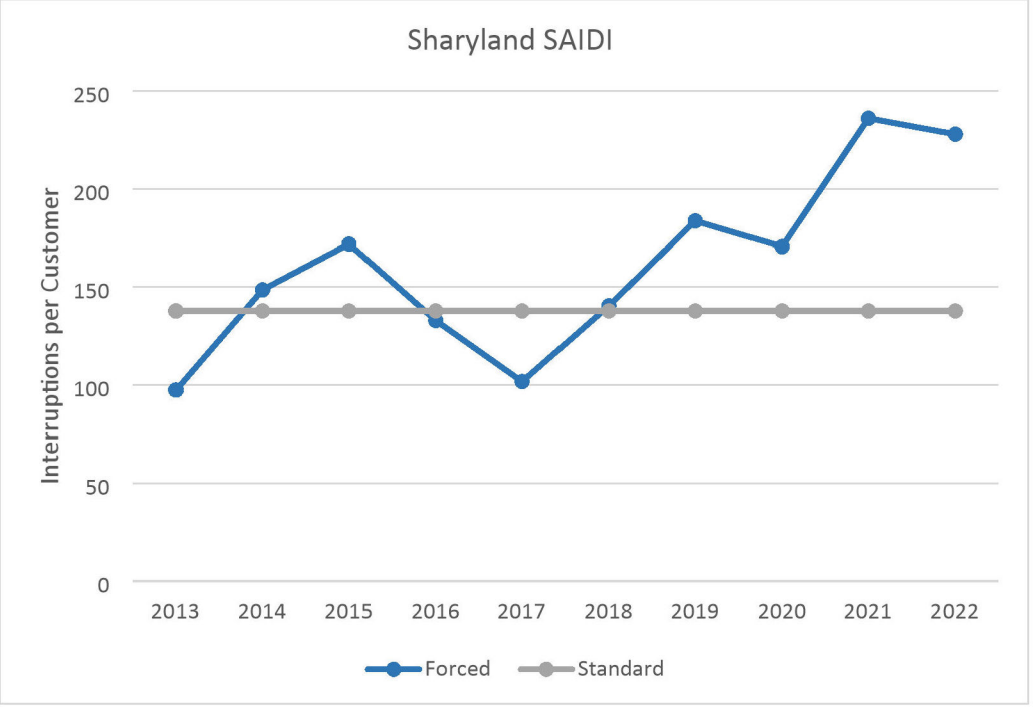

Figure 2F_M (ii): Sharyland SAIDI for Forced Outages for 2013 – 2022

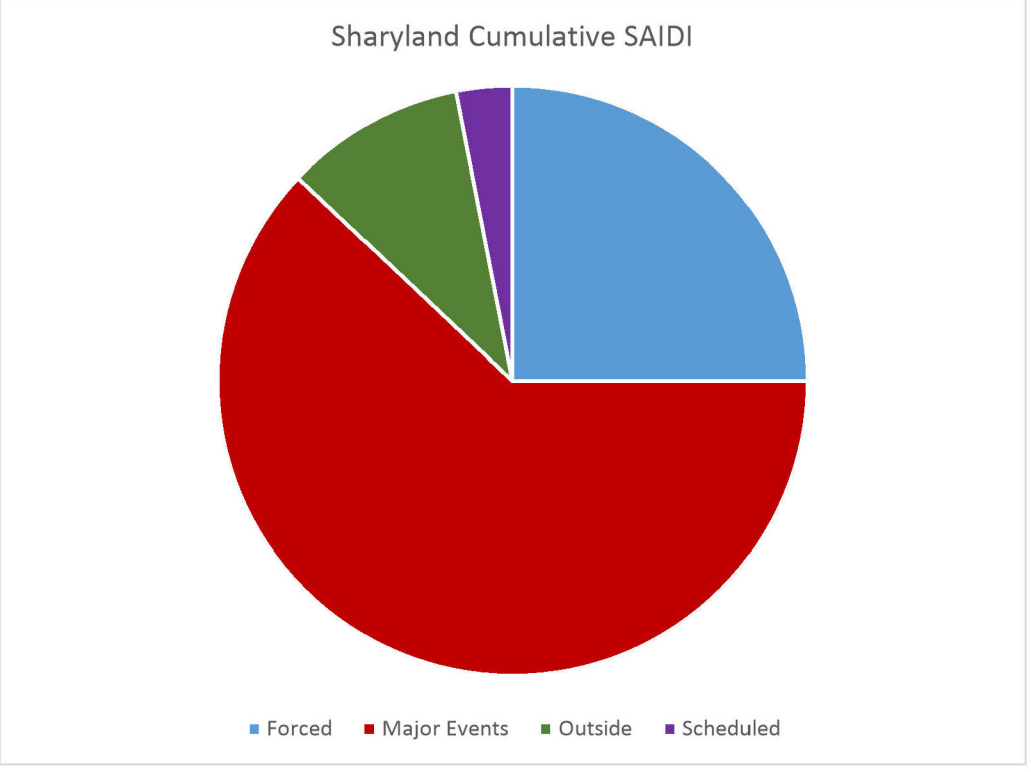

Figure 2F_N: Sharyland Cumulative SAIDI Proportions for 2013 - 2022

Section 2G: Southwestern Electric Power Company (SWEPCO)

Number of Service Points	194,377
Miles of Distribution Lines	8,500
Number of Service points per mile of distribution line	22

SWEPCO's service area includes portions of Texas, Arkansas, and Louisiana. The spending data and per customer values provided are for all its service area apart from VM, which are only for Texas. The reliability data are also only for Texas.

Additionally, Figure 2G_M has been separated into two figures, (i) and (ii), because SWEPCO's major event SAIDI was very high in 2017 and therefore necessitated different scaling than the SAIDI from forced outages.

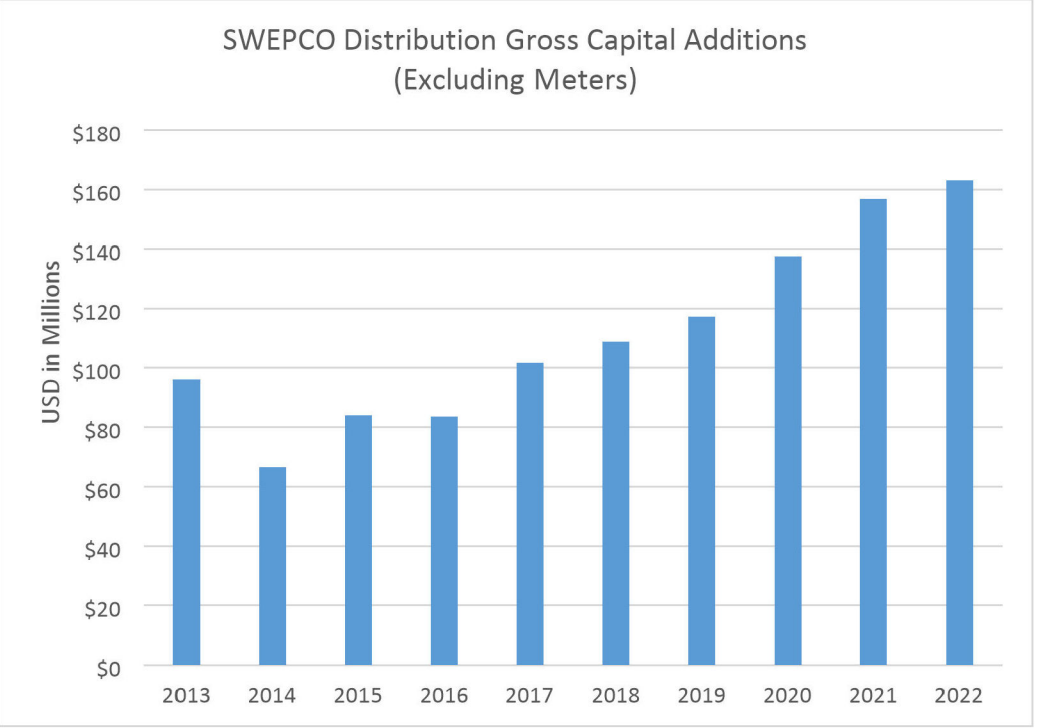

Figure 2G_A: SWEPCO Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

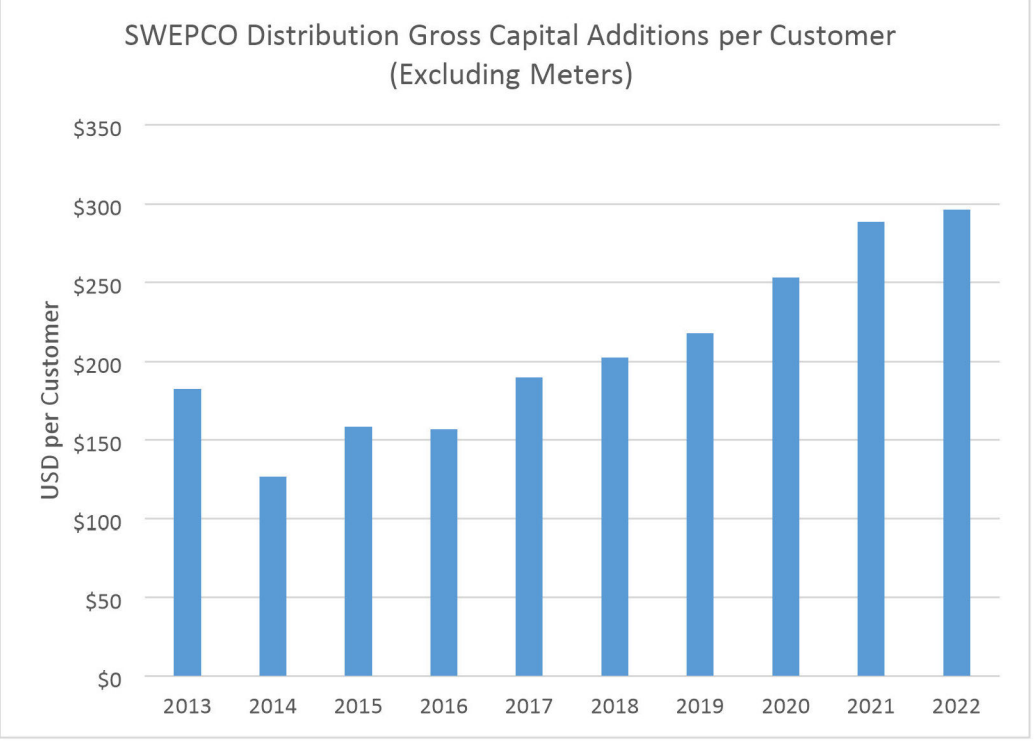

Figure 2G_B: SWEPCO Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

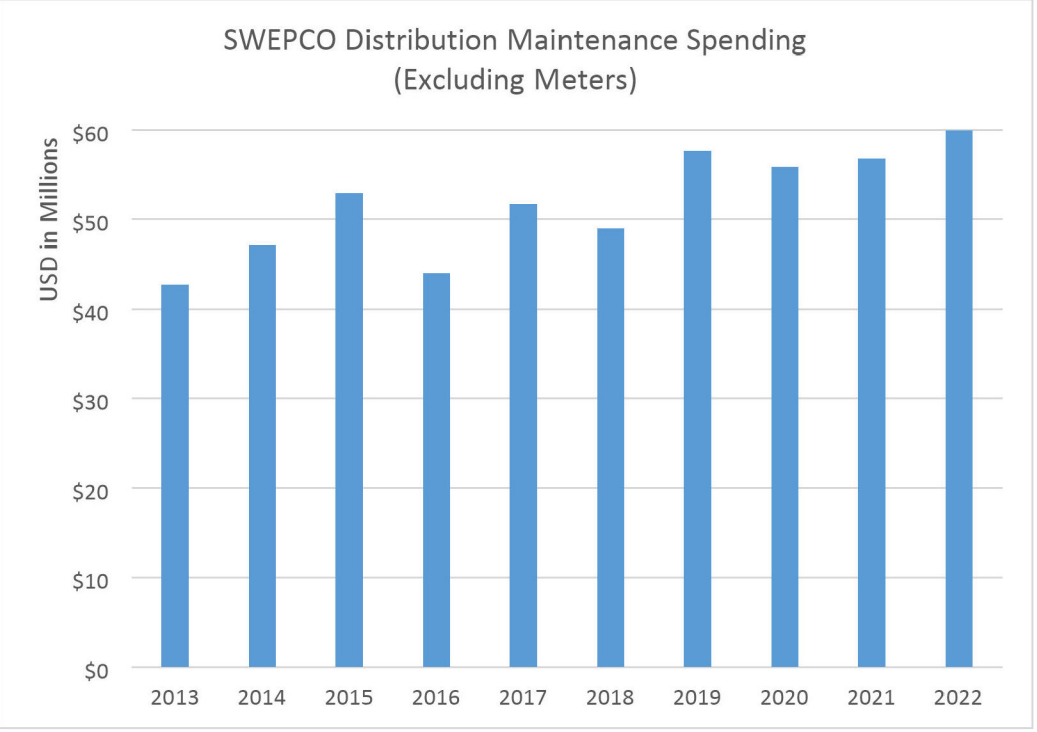

Figure 2G_C: SWEPCO Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

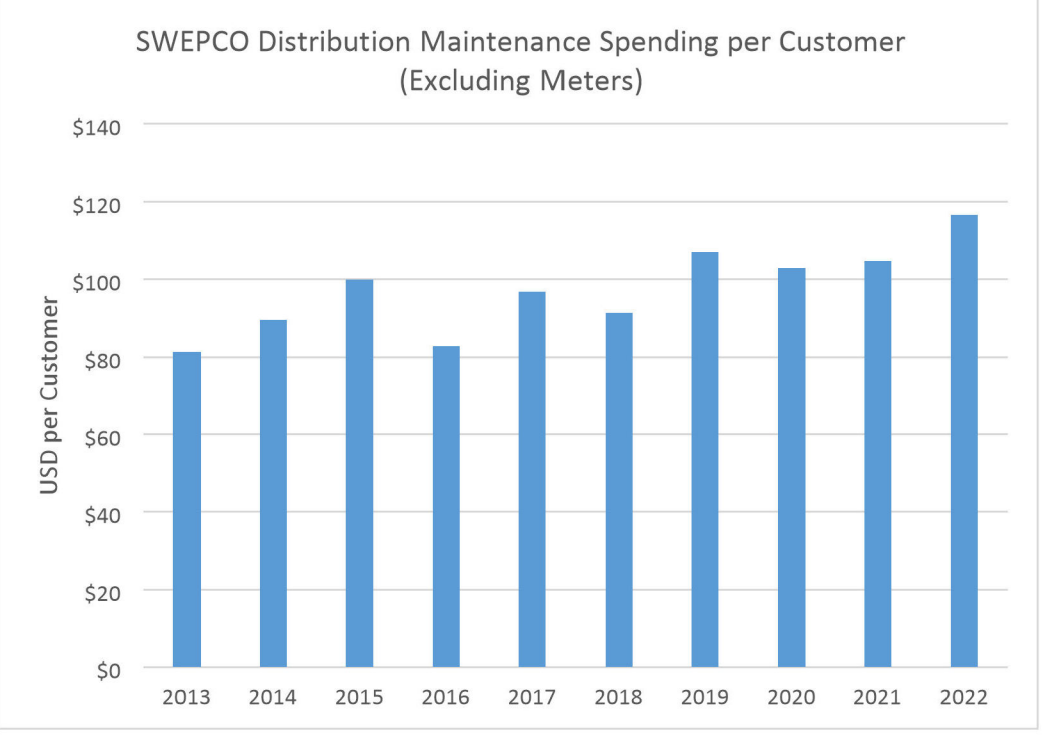

Figure 2G_D: SWEPCO Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

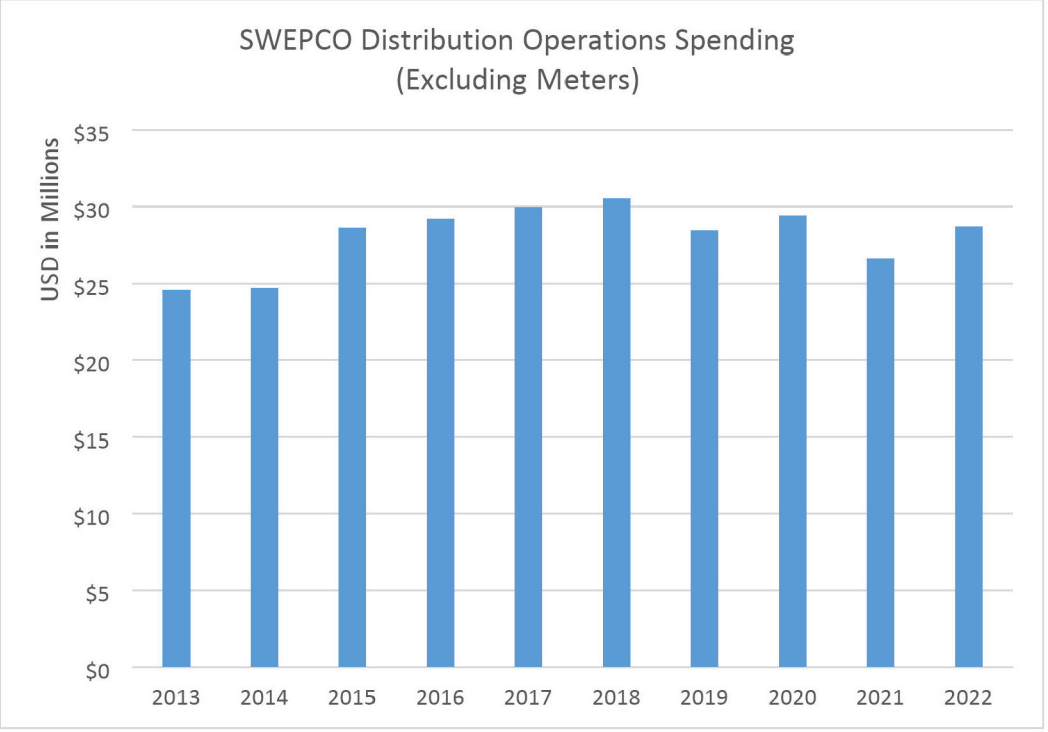

Figure 2G_E: SWEPCO Distribution Operations Spending (Excluding Meters) for 2013 - 2022

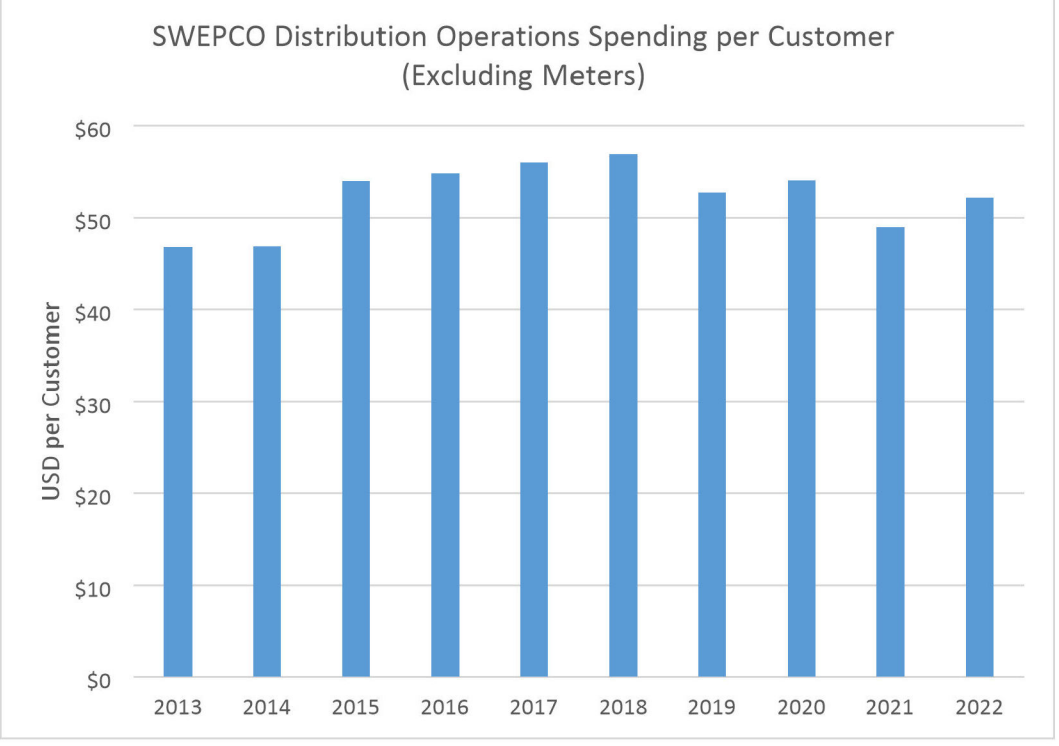

Figure 2G_F: SWEPCO Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

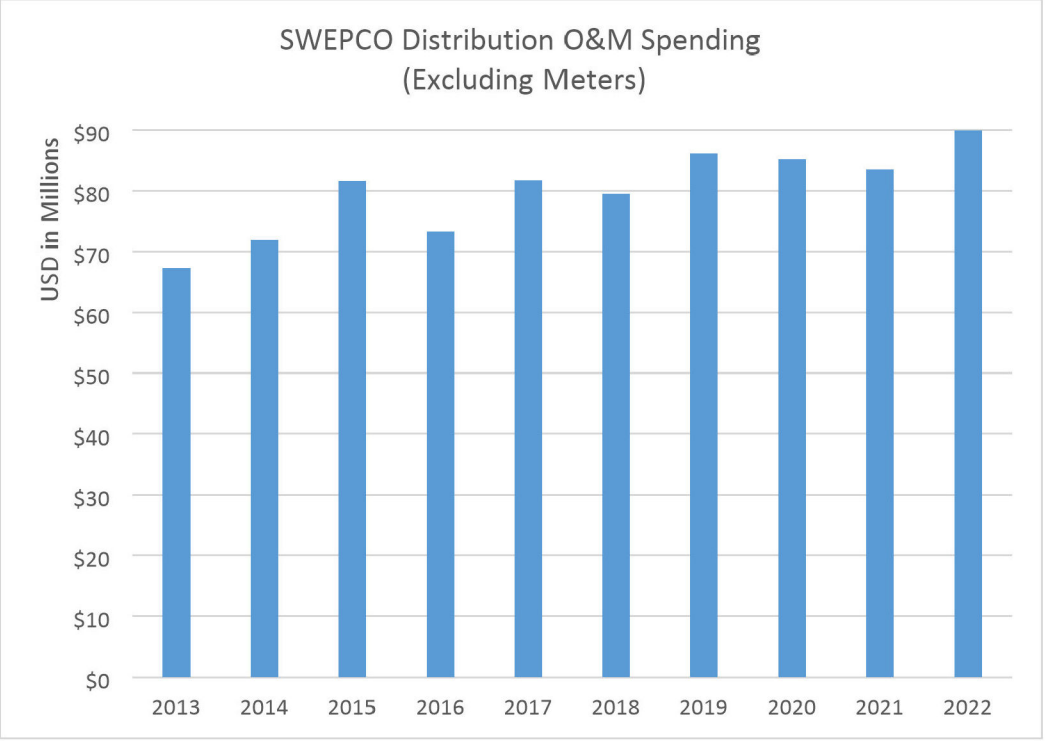

Figure 2G_G: SWEPCO Distribution O&M Spending (Excluding Meters) for 2013 - 2022

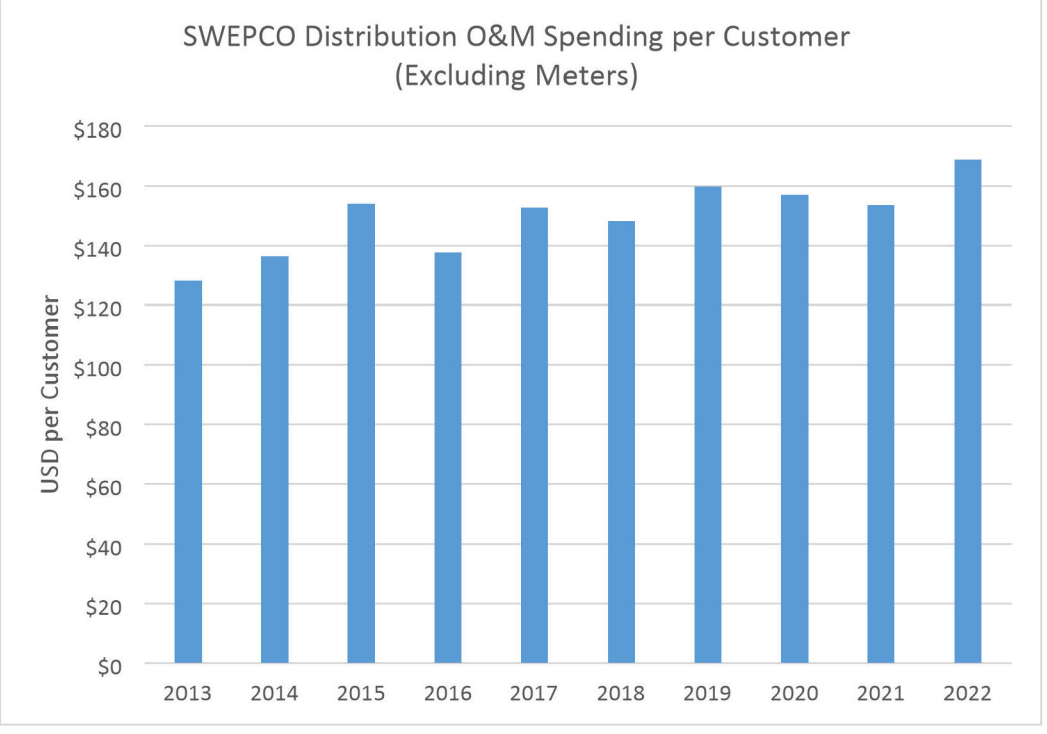

Figure 2G_H: SWEPCO Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

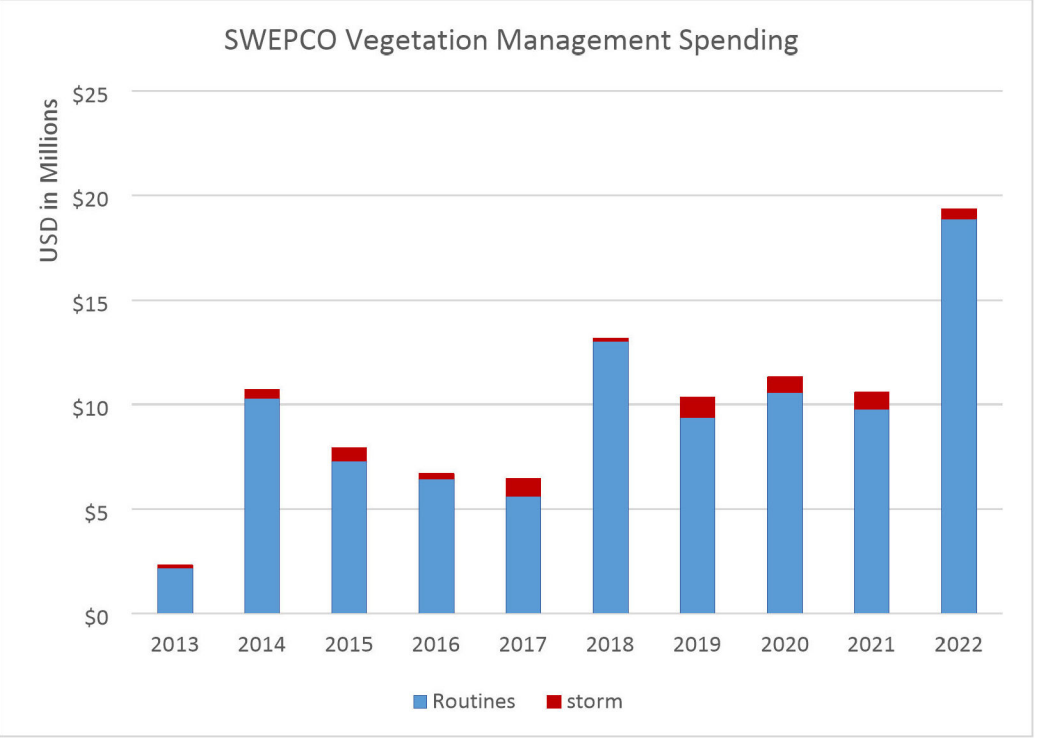

Figure 2G_I: SWEPCO Vegetation Management Spending for 2013 - 2022

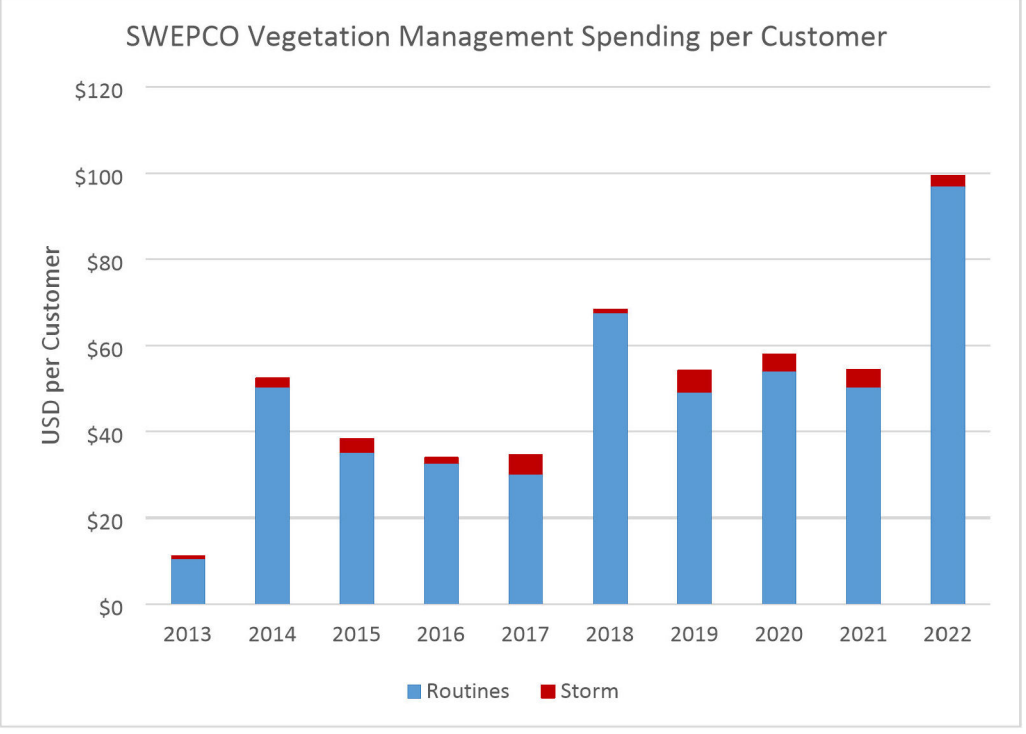

Figure 2G_J: SWEPCO Vegetation Management Spending per Customer for 2013 - 2022

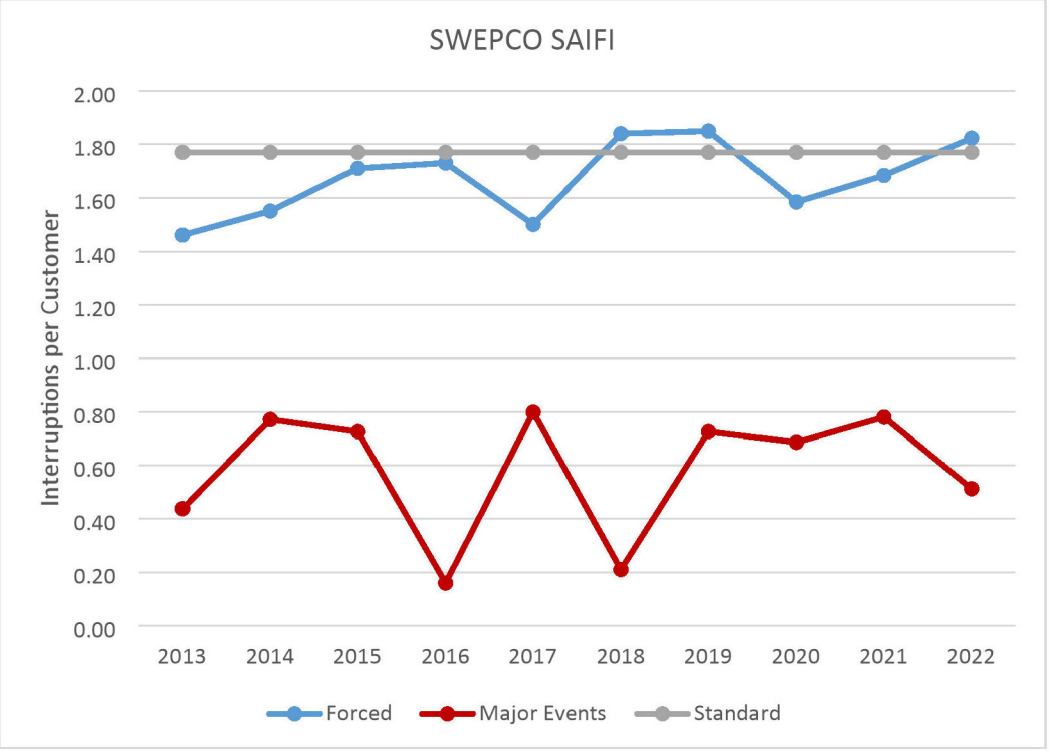

Figure 2G_K: SWEPCO SAIFI for 2013 - 2022

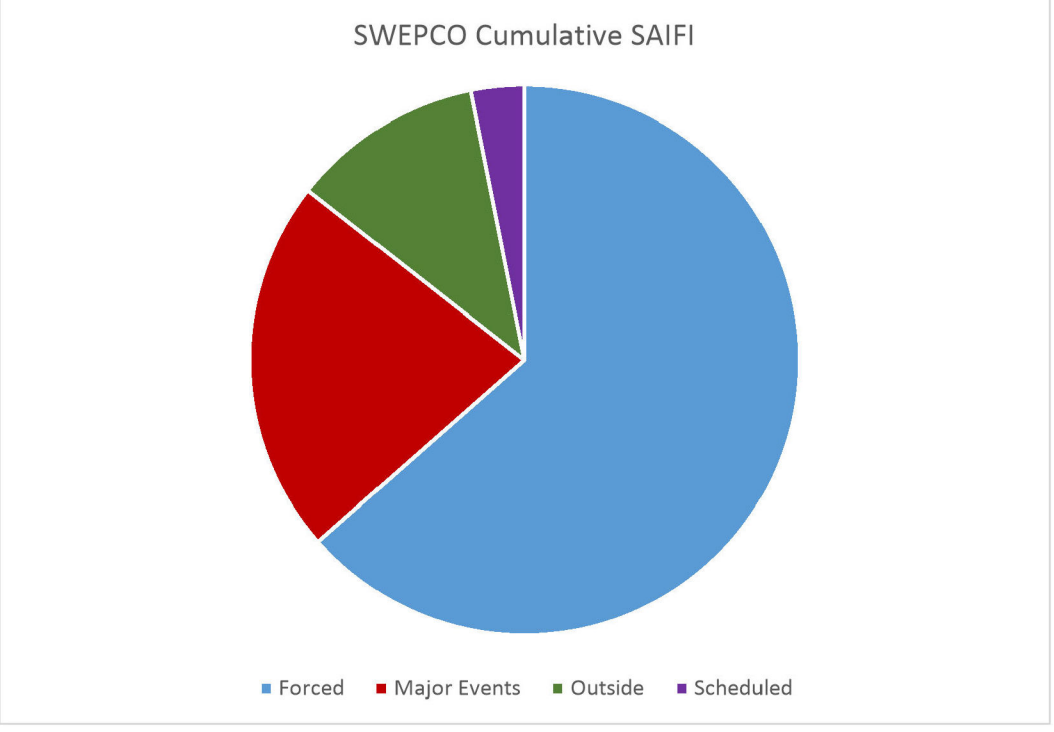

Figure 2G_L: SWEPCO Cumulative SAIFI Proportions for 2013 - 2022

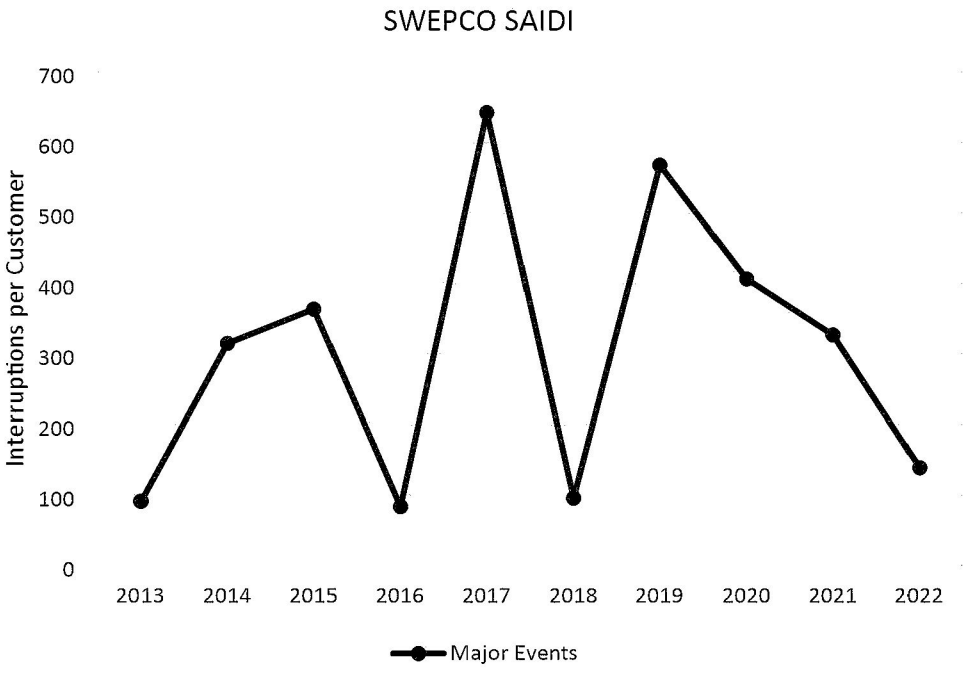

Figure 2G_M (i): SWEPCO SAIDI for Major Events for 2013 - 2022

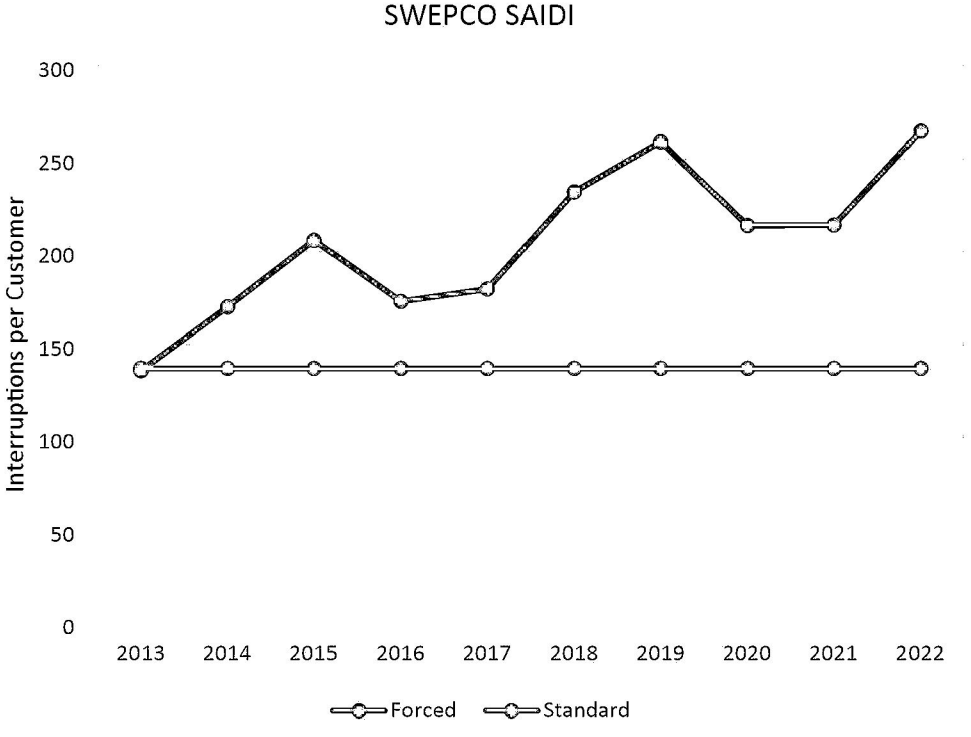

Figure 2G_M (ii): SWEPCO SAIDI for Forced Outages for 2013 - 2022

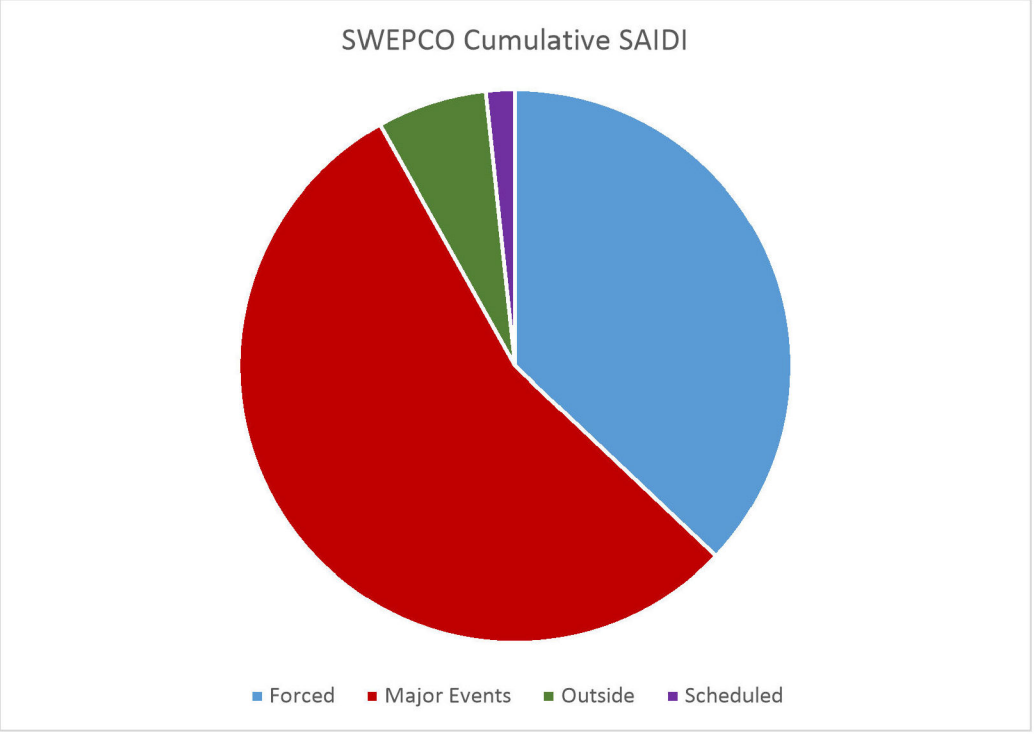

Figure 2G_N: SWEPCO Cumulative SAIDI Proportions for 2013 - 2022

Section 2H: Southwestern Public Service Company (SPS)

Number of Service Points	265,014
Miles of Distribution Lines	10,918
Number of Service points per mile of distribution line	24

SPS's service territory includes portions of both Texas and New Mexico. The spending data and per customer values provided are for all its service area with the exception of VM, which are only for Texas. The reliability data are also only for Texas.

SAIDI for 2017 and 2021 are high due to winter storm Jupiter and Winter Storm Uri, respectively.

SPS's storm reserve expenditures are not separated out of the VM budget. Hence, storm expenses are not shown separately in Figure 2H_I.

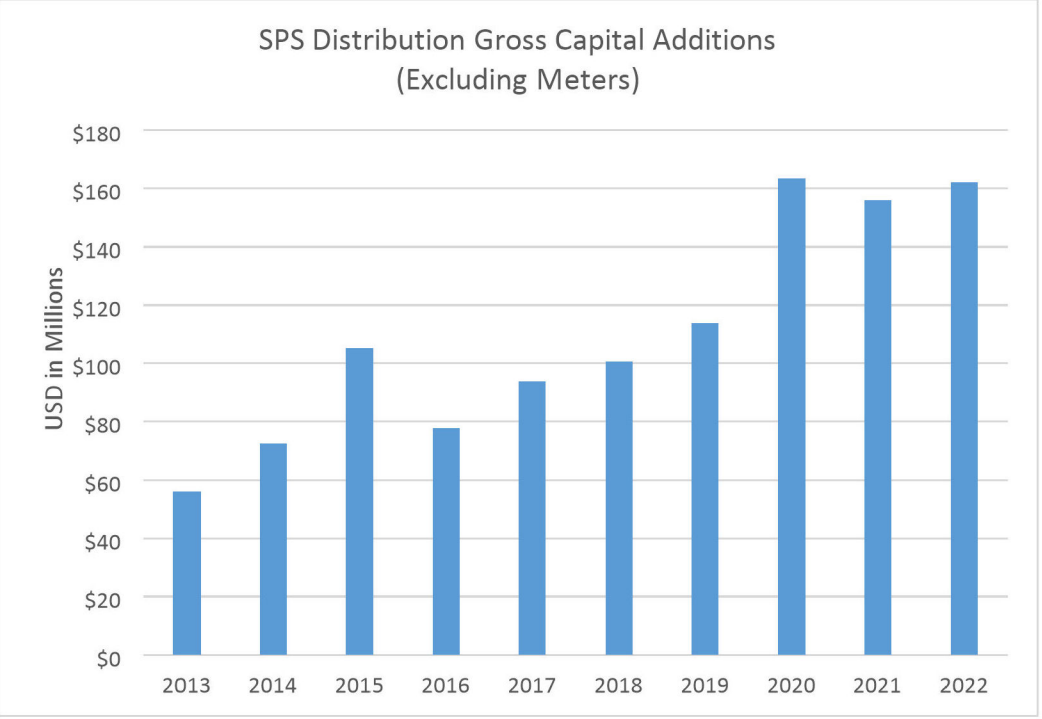

Figure 2H_A: SPS Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

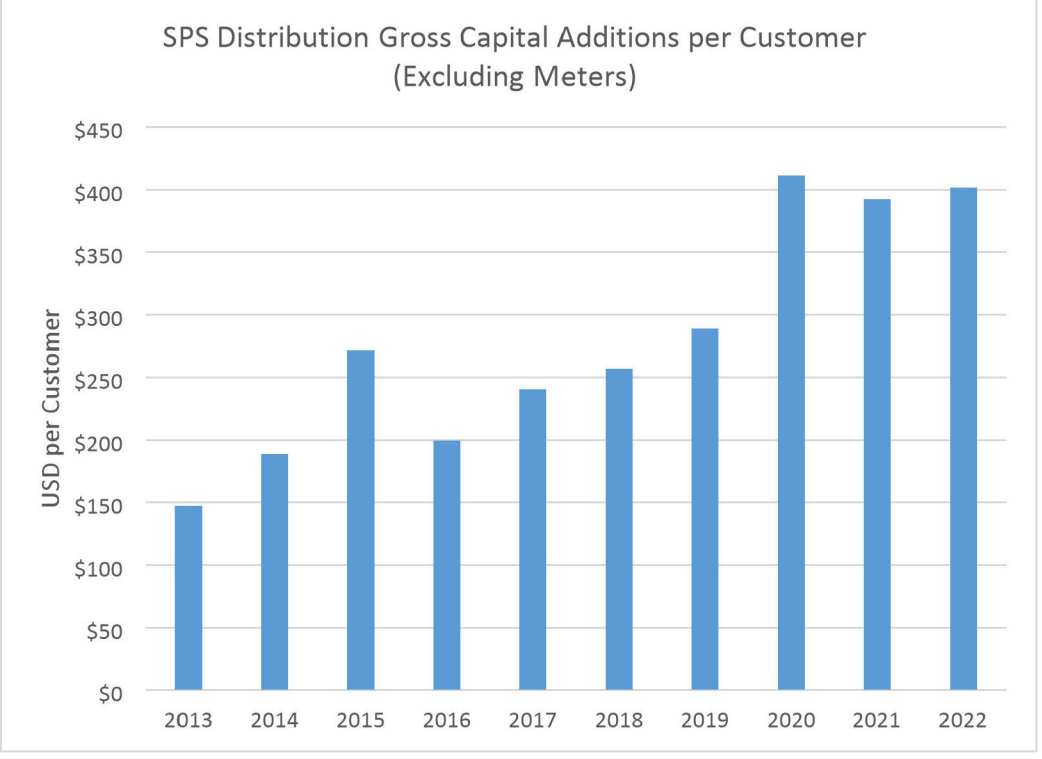

Figure 2H_B: SPS Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

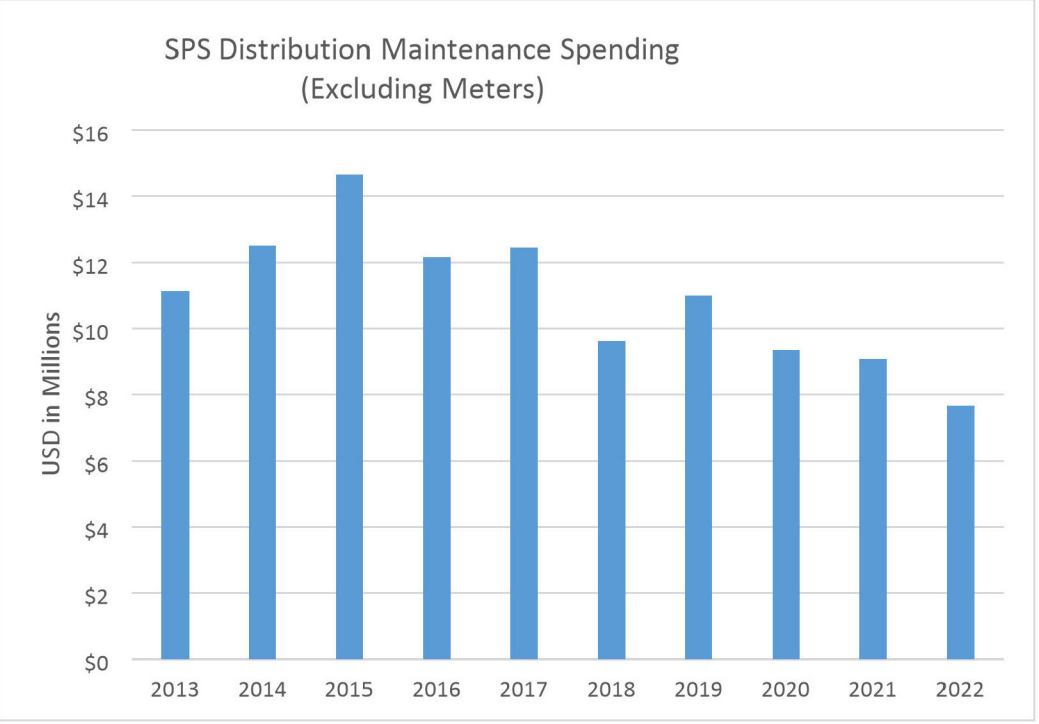

Figure 2H_C: SPS Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

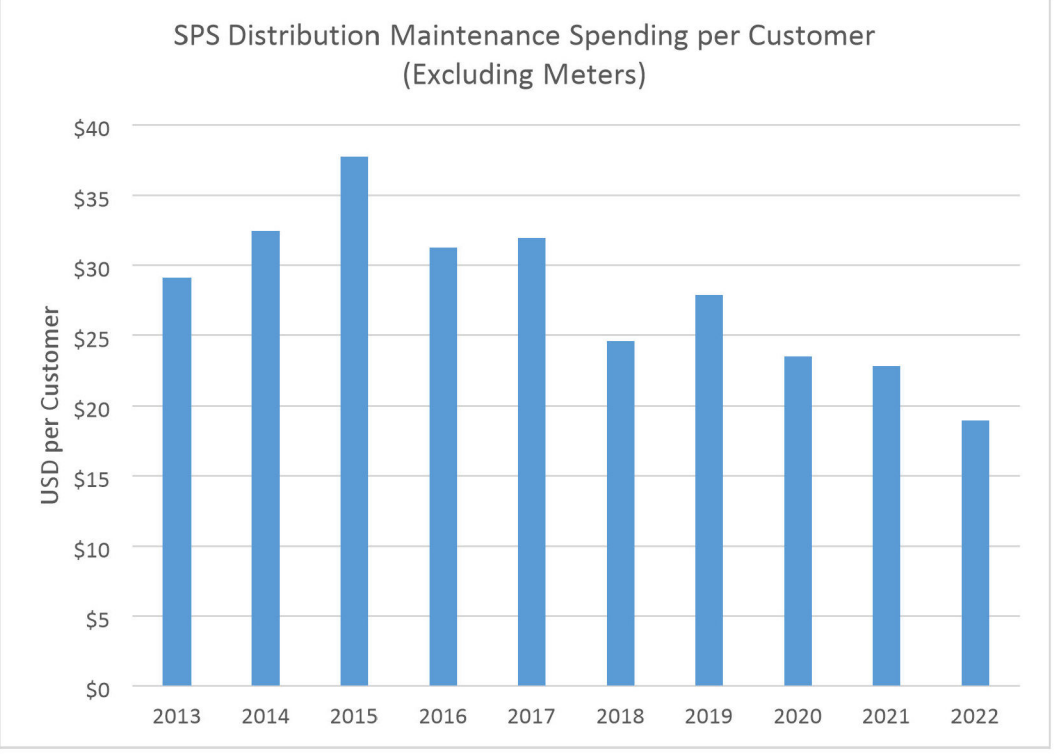

Figure 2H_D: SPS Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

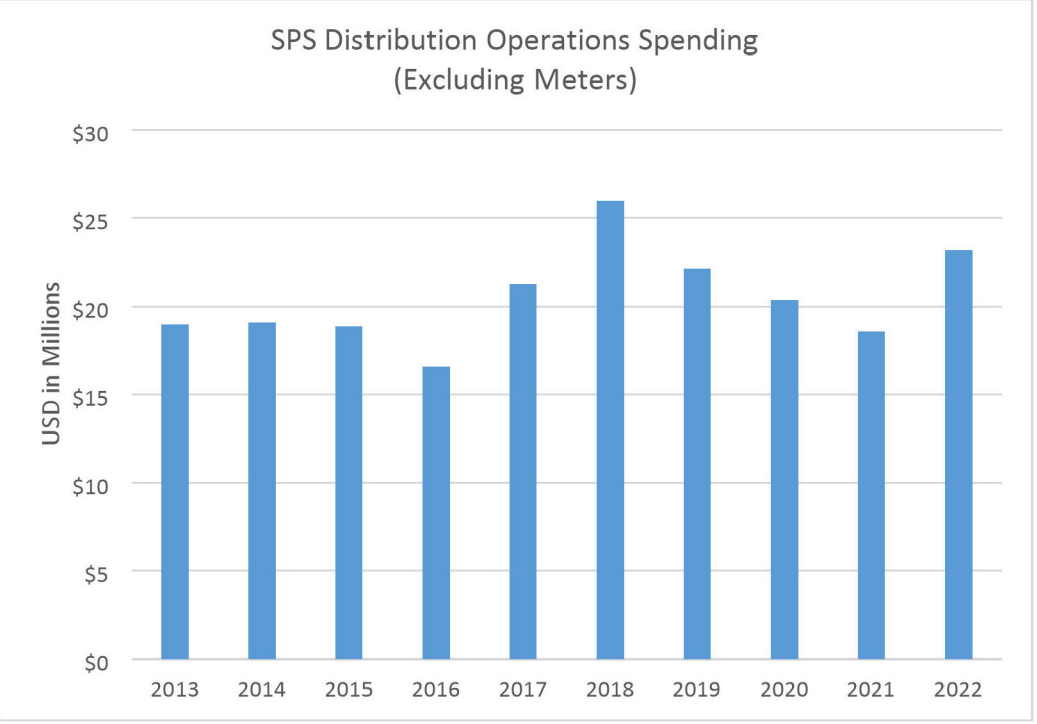

Figure 2H_E: SPS Distribution Operations Spending (Excluding Meters) for 2013 - 2022

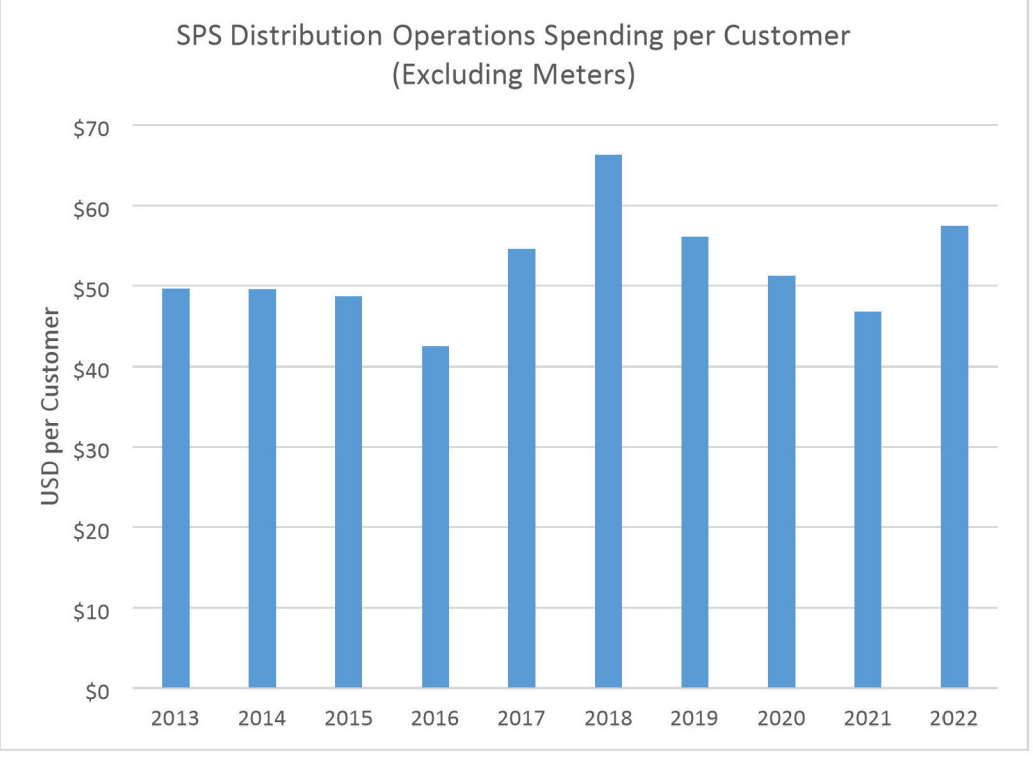

Figure 2H_F: SPS Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

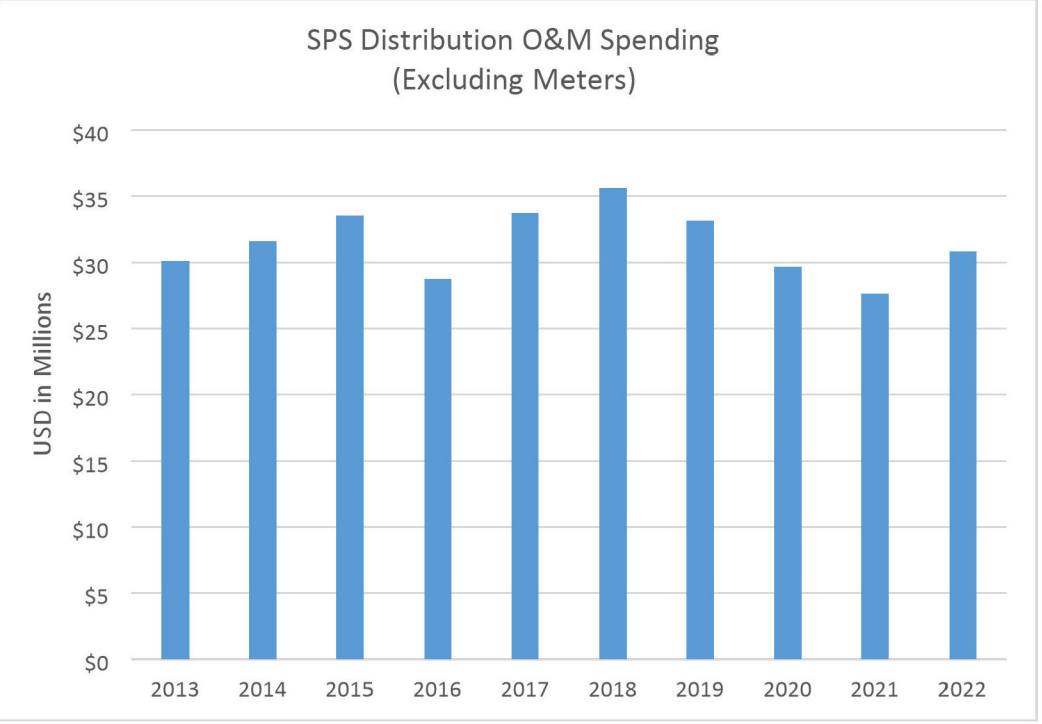

Figure 2H_G: SPS Distribution O&M Spending (Excluding Meters) for 2013 - 2022

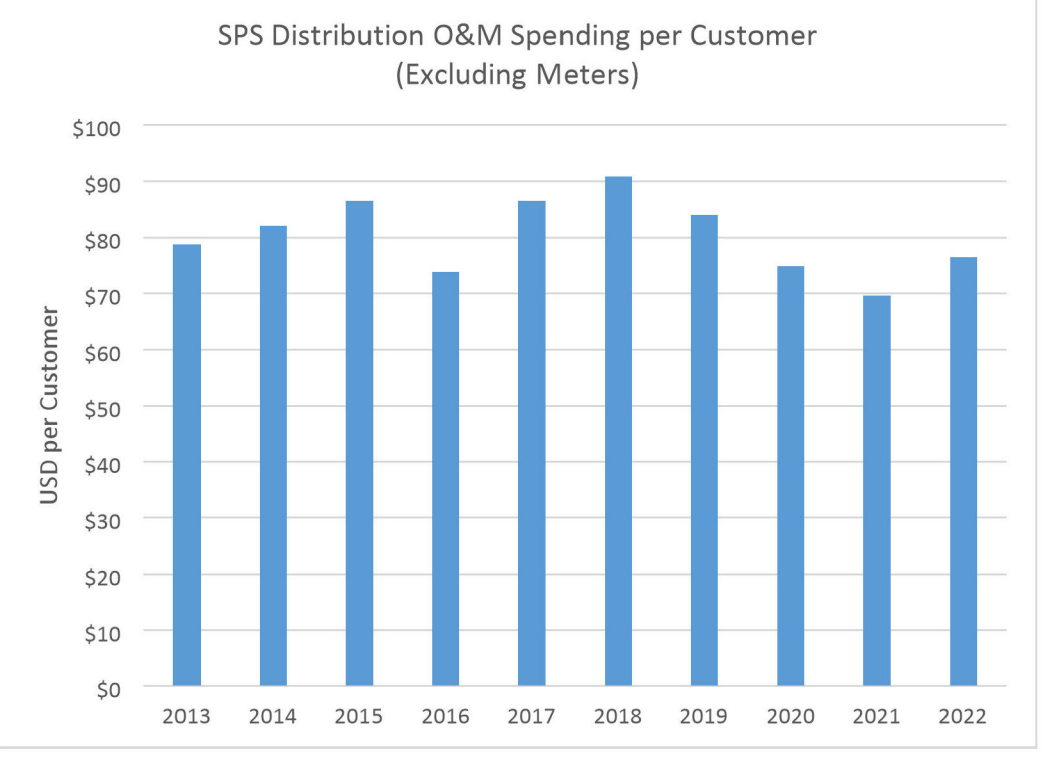

Figure 2I_H: SPS Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

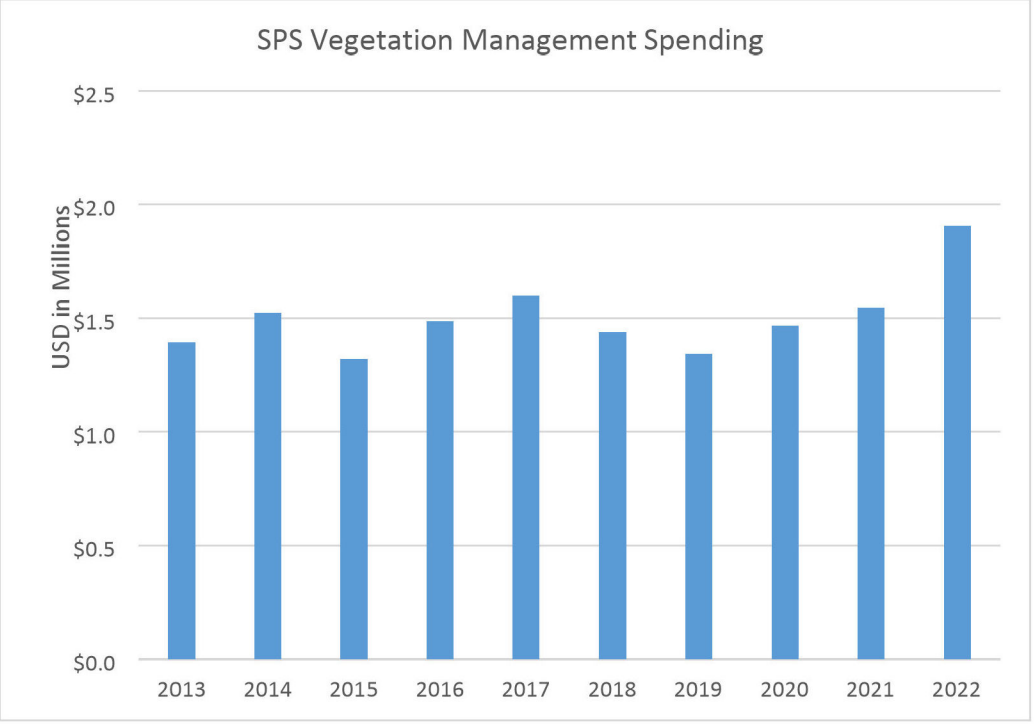

Figure 2H_I: SPS Vegetation Management Spending for 2013 - 2022

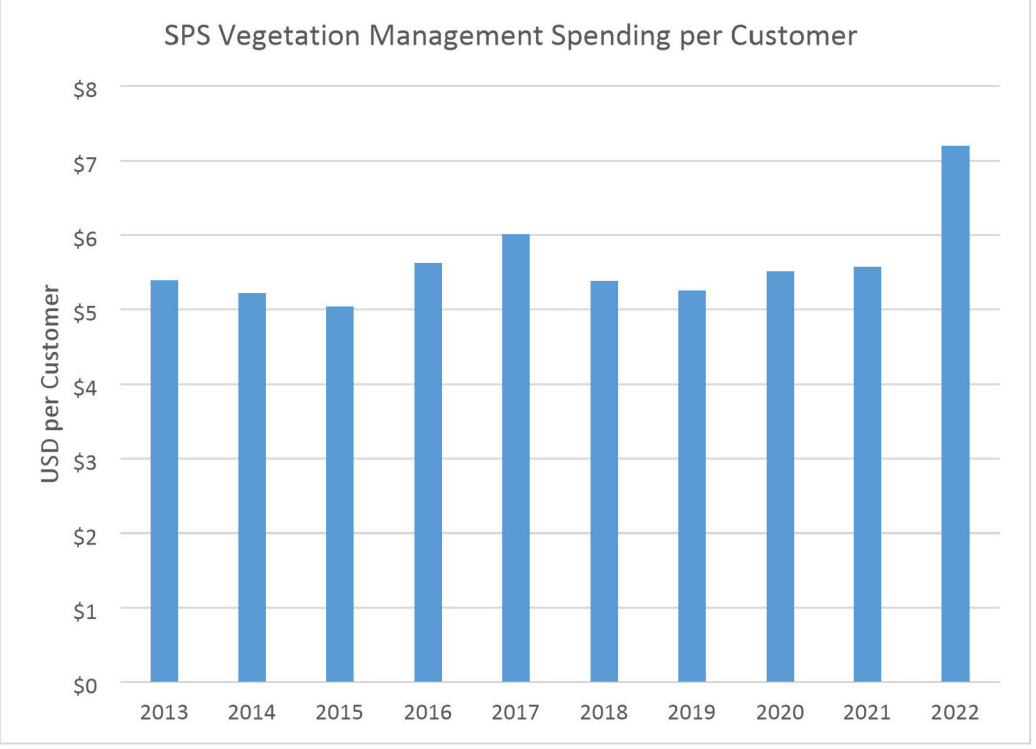

Figure 2H_J: SPS Vegetation Management Spending per Customer for 2013 - 2022

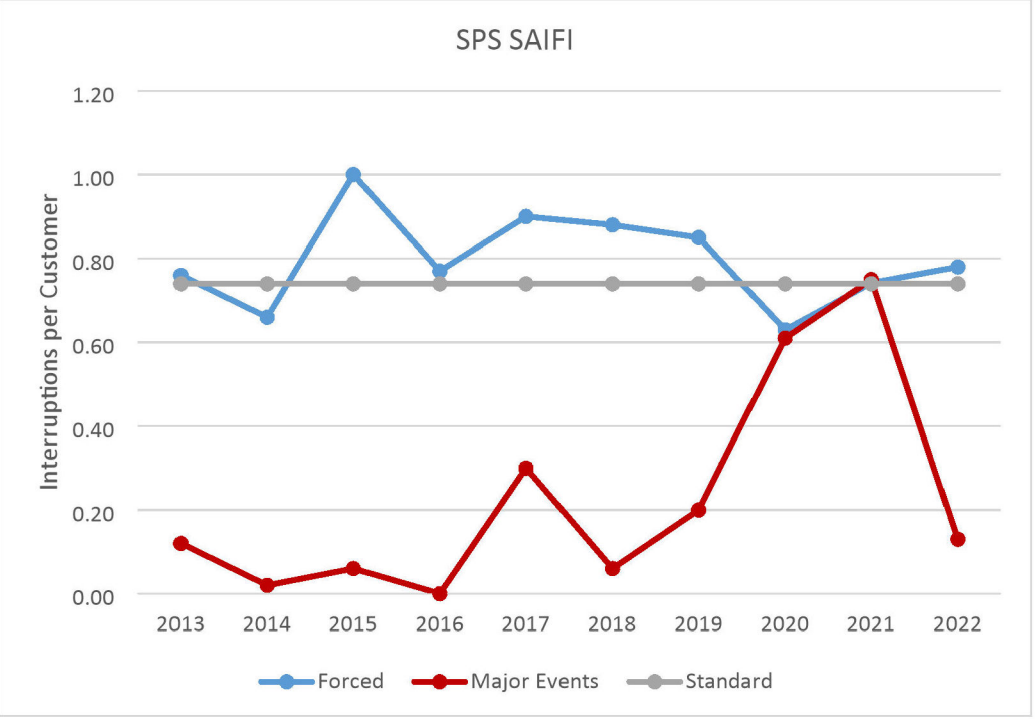

Figure 2H_K: SPS SAIFI for 2013 - 2022

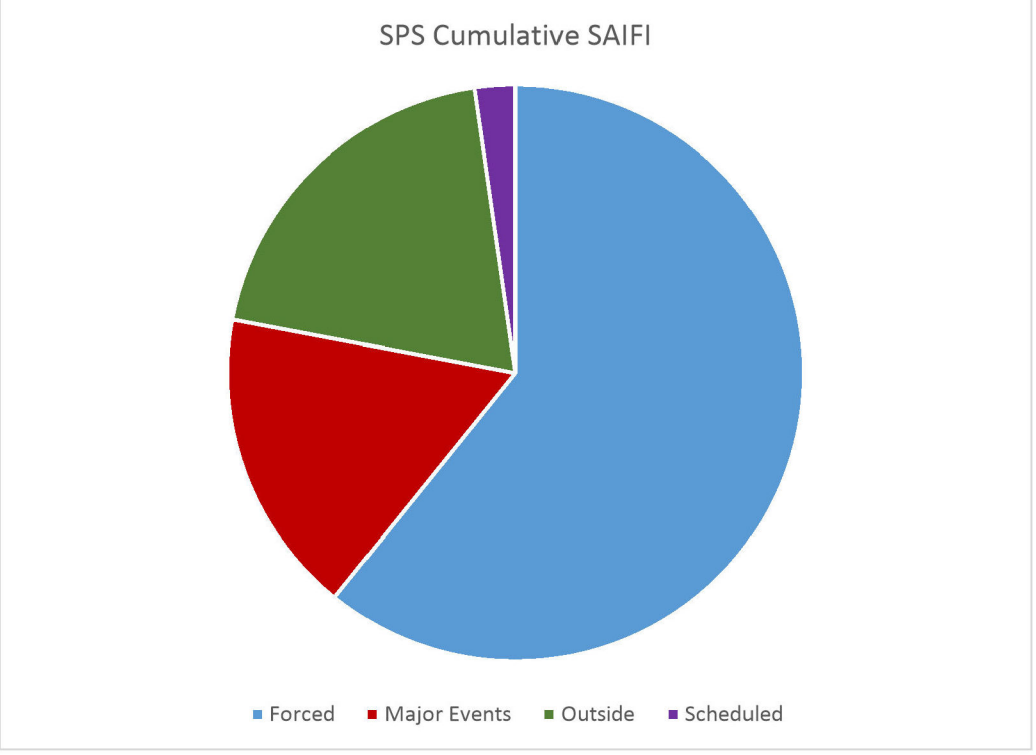

Figure 2H_L: SPS Cumulative SAIFI Proportions for 2013 - 2022

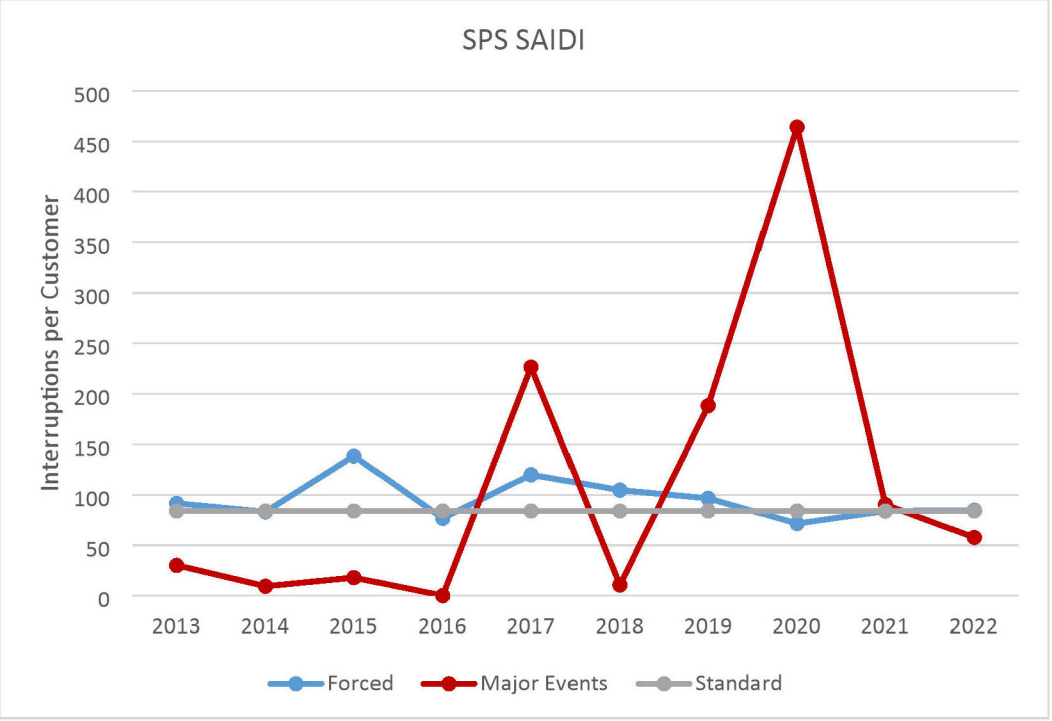

Figure 2H_M: SPS SAIDI for 2013 - 2022

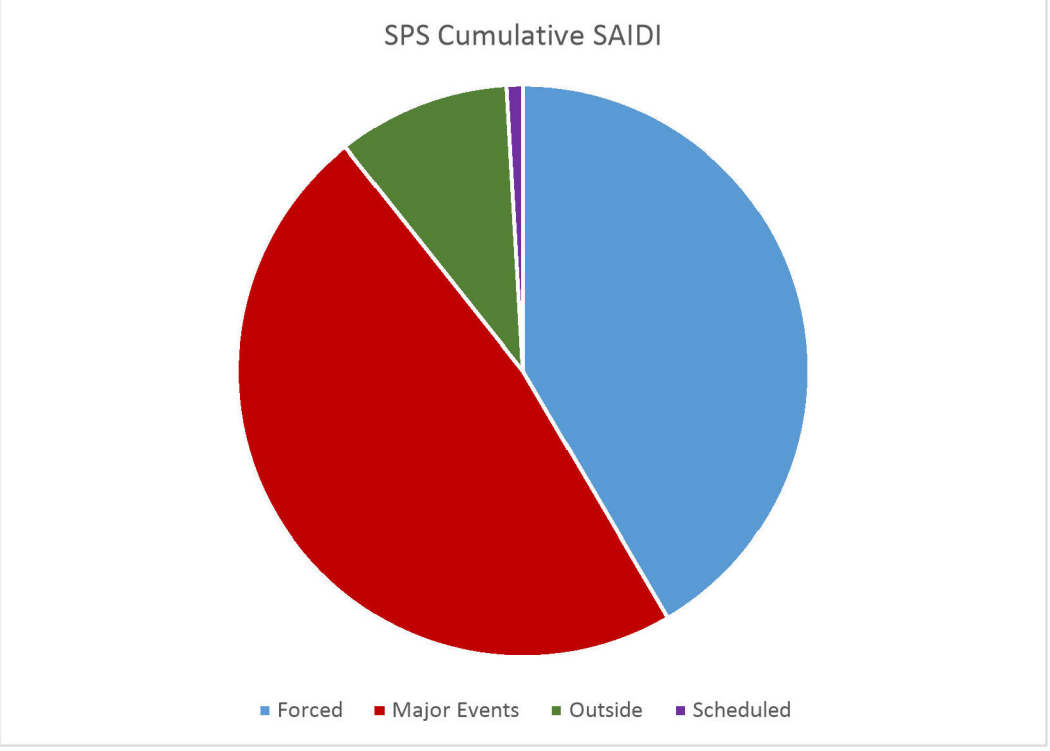

Figure 2H_N: SPS Cumulative SAIDI Proportions for 2013 - 2022

Electric Utility Distribution System Spending and Reliability

Project No. 46735

Section 2I: Texas-New Mexico Power Company (TNMP)

Number of Service Points	269,944
Miles of Distribution Lines	8,225
Number of Service points per mile of distribution line	32

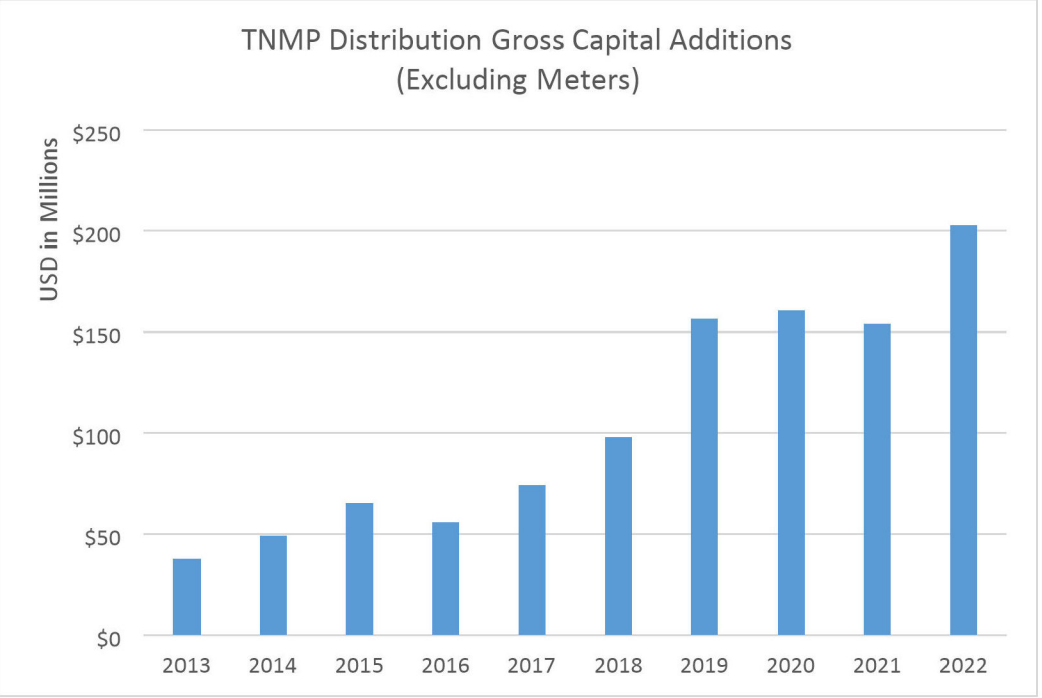

Figure 2J_A: TNMP Distribution Gross Capital Additions (Excluding Meters) for 2013 - 2022

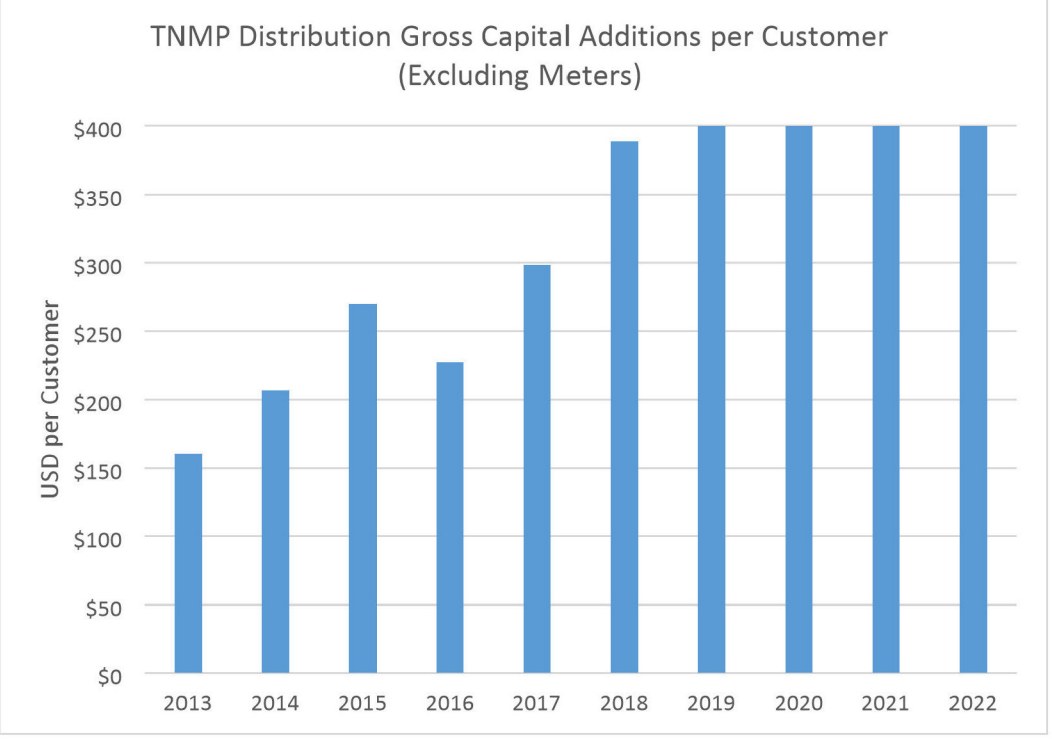

Figure 2J_B: TNMP Distribution Gross Capital Additions per Customer (Excluding Meters) for 2013 - 2022

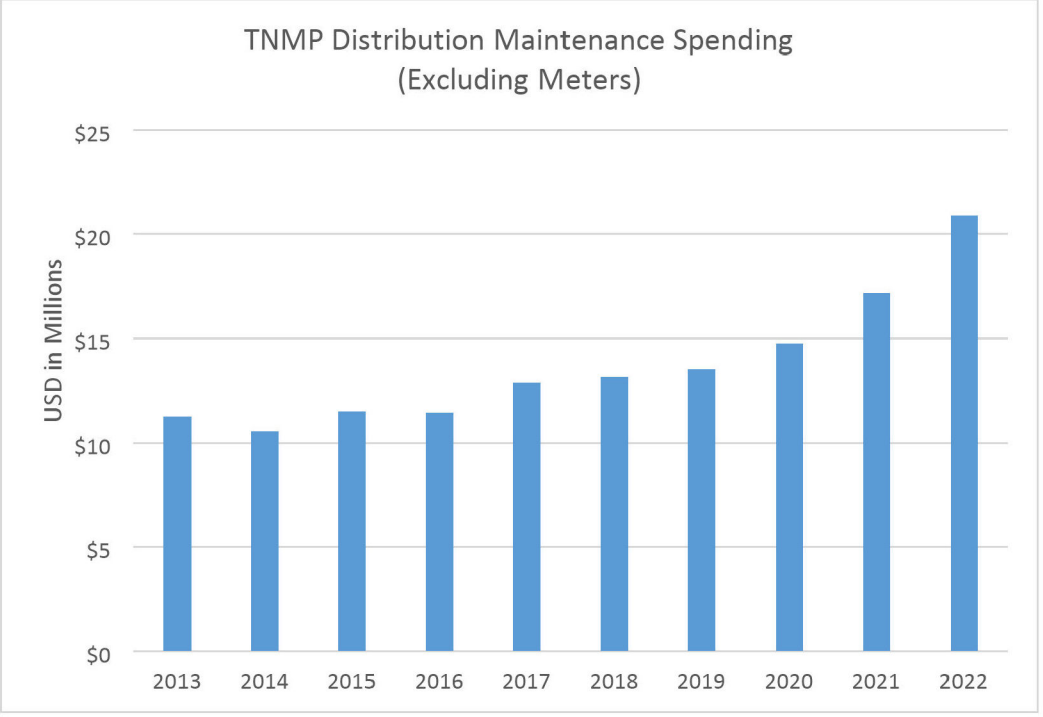

Figure 2J_C: TNMP Distribution Maintenance Spending (Excluding Meters) for 2013 - 2022

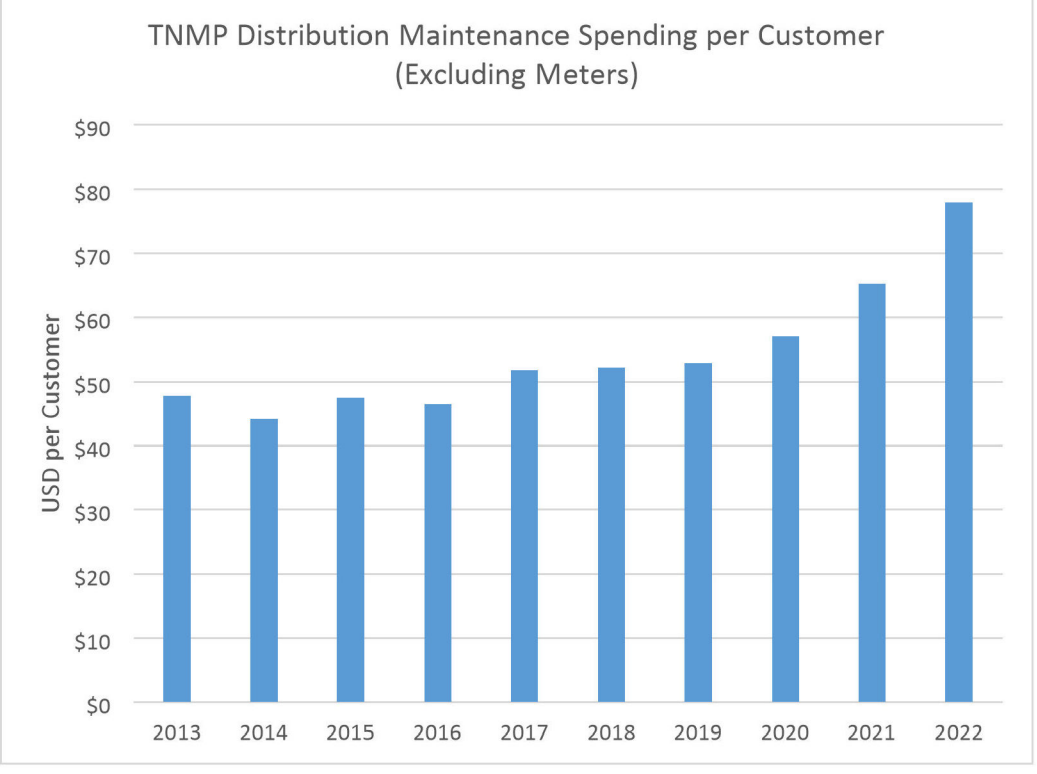

Figure 2J_D: TNMP Distribution Maintenance Spending per Customer (Excluding Meters) for 2013 - 2022

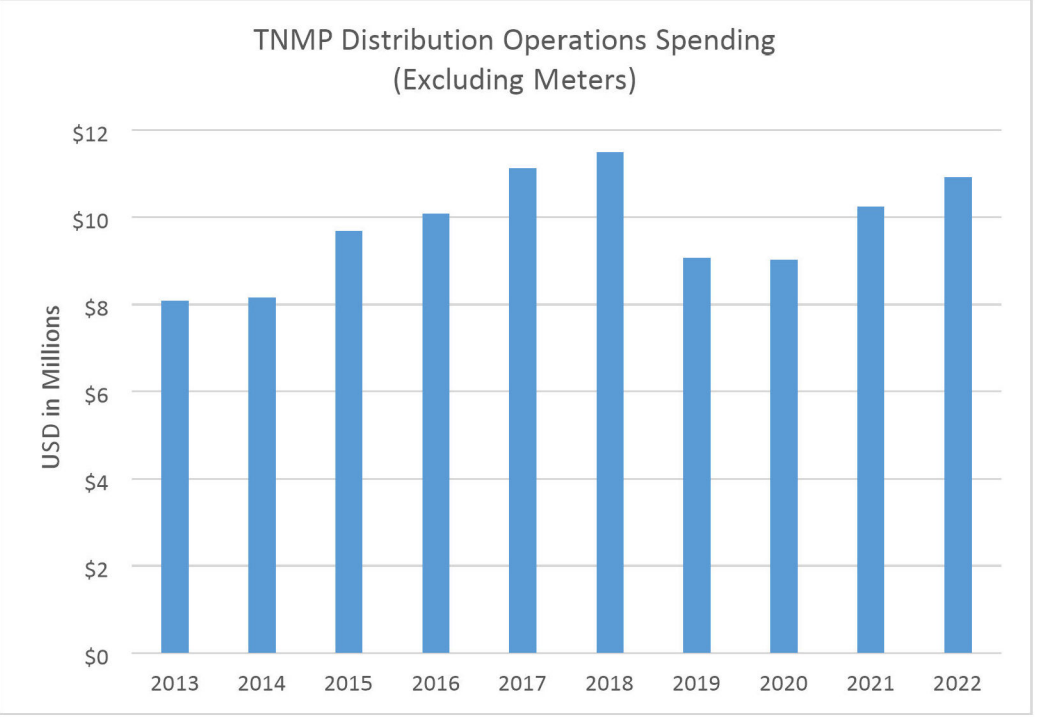

Figure 2J_E: TNMP Distribution Operations Spending (Excluding Meters) for 2013 - 2022

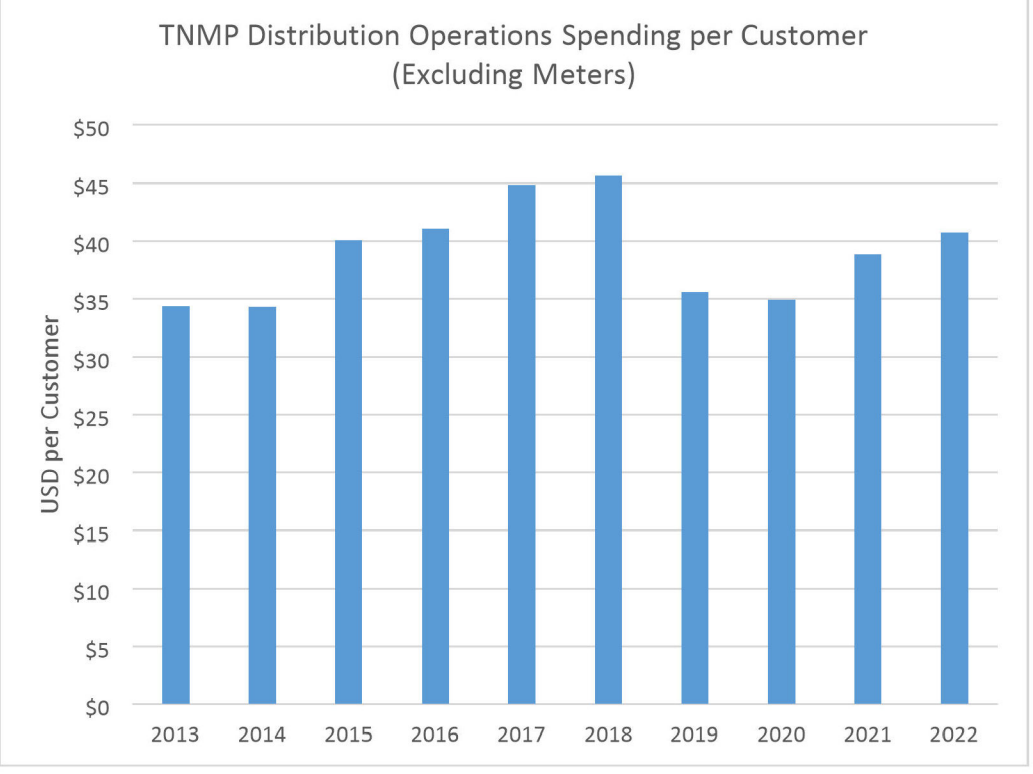

Figure 2J_F: TNMP Distribution Operations Spending per Customer (Excluding Meters) for 2013 - 2022

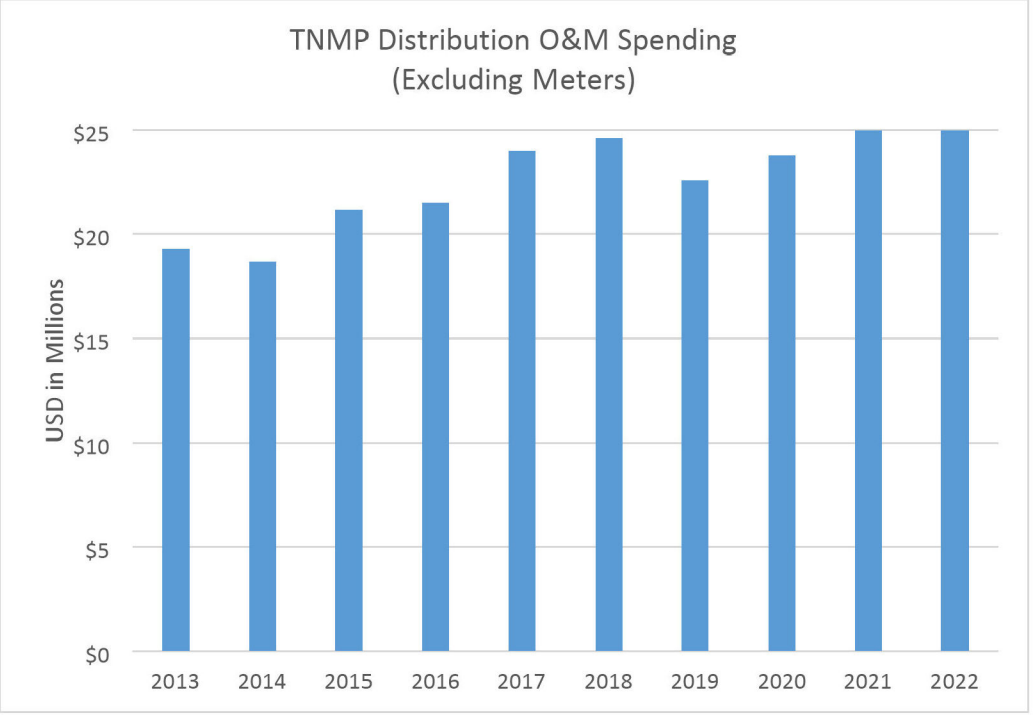

Figure 2J_G: TNMP Distribution O&M Spending (Excluding Meters) for 2013 - 2022

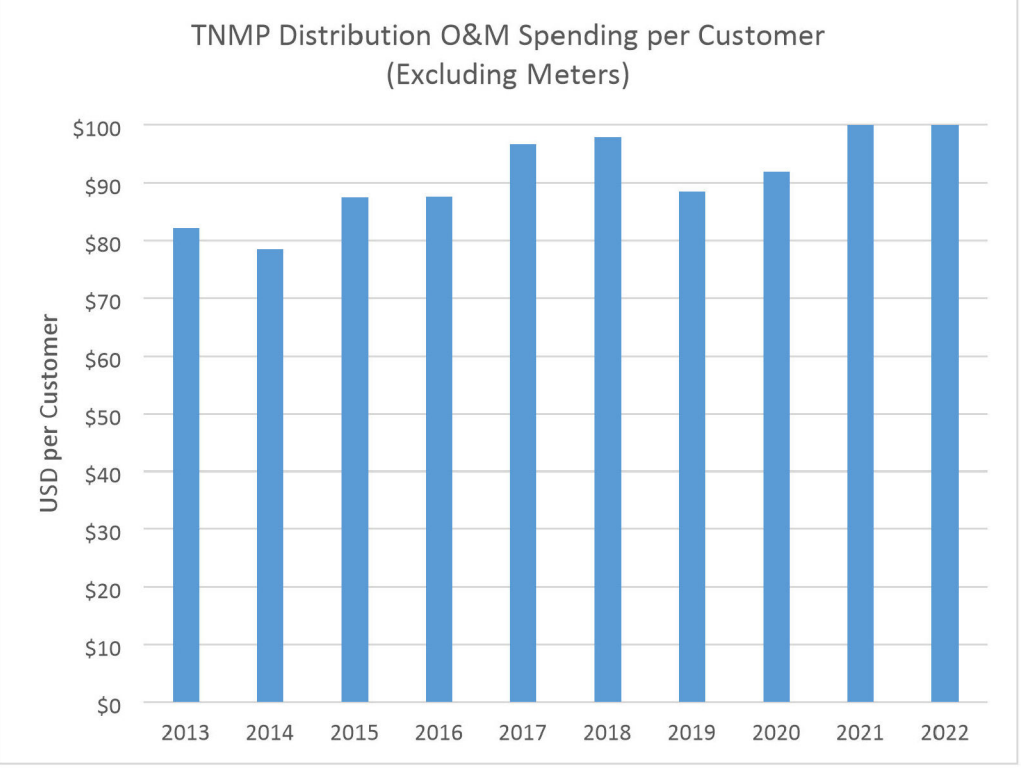

Figure 2J_H: TNMP Distribution O&M Spending per Customer (Excluding Meters) for 2013 - 2022

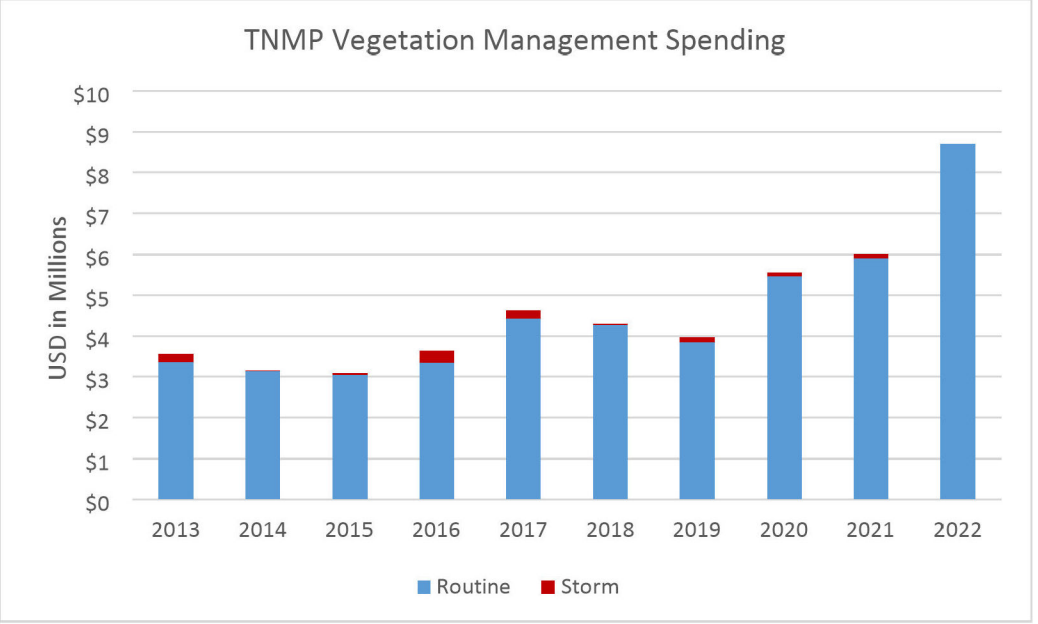

Figure 2J_I: TNMP Vegetation Management Spending for 2013 - 2022[3]

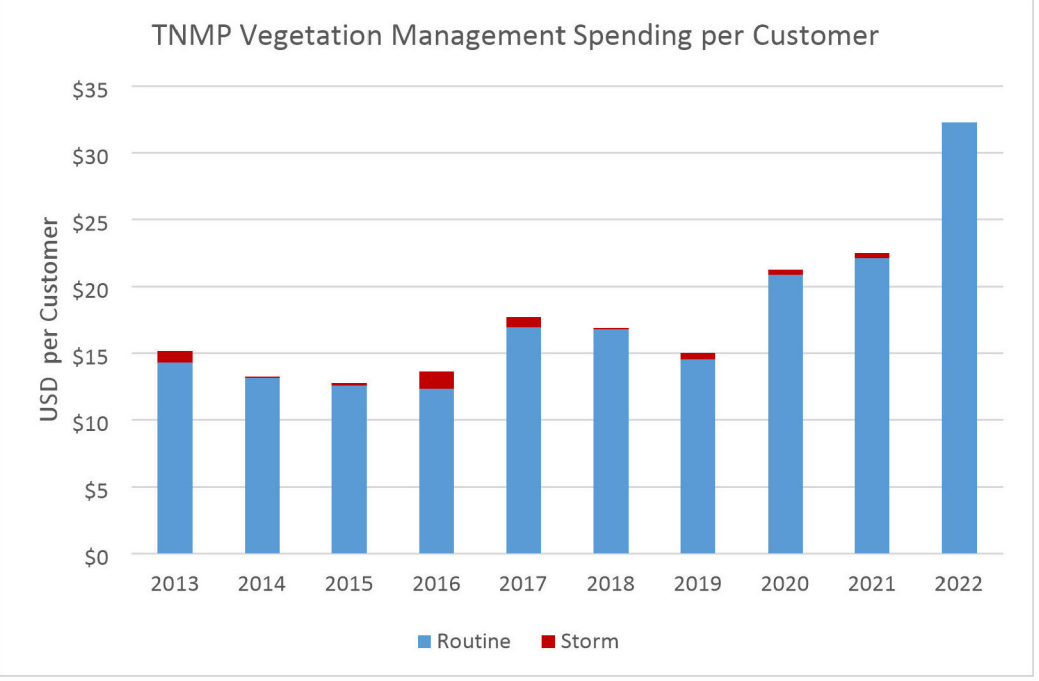

Figure 2J_J: TNMP Vegetation Management Spending per Customer for 2013 - 2022

[3] TNMP did not provide separate storm related expenses in its Annual Vegetation Management Report for 2022.

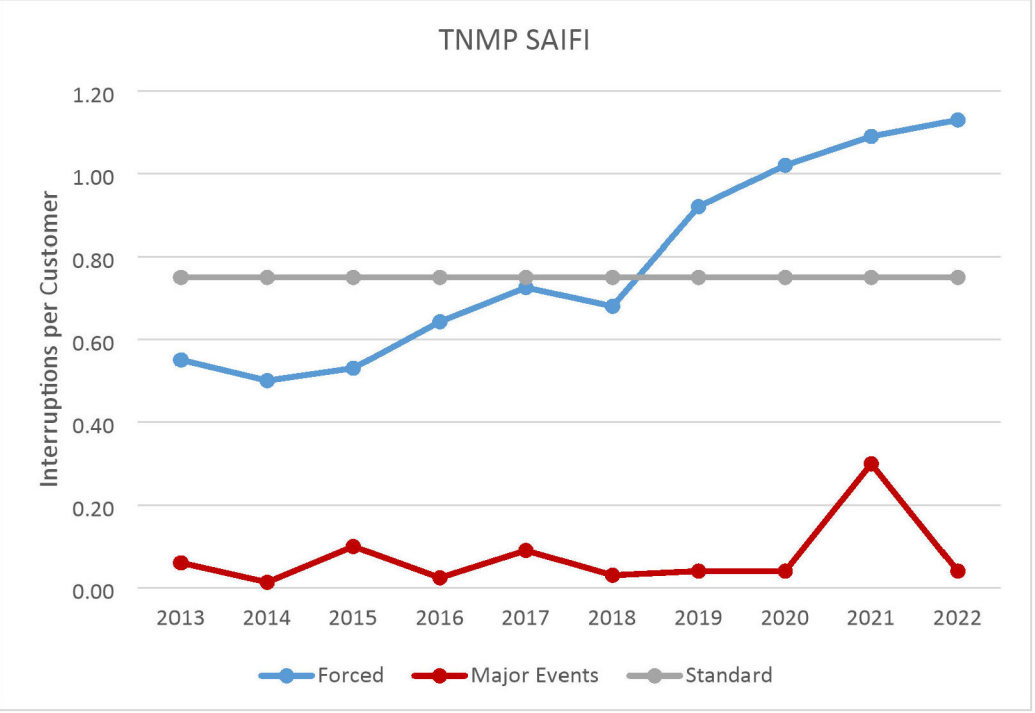

Figure 2J_K: TNMP SAIFI for 2013 - 2022

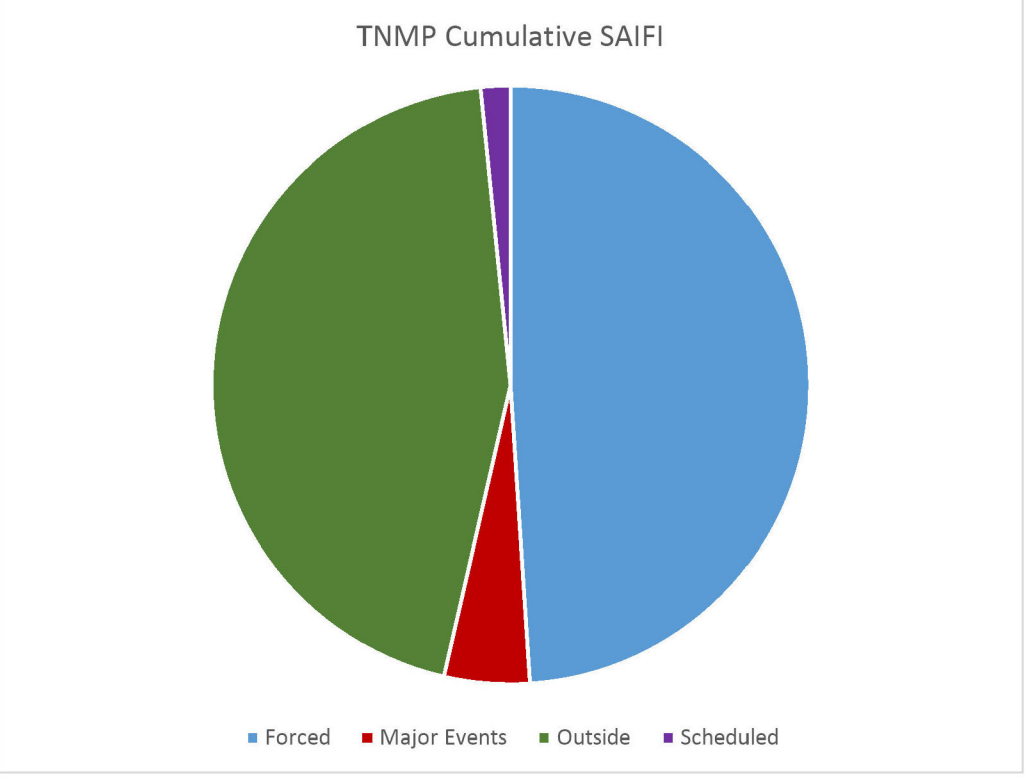

Figure 2J_L: TNMP Cumulative SAIFI Proportions for 2013 - 2022

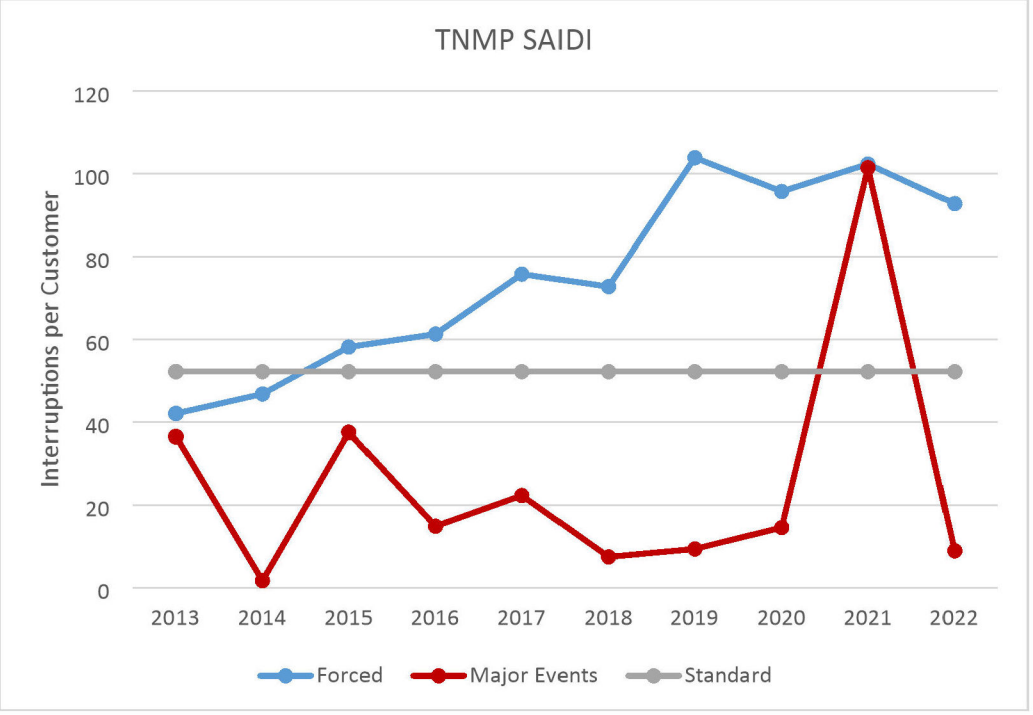

Figure 2J_M: TNMP SAIDI for 2013 - 2022

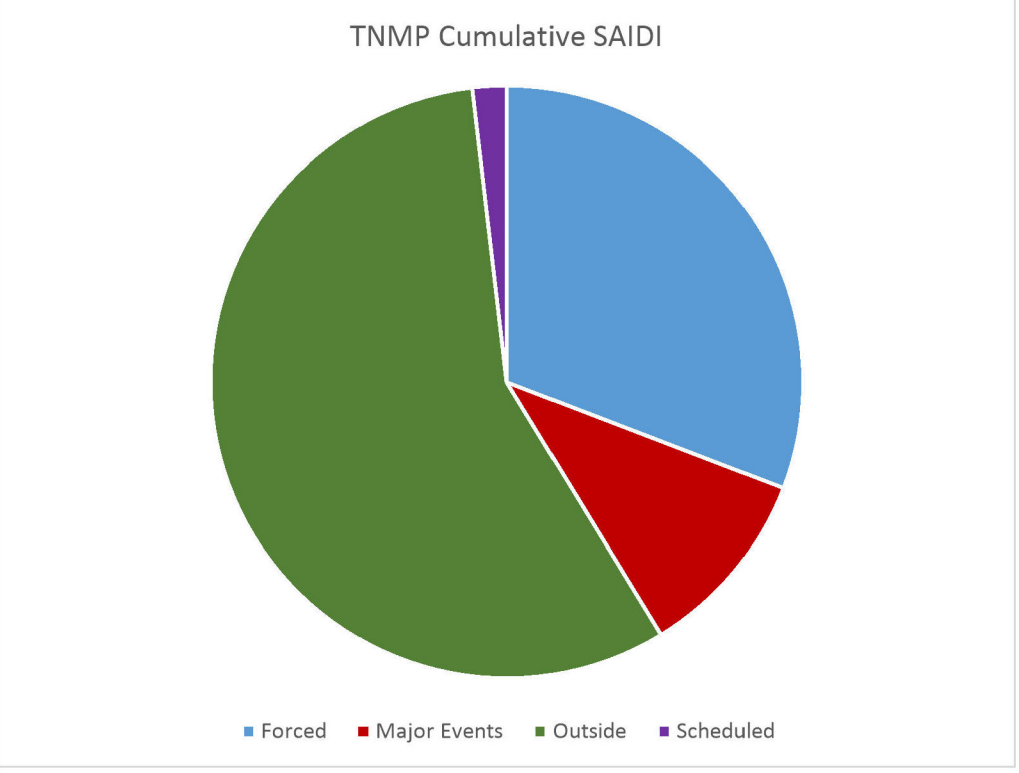

Figure 2J_N: TNMP Cumulative SAIDI Proportions for 2013 - 2022

SECTION 3: INTER-UTILITY COMPARISONS BY TYPES OF OUTAGES

Utilities submit annual service quality reports to the Commission. There are four categories of outages: forced, major event, outside causes, and scheduled; which are defined in 16 TAC § 25.52(c).[4] Additionally, these reports include data attributing the forced outages to various causes.

As the figures below illustrate, the distribution of outage categories varies considerably among the utilities. For example, outage times (SAIDI) from major storms and other major events were 74% of the total outage times experienced on AEP Texas' distribution system, whereas they were 25% on El Paso Electric Company's distribution system.

The last figures in this section, shown below, show the average annual frequency (SAIFI) and duration (SAIDI) of total outages experienced by customers over the last ten years. This time period was selected to allow derivation of averages over the same time period for all utilities.

[4] The reported outages do not include a momentary interruption, which 16 TAC § 25.52(c)(3) defines as a single operation of an interrupting device which results in a voltage zero and the immediate restoration of voltage. Each percentage in the figures reported in this section is the average of the percentages for each outage type per year per utility for the ten-year period covered by this report.

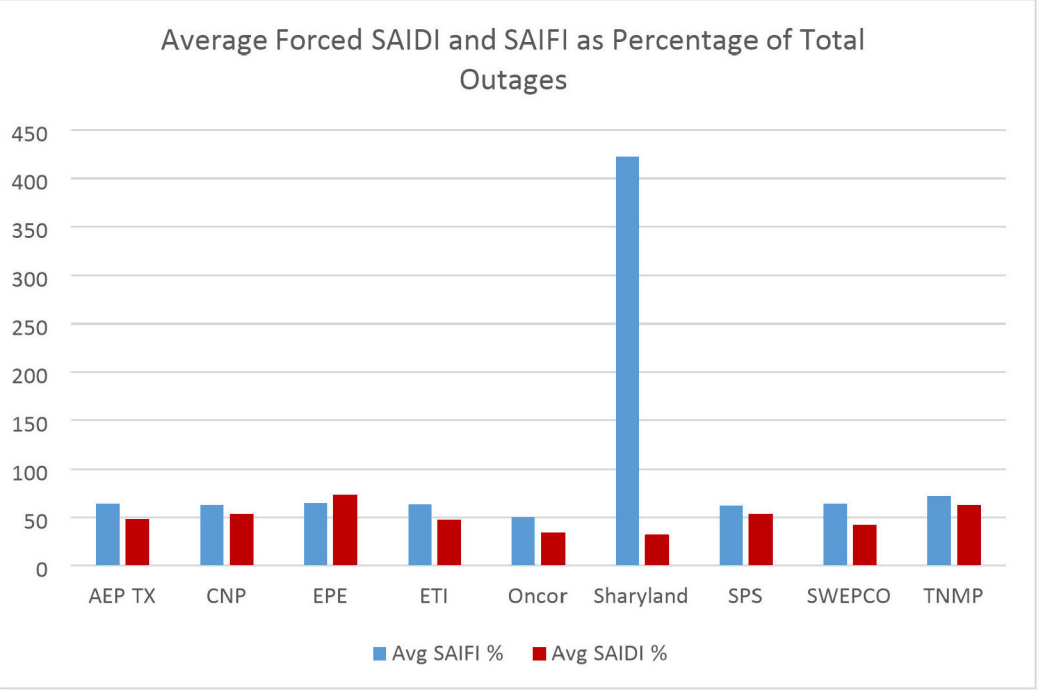

Figure 3(i): Average Forced SAIDI and SAIFI as Percentage of Each Utility's Total Outages to All Texas Distribution Utilities for 2013 – 2022

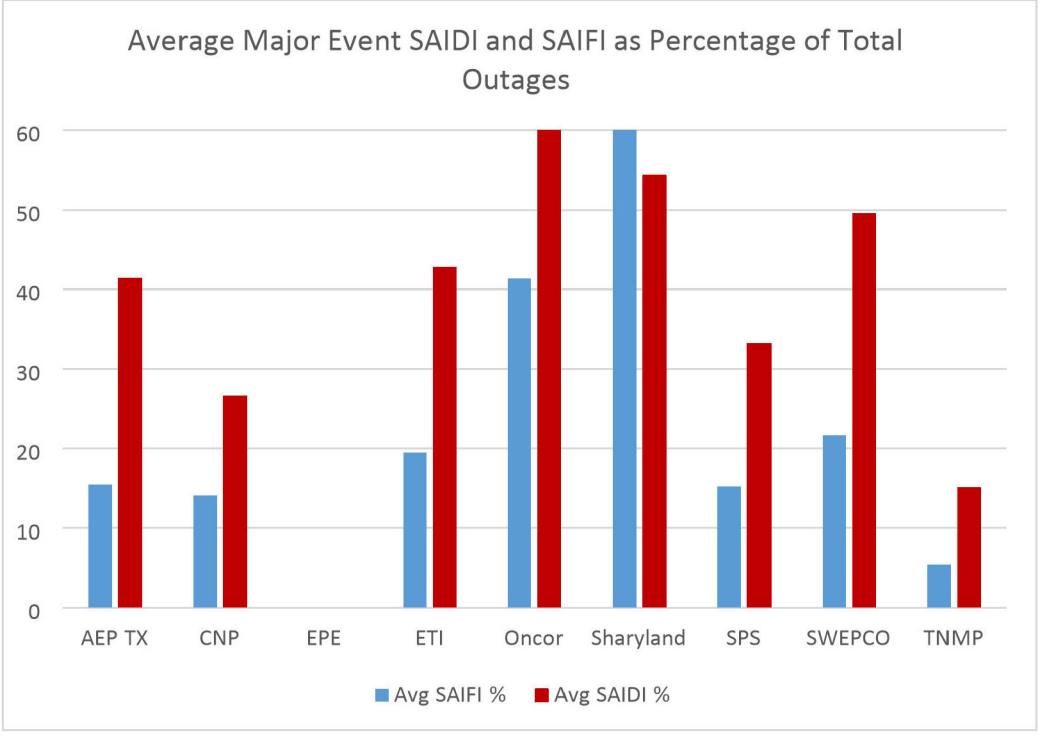

Figure 3(ii): Average Major Event SAIDI and SAIFI as Percentage of Each Utility's Total Outages to All Texas Distribution Utilities for 2013 - 2022

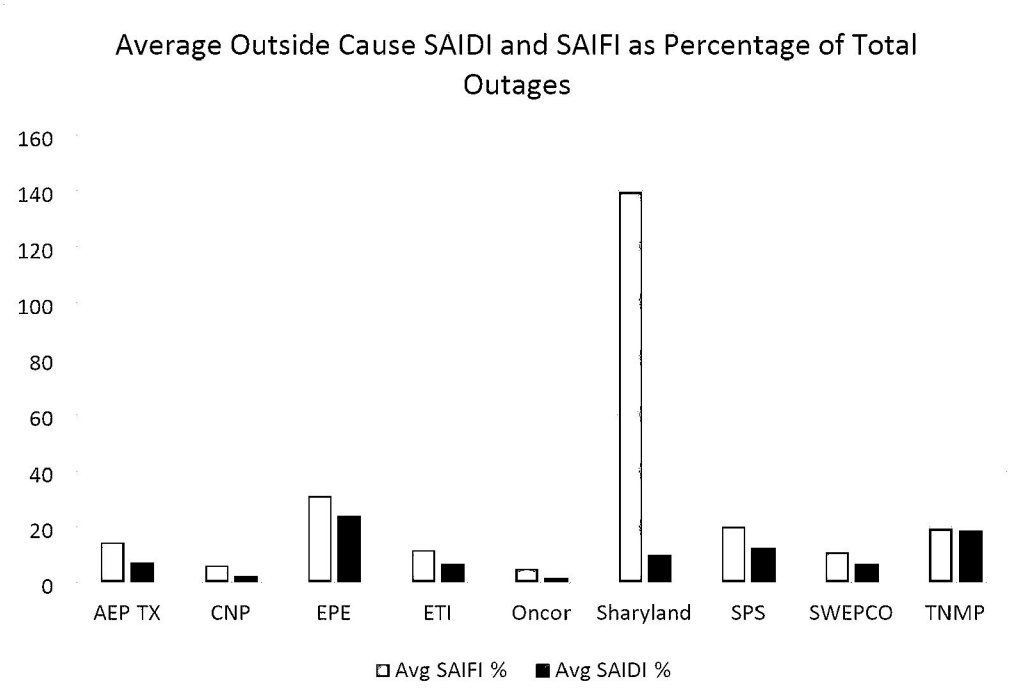

Figure 3(iii): Average Outside Cause SAIDI and SAIFI as Percentage of Each Utility's Total Outages to All Texas Distribution Utilities for 2013 – 2022

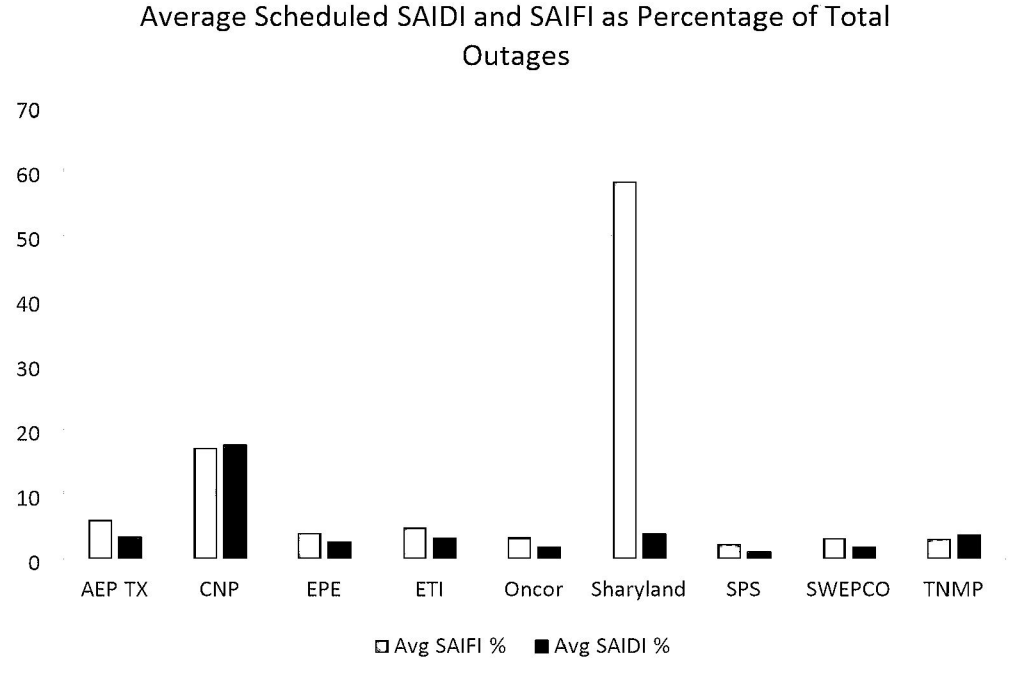

Figure 3(iv): Average Scheduled SAIDI and SAIFI as Percentage of Each Utility's Total Outages to All Texas Distribution Utilities for 2013 - 2022

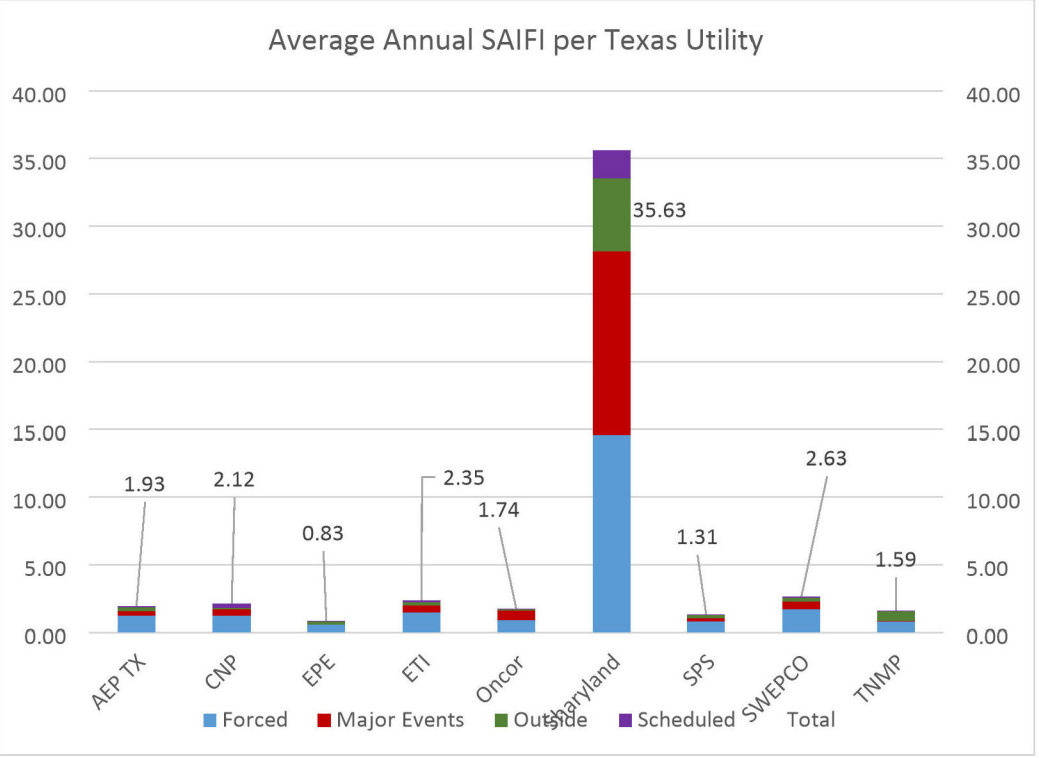

Figure 3(v): Average Annual Total SAIFI for Texas Utilities for 2013 - 2022

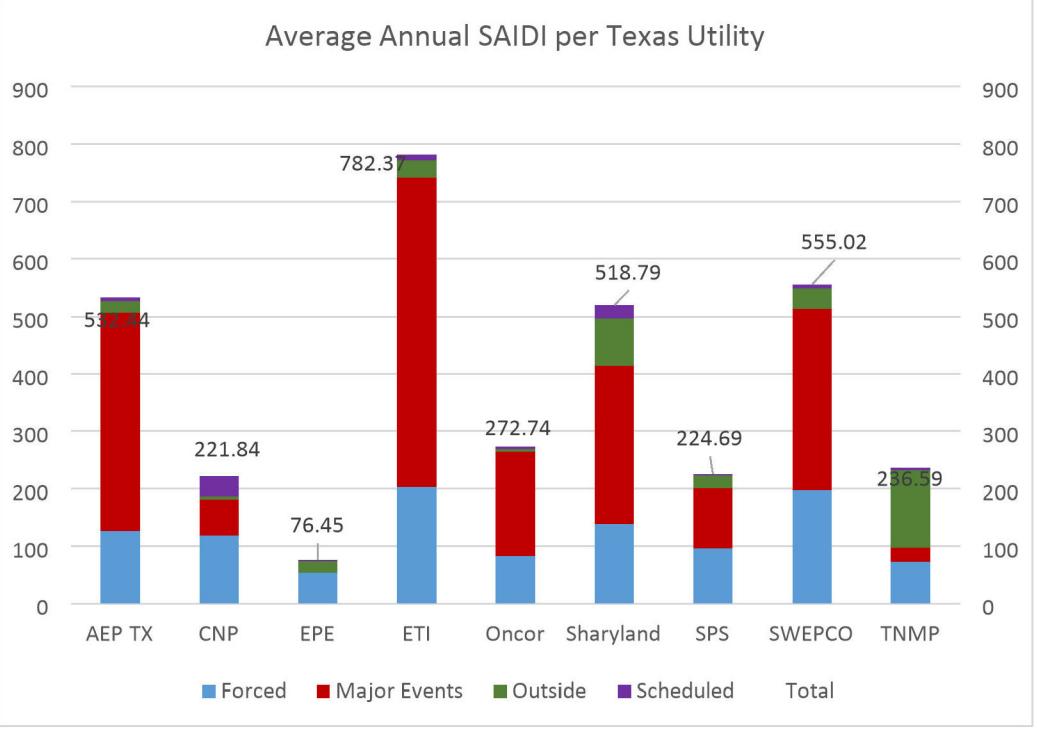

Figure 3(vi): Average Annual Total SAIDI for Texas Utilities for 2013 - 2022