OPERATIONAL EFFFICIENCY REVIEW OF CPS ENERGY

APRIL 7, 2023

PREPARED FOR

CPS Energy Board of Trustees

PREPARED BY

Daymark Energy Advisors

DAYMARK ENERGY ADVISORS
370 MAIN STREET, SUITE 325 | WORCESTER, MA 01608
TEL: (617) 778-5515 | DAYMARKEA.COM

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ADP	Affordability Discounts
AMI	Advanced Metering Infrastructure
BOT	Board of Trustees
CAAT	Computer-Assisted Auditing Techniques
CAC	Citizen Advisory Committee
CAIDI	Customer Average Interruption Duration Index
CEP	Committee on Emergency Preparedness
City Council	City of San Antonio City Council
CoSA	City of San Antonio
COSS	Cost of Service Study
DIMP	Distribution Integrity Management Plan
DR	demand response
EDS	Electric Delivery Service
EJ	environmental justice
ERCOT	Electric Reliability Council of Texas
ERP	Enterprise Resource Planning
EV	electric vehicle
FLISR	fault location, isolation, and service restoration
HCVA	High Call Volume Answering
IRP	Integrated Resource Planning
IV&V	Independent Verification and Validation
IVR	Interactive Voice Response
LADWP	Los Angeles Department of Water and Power
LRP	Legislative Regulatory and Policy Meetings
LSE	Load Serving Entities
MED	major event day
MUC	Municipal Utilities Committee
PHMSA	Pipeline and Hazardous Materials Safety Administration
PUCT	Public Utilities Commission of Texas
PV	solar photovoltaic
RAC	Rate Advisory Committee
RRC	Texas Railroad Commission
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
STEP	Save for Tomorrow Energy Plan
TIMP	Transmission Integrity Management Plan
UCT	Utility Cost Test
VVO	volt/VAR optimization

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I. EXECUTIVE SUMMARY

A. Objectives and scope

Daymark Energy Advisors (Daymark) was retained to perform an independent operational efficiency review of CPS Energy (CPSE). Daymark evaluated CPS Energy's performance from three perspectives: (1) financial health, (2) operational excellence, including both electric and gas operations, and (3) customer engagement, user experience, and services design. This report presents the results of Daymark's review.

B. Summary of findings and recommendations

This section presents Daymark's high-level findings and recommendations. Additional discussion, observations, and recommendations can be found in the corresponding subject area sections (IV., V., VI., VII.). In addition, for the convenience of the reader, a complete list of observations and recommendations is included as Appendix A.

CPS Energy organization-wide themes

Overall, our review of CPS Energy found a utility that is moving out of a reactive and into a proactive approach while facing resource constraints in many parts of the organization.

For many years, CPS Energy was able to offer competitive rates and strong electric reliability performance while avoiding rate increases through aggressive cost management and by realizing additional revenue through sales of surplus generated electricity into the Texas wholesale markets. Recently, however, responding to a combination of deferred expenditures, new investment needs to address reliability vulnerabilities revealed by Winter Storm Uri and decarbonization objectives, and staffing and financial challenges stemming from the pandemic, CPS Energy has begun a transition to a more proactive approach, making the first of a series of rate increase requests while it begins to rebuild staffing levels and take on deferred system upgrades and IT projects.

Daymark's survey of CPS Energy found a utility that is functioning well on many metrics, but that still faces a number of resource constraints, particularly in the area of staffing, and that has an ambitious list of programs and projects for the next five years and beyond. Working to ensure that staffing and other resources are adequate to allow CPS Energy to meet its goals while managing customer cost impacts is a central challenge CPS Energy faces across its organization.

Financial health

Despite forgoing base rate increases for eight years, CPS Energy has been successful in managing its financial health and maintaining acceptable financial metrics. However, the resulting lean organization and deferment of key initiatives such as replacement of its IT systems, coupled with disruptions relating to Winter Storm Uri and the pandemic, have created mounting cost pressures that require a transition to a cycle of more frequent base rate increases. In gaining approval for a 3.85% rate increase that took effect in March 2022, CPS Energy has communicated its plans to request regular rate increases approximately every two years at least through 2027.

Below are the highest-priority observations and recommendations for CPS Energy's financial health. In section IV. and Appendix A, Daymark presents additional recommendations and discusses all observations and recommendations in greater detail.

- CPS Energy is in stable financial position, with a debt capitalization ratio comparable to other peer utilities despite the growth in overdue customer accounts. CPS ENERGY and the CPS ENERGY Board of Trustees (the "Board") should continue their efforts in this area. If necessary, growth in overdue customer accounts should be considered in future rate increases.
- CPS Energy should work with the Board to build on *Vision 2027* to develop a medium- and long-term financial strategic planning process separate from the budget and rate request processes.

Operational excellence

In review of the operational excellence of CPS Energy, Daymark was charged with assessing historic operations, management, and sustaining and transition CPS Energy's workforce. Given that CPS Energy is both an electric and gas utility, Daymark approached this section by analyzing these two functions separately.

Through our review of such metrics against historic data and curated benchmarks, we observed a utility which operationally has achieved largely satisfactory outcomes over the period reviewed. Our analysis herein largely focuses on the core strategic challenges that our team perceived based on our review of files and procedures, discussions with management, and our industry experience. These strategic challenges, depending on how they are dealt with by CPS Energy, have the potential to worsen outcomes (e.g., experience greater frequencies/durations of service interruption or upward pressure on

rates), or, as we would hope, be dealt with in a way that increasingly positions CPS Energy as a model utility among its peers.

Below are the observations and recommendations for CPS Energy's operational excellence that Daymark deems as of the greatest prioritization. In section V., Daymark discusses all operations observations and recommendations in greater detail.

Electric operations

- Utilize circuit-level and root cause type reliability data to refine system investment strategy and document within the Reliability and Power Quality Report.
- Undertake an analysis of contracted resource usage within the electric operational units; we suggest one goal of such a review to be the establishment of decision criteria pertaining to outsourcing strategy.
- The Board and management should establish metrics which allow management and stakeholders to track the achievement of benefits that the grid modernization / OT / SCADA set of investments are intended to deliver.
- Resolve technological barriers to acting on circuit-level asset condition work orders.
- Develop a major outage restoration plan to establish necessary investments, practices, and procedures.
- Expand the justification and benefits descriptions for balancing O&M and non-critical projects within capital planning process.
- CPS Energy staff are actively engaged in ERCOT (Electric Reliability Council of Texas) stakeholder processes; however, CPS Energy should consider whether there are ways to enhance internal processes to ensure CPS Energy reaps the full potential benefit of this engagement.

Gas operations

- Develop a more formal written winter season management plan, including investments, practices and procedures, and automated reporting to executive management.
- Establish an additional gas operation Tier 1 Metric that tracks industry standard leaks that remain open for repair at year end, with the objective that this will be limited to those identified within the last 45 days.
- Investigate adding to Gas division staff to support new customer interconnection and leak repair efforts.

- Develop and/or partner with workforce organizations to create an in-house training program to attract more junior employees cost-effectively.

Customer engagement

In review of customer engagement at CPS Energy, Daymark analyzed CPS Energy's customer outreach product and services, stakeholder engagement, and use of stakeholder feedback.

The customer organization in several departments function with high energy and passion for helping each customer. CPS Energy has a wide breadth of programs in place that target a broad range of their customer base, including programs for energy efficiency and renewables, demand response programs, financial assistance programs, and outreach initiatives. In general, we observed a CPS Energy team that is highly sensitive in responding to new customer needs presented to them, and they have developed an expansive array of programs that serve many customers. However, CPS Energy's prioritization of customer assistance and outreach programs is very reactive to outside guidance, including guidance from government officials and requests from community leadership. As a result, CPS Energy's efforts can be characterized as reactive, rather than as strategically designed, and informed by in-depth customer analyses, which are necessary to develop programs that are truly customer-driven. Below are the recommendations for CPS Energy's customer engagement. In section VI., Daymark presents additional discussion and recommendations and discusses all observations and recommendations in greater detail.

- Establish a three to five-year plan for customer engagement budget, staffing, and improved data gathering and analytics.
- Commit to Enterprise Resource Planning (ERP) specifications that support the tasks necessary to improve customer data gathering, storage, and analytics.
- Rework customer satisfaction related surveys to make detailed customer segmentation analysis possible.
- Integrate energy efficiency, customer sited renewables, energy burden programs into resource planning processes and rate design to determine right-size funding while assuring energy equity.

The Enterprise Resource Planning transition

CPS Energy is embarking on a major effort to procure and implement new Enterprise Resource Planning (ERP) software to replace end-of-life software the currently supports vital CPS Energy functions, including customer account management, human resources,

and procurement. Based on Daymark's review, we support CPS Energy's transition to a new ERP system and believe that CPS has taken and/or is planning many positive steps to manage risk; however, for this kind of project, risk continues to be a central concern. In section VII., we review some key ERP risks, and the steps CPS Energy is taking to manage them, and make some additional recommendations related to risk management.

- CPS Energy's existing end-of-life software and systems are hindering operational efficiency and make internal controls more difficult to implement and monitor. The Board of Trustees should exercise due diligence in its oversight to help to make the transition successful.

II. INTRODUCTION

A. Methodology

Daymark's independent operational efficiency review of CPS Energy's management and operations relies on analysis of information gathered through interviews and review of documents.

For the purpose of benchmarking CPS Energy's performance against other utilities, Daymark identified three groups of utilities: one limited to Texas public utilities, primarily for use in comparisons that evaluated CPS Energy's cost competitiveness, a second list focused on public utilities from across the country that might be considered CPS Energy's peers in terms of size, and a third list of investor-owned utilities similar in size to CPS Energy.[1] Specifically for the review of CPS Energy's operations, Daymark divided its efforts between electric operations, inclusive of generation and delivery, and gas operations.

Daymark attempted to confirm information presented in interviews by soliciting supporting documentation and/or by reviewing publicly available materials, and whenever possible, we cite that documentation. In some cases, ideas or information presented in interviews are presented directly, generally because they shed light on an insight or recommendation that may not be available in document form.

As discussed at the outset of this work, Daymark did not undertake a review of CPS Energy's compensation structure. It is our understanding that such a review is being completed by another firm.

Daymark identified both areas of strength and opportunity for CPS Energy. Within the areas for opportunity, gaps and their corresponding causes were identified along with recommendations to address these gaps.

Throughout our review, the CPS Energy staff made themselves available for interviews and provided requested documents. We are grateful for their assistance.

[1] Group 1 comparison group: Austin Energy, El Paso Electric, and Lubbock Power & Light. Group 2 comparison group: LADWP, Austin Energy, LIPA, SMUD, Jacksonville Electric Authority (JEA), and Salt River Project. Group 3 comparison group: Dominion Energy South Carolina, Inc., PacifiCorp, Duke Energy Carolinas, LLC., Dayton Power & Light Co. Entergy Arkansas LLC, Atlantic City Electric Co. Central Maine Power Co., AEP Texas Central Company., Pennsylvania Electric Co., Portland General Electric Co., and Potomac Electric Power Co.

B. Report organization

Daymark has structured the remainder of the operational review as follows:

- **Section III – Context:** A review of some important context, including an overview of recent critical events, including COVID-19 and Winter Storm Uri.
- **Section IV – Financial health:** A review of the financial health of CPS Energy. Daymark provides an analysis of CPS Energy's current financial metrics, budget process, rate design, and risk management and auditing functions.
- **Section V – Operational excellence:** A review of the operational functions of CPS Energy. Given that CPS Energy is an electric and gas utility, this section is divided into separate discussions of electric and gas operations.
- **Section VI – Customer engagement:** A review of several aspects of CPS Energy's engagement with its customers, including the problem of energy burden for some customers and the customer programs that help to address this problem, customer service and communications, customer satisfaction, and forums for stakeholder engagement.
- **Section VII – ERP transition:** A discussion of CPS Energy's upcoming transition of ERP systems. We discuss where CPS Energy is at currently in the process of transitioning and identifies potential risks that the utility may face.

III. CONTEXT

The city of San Antonio has approximately 1.6 million residents and is located in Bexar County, which has approximately 2 million residents. The area is experiencing rapid growth, with a cost of living lower than the national average[2] but household incomes that are currently approximately 10% below the national average.[3] Acquired by the City of San Antonio in 1942, CPS Energy is the electric and gas municipal utility for the City.[4] CPS Energy supports the city by contributing up to 14% of its annual gross revenue.[5]

CPS Energy is a vertically integrated utility—it owns and controls generation, transmission, and distribution to provide electric service to its customers. With more than 900,000 electric customers and approaching 400,000 natural gas customers in the San Antonio region, and with annual revenue of almost $3.5 billion in FY2023, CPS Energy is the country's largest municipally owned utility that provides both natural gas and electric service.[6]

A. Critical events: COVID-19 and Winter Storm Uri

CPS Energy has experienced two events in the past three years that have impacted many aspects of the utility's finances, operations, and customer relationships.

First, in 2020, the COVID-19 pandemic began. Like many utilities nationwide, CPS Energy suspended service disconnections for customers and waived late fees, all beginning in March 2020 and ending in September 2021. Throughout 2022, CPS Energy experienced continuing concerns with high levels of past-due receivables.

In 2021, residents throughout Texas were impacted by the extreme weather events of Winter Storm Uri. This storm affected a huge portion of the U.S. mid-section, from the Canadian border to the Gulf of Mexico. Like the rest of Texas, San Antonio experienced

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2 Council for Community and Economic Research, Cost of Living Index data downloaded March 2023. San Antonio's composite cost of living index rating is 92. https://www.coli.org/

3 *Ibid.*

4 https://www.cpsenergy.com/en/about-us/who-we-are.html.

5 Some revenue is excluded from the city payment calculation. See monthly Board meeting materials related to the agenda item, "Approval of Payment to the City of San Antonio," which detail the calculation and exclusions. For example: https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf

6 https://www.cpsenergy.com/en/about-us/who-we-are.html. FY2023 revenue is net of unbilled revenue, as reported in CPS PowerPoint presentation, "FY2023 Year-end Financial Update," February 27, 2023, p. 5, available at: https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf

one of the worst weather-related crises that the community (and Texas generally) has seen. As identified in the City of San Antonio's Community Emergency Preparedness Committee Report on the response to Winter Storm Uri, CPS Energy was challenged with "load-shed orders, equipment failures, and managing rolling outages" to meet the demands of the city.[7] The Winter Storm Uri event led to unprecedented spikes in the cost of natural gas[8] and in wholesale electricity prices. For CPS Energy, these price spikes, combined with increased demand and performance failures at some key plants[9] (similar to many occurring throughout ERCOT at the same time), resulted in an estimated $314 million in purchased power costs and an estimated $528 million in natural gas charges during the period from February 9, 2021, to February 20, 2021. Some of these amounts are disputed by CPS Energy. The final total cost to CPS Energy may be lower, pending resolution of disputed amounts.

B. Fiscal Year 2023

CPS Energy's 2023 fiscal year ran from February 2022 through January 2023. In calendar year 2022, CPS proposed a base rate increase of 3.85%, along with the establishment of a regulatory asset (a financial mechanism that enables CPS Energy to spread the recovery of costs over 25 years) to pass through to customers the fuel costs, electric market purchases, and other costs related to Winter Storm Uri previously mentioned. Prior to this rate request, CPS Energy had not increased their rates since February 1, 2014. The rate increase was approved by CPS Energy's Board of Trustees and the San Antonio City Council. It went into effect on March 1, 2022, with a projected FY 2023 revenue boost of $73 million. CPS Energy also obtained approval from the City Council for a regulatory asset of up to approximately $1 billion to be recovered over 25 years, with an initial use of the asset to collect $418 million in undisputed costs that began in March 2022. The regulatory asset cost is passed through to customers via an addition to CPS Energy's fuel cost factor.[10] The approved $1 billion amount is believed to be adequate to cover the CPS Energy's full potential liabilities and litigation costs.[11] Despite

7 City of San Antonio, Community Emergency Preparedness Committee: A response to the February 2021 Winter Storm.pdf, June 24, 2021, pg. 4. Available online at: https://www.sanantonio.gov/Portals/5/files/CEP%20Report%20Final.pdf.

8 *Ibid.*, pg. 8.

9 See the discussion of performance issues at Spruce 1 and the South Texas Nuclear Project, *Ibid.,* pp. 13-14.

10 https://www.cpsenergy.com/en/about-us/rate-increase.html.

11 "Monthly Financial Update FY 2023 Budget" presentation to Board, January 31, 2022, p. 7. Available online at: https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/January%2031%202022%20Board%20Meeting%20for%20Posting.pdf.

these efforts to financially stabilize CPS, Fitch and S&P gave CPS a negative outlook in their 2022 credit ratings report. S&P and Fitch cited as reasons for the negative outlook price volatility and the limited grid interconnectivity of the ERCOT market, as well as CPS Energy's large number of delinquent receivables.

At the time of the 2022 (Fiscal Year 2023) rate increase, CPS Energy identified the need for future rate increases to meet the growing needs of the community and stated that it would return to request additional rate increases every two years, with a potential increase in 2025 and again in 2027.

During FY 2023, the revenue boost resulting from the rate increase was offset by growth in CPS Energy's delinquent receivables, which rose to over $200 million in the course of the year, with a corresponding rise in CPS Energy's bad debt expense to over $86 million (compared to an original budget of $9.4 million).[12] CPS Energy management and the Board are aware that the current level of past-due receivables is unsustainable and are focused on reducing the number of delinquent accounts. CPS Energy is currently predicting additional bad debt of $30 million in FY 2024 and $23.8 million in FY 2025, before returning to more normal bad debt amounts in subsequent years.[13]

C. Customer growth

A final key element in understanding CPS Energy's current outlook is customer growth. As the City of San Antonio has grown and continues to grow. 2022 Census numbers identify San Antonio as the fastest-growing city in the country, in terms of total numeric (as opposed to percent) population growth.[14] CPS Energy has experienced steady customer growth and projects continued customer growth at least through 2027, as shown in Figure 1, below. For CPS Energy, in the near term, this growth can present financial challenges, because money must be spent to connect new customers—approximately one third of CPS Energy's planned FY 2024 capital expense budget is

[12] February 27, 2023 Presentation to the Board.pdf. Available online at: https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf

[13] FY 2024 Budget Discussion, January 30, 2023: Appendix, Slide 18. Available online at: https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/JANUARY%2030,%2023%20BOARD%20MEETING%20v2%20(FOR%20POSTING%20WITH%20CITY%20TIMESTAMP).pdf

[14] "Fastest-Growing Cities are Still in the West and South." Press Release Number CB22-90. US Census Bureau. May 26, 2022. Available online at: https://www.census.gov/newsroom/press-releases/2022/fastest-growing-cities-population-estimates.html#:~:text=Six%20cities%20crossed%20the%20100%2C000,Tuscaloosa%2C%20Alabama%20(100%2C618).

targeted at "upgrading and extending new service to customers."[15] Some of this is offset by new customer contributions in aid of construction. However, over time, continued customer growth will help to support a strong financial picture for CPS Energy.

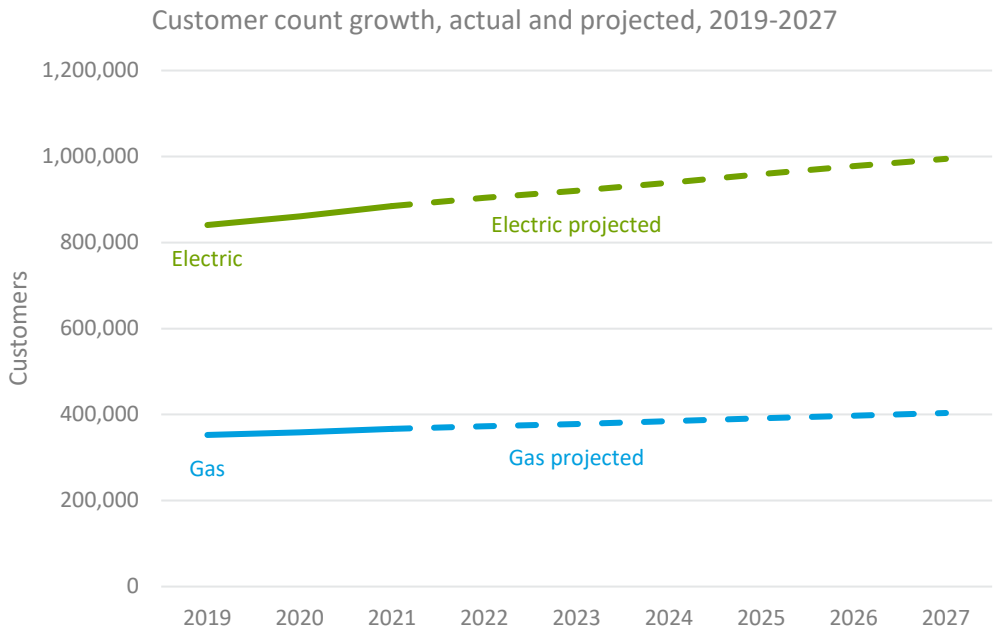

Figure 1. Actual and projected customer growth, 2019-2027

D. Vision 2027

CPS Energy has recently shared with the community their strategic goals for the next 5 years in their latest strategic plan, *Vision 2027*. That plan articulates five strategic areas of focus: (1) operational evolution, (2) financial stability, (3) customer experience, (4) team culture, and (5) community partnership and growth. Vision 2027 identifies key transformations CPS Energy plans to and has already started to implement.[16] Of particular significance are the transitions away from their current software systems to a new Digital Enterprise Resource Planning (ERP) system (the "ERP transformation") and their transition to a new generation supply portfolio. On January 23, 2023, CPS Energy's

[15] "FY2024 Budget Discussion," Board Presentation. January 30, 2023, Slide 8. Available online at: https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/JANUARY%2030,%2023%20BOARD%20MEETING%20v2%20(FOR%20POSTING%20WITH%20CITY%20TIMESTAMP).pdf

[16] https://www.cpsenergy.com/en/about-us/vision-2027.html.

Board approved the "Blended Portfolio (P2) generation improvements to support planned unit conversions and retirements."[17]

[17] https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/Resolution-Approving-Generation-Planning-Portfolio.pdf

IV. FINANCIAL HEALTH

A. Introduction

Despite forgoing base rate increases for eight years, CPS Energy has been successful in managing its financial health and maintaining acceptable financial metrics. However, the resulting lean organization and deferment of key initiatives such as replacement of its IT systems, coupled with disruptions relating to Winter Storm Uri and the pandemic, have created mounting cost pressures that require a transition to a cycle of more frequent base rate increases. Indeed, in gaining approval for a 3.85% rate increase that took effect in March 2022, CPS Energy has communicated its plans to request regular rate increases approximately every two years at least through 2027.

The remainder of this section provides our observations and recommendations with respect to the financial health perspective of this operational efficiency review. Key topics discussed here, as noted in Figure 2, include CPS Energy's changing financial situation and approach, its annual budgeting process, rate request planning process, strategic planning, rate design, and internal risk management. Subsequent sections further detail our review from the perspective of operational excellence, and customer engagement.

Figure 2. Financial health perspective of this review

The discussion in this section is organized as follows:

- **Overview.** The subsection, "Overview of CPS Energy's changing financial situation and approach," examines CPS Energy's transition from a long period of no base rate increases to its current, more proactive, strategy of pursuing regular base rate increases, and notes a few other factors that may also impact customer bills—setting up preservation of affordability and cost competitiveness as a key challenge for CPS Energy going forward.
- **Financial performance indicators.** This section presents a comparative examination of CPS Energy's performance on its Key Financial Metrics and on three other comparative financial measures.
- **Annual budget process.** This section examines and makes recommendations relative to setting priorities and information presentation in CPS Energy's budgeting process.
- **The rate request planning process.** We discuss CPS Energy's rate request process, which is in line with industry practice. We observe that, due to the nature of the rate planning process, projections of future rate increases may tend to be lower than final needs. We do not make any recommendations in this area.
- **Strategic financial planning.** Our most significant observation related to financial planning is that the financial constraints of the annual budgeting process and the policy constraints of the rate request process suggest that they are not particularly good forums for strategic planning around big-picture strategic risks, and, in particular, the risks associated with the attempt to maintain affordability while at the same time implementing a transformative vision for the organization.
- **Rate design.** In this section, we review CPS Energy's current rates and its plans for a rate re-design. We agree that there is significant potential to revise and modernize CPS Energy's rates. However, consideration must be given in the near term to the constraints of the current billing system and to the importance of not creating obstacles to the successful implementation of a new billing system.
- **Internal risk management: Enterprise risk management & development and internal auditing.** Finally, we review and make recommendations relative to two functions, Enterprise Risk Management, and the Internal Audit function, which play important roles in managing risk for CPS Energy.

B. Overview of CPS Energy's changing financial situation and approach

Discussion

History of aggressive cost management

Between its 4.25% base rate increase in 2014 and its 3.85% increase in March 2022, eight years passed in which CPS Energy avoided asking for a rate increase. Aggressive cost management was one tool that allowed CPS Energy to avoid requesting a rate increase for this number of years.

Although cost management likely had an impact on many aspects of CPS Energy's operations, the area in which this impact is most readily visible is staffing. From 2007 through 2021, CPS Energy's employee count decreased, dropping from about 3,800 in 2007 to below 3,000 in 2021.[18]

The multi-year trend of decreases in staffing reflects, in part, efforts to avoid rate increases by managing costs internally through headcounts. For example, in 2015, CPS offered a voluntary retirement incentive program; 300 employees left as a result. The decline in staffing resources has continued since, spurred in part by the nationwide impacts of COVID-19, and reaching a point at which CPS Energy management identified staffing shortages as a major challenge.

Recent change in approach to the rate planning strategy

Beginning in 2021, CPS Energy changed its pattern of managing costs without requesting a rate increase, citing the need to act after Winter Storm Uri to support infrastructure resiliency, plans to invest in new technology, the need for funding to keep up with customer growth, and the need to stabilize staffing levels.[19]

This decision to request a rate increase transitioned CPS Energy into what management intends to be a shortened, more regular, cycle between base rate increases. Based on the 5-year projection prepared in 2021 to support the most recent base rate increase,

[18] CPS Energy PowerPoint presentation, "*Supplemental Financial Detail for Rate Request Discussion*," December 1, 2021: p. 10. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Dec%201%202021%20Supplemental%20Financial%20Detail%20for%20Rate%20Request%20Discussion.pdf

[19] CPS Energy PowerPoint presentation, "*Rate Proposal Overview & Engagement Process Updates*," December 13, 2021. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/December%20Public%20Input%20Rate%20Presentation%20V5.pdf

CPS Energy has forecast that it will require additional 5.5 percent rate increases in fiscal years 2025 and 2027, and our interviews with the financial team suggest that, going forward, they intend to adjust rates on a more regular basis over the long term.

Other factors that could increase future CPS Energy customer bills

As discussed above, as part of the discussion around the 2022 base rate increase, CPS Energy management communicated their expectation around additional base rate increases of 5.5 percent in 2025 and 2027. Our understanding from CPS Energy staff is that this signals a change in approach to more regular rate increases, even after 2027.

In addition to these projected increases, there are several other factors that will or could impact customer bills in upcoming years:

- **CPS Energy's new supply portfolio plan.** The Board acted to approve CPS Energy's new supply portfolio plan on January 23, 2023. Costs for the approved transition are currently being incorporated in CPS Energy planning. CPS Energy consultants calculated potential bill impacts of the proposed portfolios under different future scenarios. These costs are not expected to have a significant impact on customer bills until 2026; however, by 2030, for the selected portfolio, potential monthly average residential bill impacts were projected in the reference scenario to reach $3.68 per month, and projections in different scenarios ranged from a possible average savings of $1.71 per month in the "Carbon Based Economy Scenario" to a possible additional cost of $8.77 per month in the "Net Zero Economy" scenario. Costs in the later years increased significantly, reaching approximately $20 per month in 2047 in the reference scenario.[20]
- **Disputed costs from Winter Storm Uri.** The full amount of Winter Storm Uri costs that will be passed on to CPS Energy customers is still uncertain; however, authority has already been granted by the City Council to recover these costs, if necessary, through a 25-year regulatory asset of up to a value of approximately $1 billion, with an initial use to collect $418 million in undisputed costs. The cost of the regulatory asset is passed through to customers as an addition to the fuel cost factor and has been estimated to add $1.26 to the cost of the average residential customer's monthly bill.[21] Should CPS Energy's current litigation

[20] *Generation Planning Results: Supplemental Financial Data*, 11/10/2022*:* pp. 55-59. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/RAC/20221115%20Data%20Packet%20V9.pdf

[21] https://www.cpsenergy.com/en/about-us/rate-increase.html.

relative to the remaining Winter Storm Uri costs not succeed, customers could see that amount more than double.[22]

- **Funding for CPS Energy's technology transition.** CPS Energy's plan is to request funding for its ERP project two years at a time, as funding needs become better defined. CPS Energy has prepared an initial estimate of additional total ERP project costs (not including the $48 million allocated to date), which they expect to fall in a range from approximately $178 million to $249 million (based on an analysis by PricewaterhouseCoopers), and which includes costs associated with additional CPS Energy labor costs to support the project. Daymark's conservative (rough) estimate of potential additional costs on customer bills is, at a minimum, roughly $3 per month over four years.[23]

The outlook for other customer bill elements is uncertain, but variability is likely. Fuel costs (and other energy costs such as power purchase agreement spending), which are passed through to customers, can be subject to significant variation—in the past year, customers have been experiencing the effects of significant fuel price increases, which may have contributed to the increase in delinquent customer payments.

CPS Energy's stakeholders, including Board members and Council members, have expressed concerns about the rising energy burden on lower income customers. With further cost increases likely as soon as fiscal year 2025, it will be an increasing challenge to address these concerns. While during the last rate case, the affordability discount program was expanded to increase the discount offered to lower income customers to fully offset the 3.85 percent base rate increase experienced by those customers, this may not be possible for future base rate increases or other factors, such as changes to charges passed on through the fuel cost factor.

Observations – Overview of CPS Energy's changing financial situation and approach

Observation IV-1. CPS Energy's more proactive approach to financial planning, including plans to request regular rate increases, is a positive change and is needed to support CPS Energy's lean operations.

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22 Daymark extrapolation, since the amount passed on to date is less than half of the total authorized figure of approximately $1 billion.

23 If costs come in at the higher end of CPS Energy's estimates at about $240 million and the remaining project time is four years, this would equate to additional expenditure of approximately $60 million per year. This $60 million annual expenditure is not reflected in CPS Energy's previous 5.5% rate increase estimates. A rough estimate extrapolating from the expectation that the last rate increase of 3.85% would bring in an additional $77 million over eleven months and increase the average monthly customer bill by $3.84 per month suggests that additional customer monthly costs to support the ERP transformation could be, at a minimum, roughly $3 per month over four years.

Observation IV-2. **Over the next decade, in addition to the rate increases identified, several other factors could impact customer bills, including ERP transition costs, costs associated with the power supply transition, and possible additional costs associated with Winter Storm Uri.**

Recommendations– Overview of CPS Energy's changing financial situation and approach

Recommendation IV-1. While continuing to manage for affordability and price competitiveness, CPS Energy should execute its plans to maintain its financial position and meet increasing customer needs by requesting rate increases as needed to support expanded staffing levels and needed investment.

C. Financial performance indicators

Discussion

Tier 1 financial metrics

CPS Energy has three tiers of metrics. Tier 1 metrics are reported monthly to the Board of Trustees and measure results relative to the overall performance goals of the utility. Tier 2 metrics are reported monthly to executive leadership and measure results that are "critical to the performance of each business unit, department, functional area or priority." Tier 3 metrics are reported quarterly to business areas and measure results "at the department, function, or priority level".

Within the Tier 1 metrics, three metrics are identified as Key Financial Metrics, which are considered particularly important to maintaining CPS Energy's credit ratings. For each, CPS Energy has identified both a "threshold" that is a target they have been encouraged by credit agencies to meet and for each year, a planned performance level. These Key Financial Metrics are shown in Table 1, below.

Table 1. CPS Energy Key Financial Metrics as of Dec. 31, 2022[24]

METRIC	YEAR-END RESULTS	THRESHOLD	FY2023 BUDGET	FY 2024 PLAN
Adjusted Debt Service Coverage Ratio	1.89	1.5 or higher	1.79	1.62

[24] FY 2023 figures are from the Monthly Financial Update to the Board, dated February 27, 2023, and available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf. FY 2024 Plan figures are from the FY2024 Budget Discussion presentation to the Board dated January 30, 2023 and available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/JANUARY%2030,%2023%20BOARD%20MEETING%20v2%20(FOR%20POSTING%20WITH%20CITY%20TIMESTAMP).pdf.

METRIC	YEAR-END RESULTS	THRESHOLD	FY2023 BUDGET	FY 2024 PLAN
Debt Capitalization Ratio	61.8%	60% or lower	61.7%	62.6%
Days Cash on Hand	166	150 or higher	170	170

As shown in Table 1, for one metric, the Debt Capitalization Ratio (the ratio of total CPS Energy debt to total capital), for FY2023, CPS Energy fell short of the threshold number it identified and considers to be of significance to ratings agencies. CPS Energy projects not meeting the 60% threshold either in FY 2023 or FY 2024.

With respect to the debt capitalization ratio, CPS management verbally noted in the January 30, 2023, Board meeting that this is consistent with expectations leading into the next rate increase, and that this issue has been discussed with the ratings agencies. So far, the only ratings agency that has revisited its rating since this discussion, Fitch, has maintained its previous rating. Management traces the challenge of meeting this metric to rapid customer growth, which requires significant capital investment.

Comparative key financial metrics

To provide additional context for CPS Energy's Key Financial Metrics, Daymark collected the same metrics from six comparison utilities, relying on public information from 2020-2021.

We compared the actual performance of these six utilities to CPS Energy's threshold levels to get a sense of how other utilities performed against these targets. As can be seen in the following exhibits, performance varies around the thresholds. We compared CPS Energy's performance to six other public power utilities that ranked in the top eight largest public power utilities by customers served in the United States as of 2018 (CPS Energy ranked #5 on that list), all of which have recent credit ratings equivalent to AA- or above.[25] Our comparison should be treated with caution. It is not a direct comparison of

[25] Largest Public Power Utilities by Electric Customers Served, 2018, Identified in *2020 Public Power Statistical Report:* https://www.publicpower.org/system/files/documents/100-largest-public-power-utilities-customers-served-2018.pdf. We excluded Puerto Rico Electric Power Authority (the largest utility in the top eight) from our comparison of the top 8 public utilities, because we believe its major storm restoration needs likely mean that its finances are not a good comparison with the other utilities. Credit ratings were taking from the most recent available public sources, as follows: **CPS Energy** 2023 AA- Fitch; **Austin Energy** 2022 AA- Fitch; **Los Angeles Department of Water and Power (LADWP)** 2022 AA- Fitch; **Long Island Power Authority (LIPA)** 2022 A+ Fitch; **Sacramento Municipal Utility District (SMUD)** (2021 F1 Fitch); **Jacksonville Electric Authority (JEA)** 2021 AA Fitch; **Salt River Project (SRP)** 2020 AA+ S&P.

all the utilities at the same point in time (data is from 2020-2023—we used the most recent publicly-available data), but it shows that utilities fall on both sides of CPS Energy threshold targets on all three Key Financial Metrics.[26]

[26] Data shown is most recent publicly-available data, as follows. SRP is not included in Days Cash on Hand, because we could not find publicly-available data on Days Cash on Hand for that utility. Days cash on hand utility, data year, and source: **CPS**, 2023, https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf, **Austin**, 2022, https://services.austintexas.gov/edims/document.cfm?id=396876; **LADWP**, 2021, https://www.fitchratings.com/research/us-public-finance/fitch-rates-los-angeles-department-of-water-power-ca-power-rev-bonds-aa-outlook-stable-14-10-2022; **LIPA,** 2021, https://www.lipower.org/wp-content/uploads/2022/02/2.-Overview-of-Financial-Results.pdf; **SMUD**, 2021, https://www.smud.org/-/media/Documents/Corporate/About-Us/Company-Information/Reports-and-Documents/2014-2021/2021/2021-Series-I.ashx; **JEA,** 2020, https://www.fitchratings.com/research/us-public-finance/fitch-assigns-aa-ratings-on-jea-fl-electric-system-rev-bonds-outlook-stable-28-06-2021.

Debt Capitalization Ratio utility, data year, and source: Same as above, except: **SMUD,** 2022, https://www.smud.org/-/media/Documents/Corporate/About-Us/Board-Meetings-and-Agendas/2022/Nov/SMUD-2023-Proposed-Budget-Book.ashx; **SRP**, 2022, https://www.srpnet.com/assets/srpnet/pdf/about/2022-combined-financial-report.pdf; **JEA**, 2022 Audited Financial Statement.

Adjusted Debt Service Coverage Ratio utility, data year, and source: Same as Days Cash on Hand, except: **SRP,** 2022, https://www.srpnet.com/assets/srpnet/pdf/about/2022-combined-financial-report.pdf; **JEA**, 2021, https://www.jea.com/annual-report/.

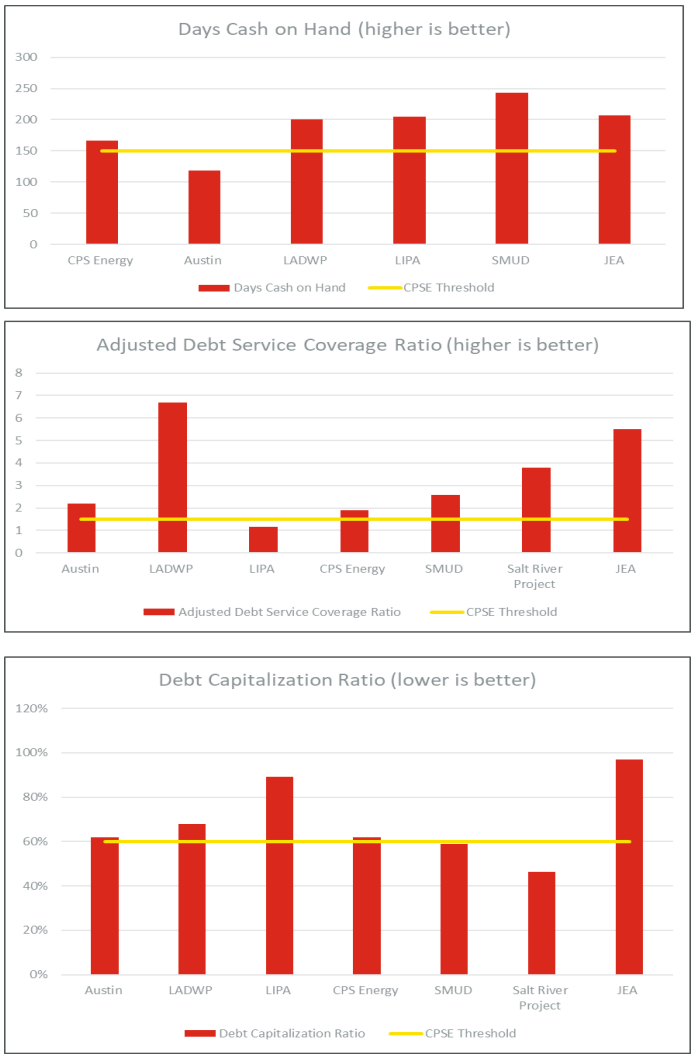

Figure 3. Comparative Key Financial Metrics

In addition to looking at comparative Key Financial Metrics, Daymark also reviewed recent ratings agency reports to assess how significant CPS Energy's maintenance of a 60% debt capitalization ratio is to the rating agencies. We found the following:

- Fitch does not directly reference the "debt-to-capitalization ratio;" however, it references "CPS Energy's debt/equity goal of less than 65%," which suggests that for Fitch, a ratio over 60% may not be an immediate threat to CPS Energy's credit rating.[27]
- Moody's indicates that an "adjusted … debt ratio projected to remain at or below 70%" could be a contributing factor in a ratings upgrade.[28]
- S&P's latest report (which gave CPS Energy an AA- rating) predicts that CPS Energy's debt-to-capitalization ratio is likely to move to "roughly 64% over the next two years."

Given these comments, we believe that CPS Energy, if otherwise able to maintain strong financial metrics, may not need to achieve a 60% debt/capitalization ratio in the near- to mid-term, particularly if it can show that it is pursuing a financial strategy that in the longer term will allow it to reduce this ratio back down towards the 60% threshold.

While Daymark does not believe that CPS Energy's thresholds are inappropriate or unimportant, they are just one measure of financial health, and we agree with the assessment of CPS Energy's management that the temporary failure to meet the debt capitalization ratio threshold, while concerning, needs to be considered in the overall context of CPS Energy's financial performance.

Competitive electric rates

CPS Energy regularly compares its residential bills to other Texas cities and finds that CPS Energy bills (considering both gas bills and electric bills) are among the lowest in the state.[29] Daymark conducted two additional comparisons of CPS Energy's electricity

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27 https://www.fitchratings.com/research/us-public-finance/fitch-affirms-san-antonio-tx-electric-gas-rev-bonds-at-aa-maintains-negative-outlook-20-01-2023.

28 Moody's Investors Service Rating Action. 17 March 2022. Available online at https://www.moodys.com/research/Moodys-assigns-Aa2-to-San-Antonio-City-of-TX-Combined--PR_907612479?cy=emea&lang=en (user registration required).

29 See, for example, CPSE PowerPoint presentation, "FY2023 Year-end Financial Update," February 27, 2023, slide 16, which compares residential combined gas and electric bills for Austin, San Antonio, El Paso, Corpus Christi, Houston, and Dallas, and finds CPSE bills the second-lowest after Austin. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf.

pricing and bills that confirmed that CPS Energy's electric bills (both residential and commercial) are competitive even after the most recent rate increase.

For a comparison of electricity prices and bills before the most recent rate increase (and prior to the recent spike in natural gas prices), we used 2021 EIA rate and utility information, in 2021, CPS had an average commercial retail price of 9.5 cents/kWh and an average residential retail price of 11.0 cents/kWh.[30] When compared to nearby public utilities El Paso Electric Company, Austin Energy, and Lubbock Power & Light, CPS Energy ranked third in commercial and second in residential retail prices (Figure 4).

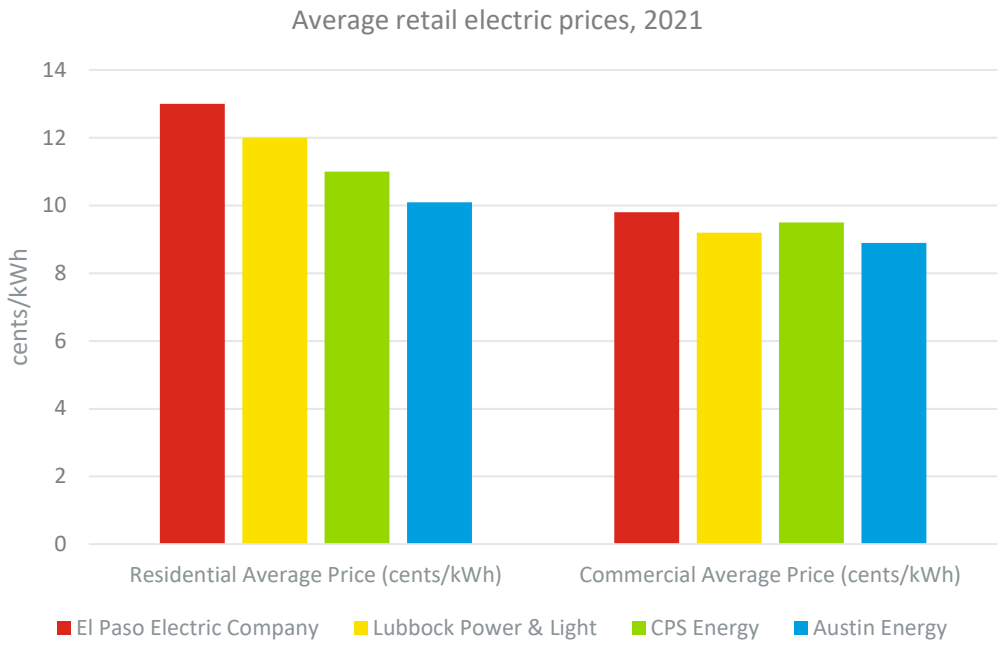

Figure 4. 2021 Residential and commercial per kWh retail electric prices[31]

Daymark performed an analysis to further confirm that CPS Energy's customer electric bills remain competitive with other Texas public utilities even after the most recent rate increase. When assuming 1000 kWh usage, residential bills were estimated to be

30 Residential and commercial information was sourced from EIA electricity data – *Electric Sales, Revenue, and Price by state and utility*. The data is taken from forms EIA-861 – schedules 4A & 4D and EIA-861S. Data can be accessed at https://www.eia.gov/electricity/sales_revenue_price/

31 Residential and commercial information sourced from EIA electricity data – *Electric Sales, Revenue, and Price by state and utility.* The data is contained in forms EIA-861 – schedules 4A & 4D and EIA-861S. Data can be accessed at https://www.eia.gov/electricity/sales_revenue_price/

$120.67 for the summer months (typically, the months with the highest bills) of 2022. (Figure 5). In fact, despite the CPS Energy rate increase, this analysis shows CPS Energy bills as more competitive with Austin Energy than in the 2021 comparison above. The analysis performed aligns with CPS Energy's recent bill comparison, which compares the trailing twelve months ending in November 2022, where combined gas and electric equate to a monthly bill of $181.66.[32]

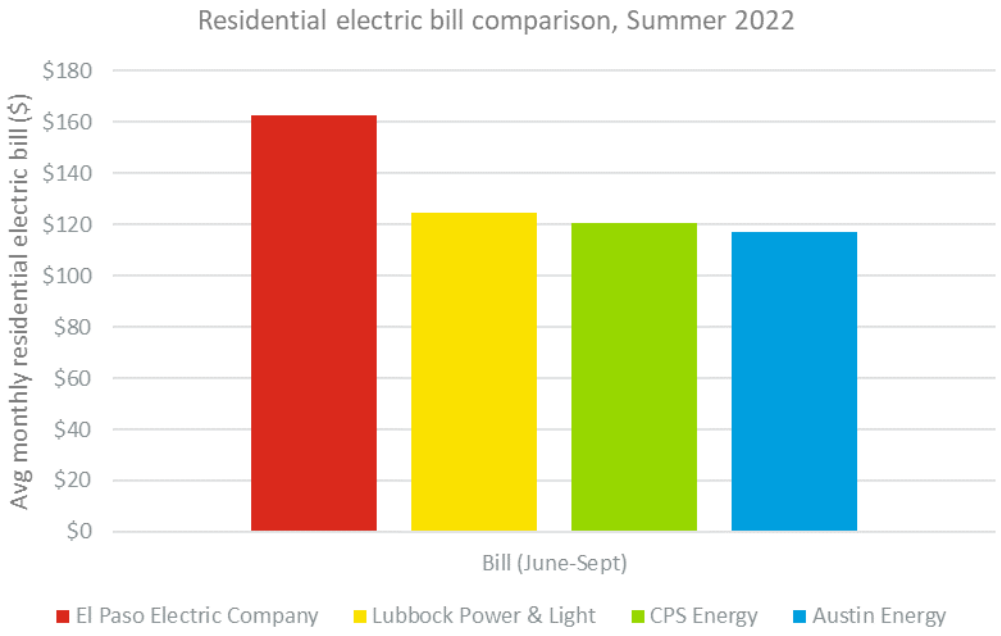

Figure 5. Average monthly residential electric bill comparison, 1,000 kWh user, Summer 2022[33]

Credit ratings

In 2022, CPS received AA- long term rating from S&P Global, with a negative outlook. This rating reflected the S&P's perspective that CPS has "historically sufficient liquidity and reserves relative to weather variability and operational needs," and a "revenue stream that has demonstrated resilience" despite the below-average income of their growing residential customer base. The negative outlook reflected concerns about the

[32] FY 2023 Monthly Performance, pg. 35. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/FY2023%20Monthly%20Performance%20Update%20as%20of%20November%2030,%202022.pdf

[33] Projected monthly bill for 1000 kWh residential customer, developed by Daymark using published rate information.

price volatility and limited grid interconnectivity of the ERCOT market, as well as the large number of delinquent receivables coupled with the recent rate increase.

Credit rating agencies S&P, Moody's, and Fitch recently visited and toured CPS Energy's facilities. After this visit, Fitch reaffirmed CPS Energy's recent credit rating of AA-. When compared to their municipal counterparts, such as the Los Angeles Department of Water and Power (LADWP) and Austin Energy, CPS Energy's credit rating is competitive, as both LADWP and Austin Energy report an AA- from S&P.[34]

Past-due receivables

For CPS Energy, the most concerning current financial indicator is the value of past-due receivables, which peaked at over $200 million in the fall of 2022. As discussed in the Context section of this report, the rise in past-due receivables caused an increase in bad debt expense (that is, past-due receivables that are written off as uncollectible, and are recorded as an expense) which, for Fiscal Year 2023, essentially matched the increase in expected revenues for FY 2023 provided by the 3.85% rate increase granted beginning March, 2022, even when an offset of $20 million in federal assistance provided through the American Rescue Plan Act (ARPA) is taken into account, as shown in Figure 6.

[34] https://ladwp.com/ladwp/faces/ladwp/aboutus/a-financesandreports/au-f-invrel/au-finrep-bondratings;jsessionid=G11yjWQTcWtd3ngcQJTtLwhY6fTqdTC5vKLfQybLbYmTxPJpSYhf!-1459574366?_adf.ctrl-state=2tbrjig99_4&_)&_afrLoop=595275847024087&_afrWindowMode=0&_afrWindowId=null#%40%3F_afrWindowId%3Dnull%26_afrLoop%3D595275847024087%26_%2529%3D%26_afrWindowMode%3D0%26_adf.ctrl-state%3D1a0yknouhi_4; https://www.fitchratings.com/research/us-public-finance/fitch-downgrades-austin-tx-electric-utility-system-rev-bonds-to-aa-outlook-stable-28-06-2022.

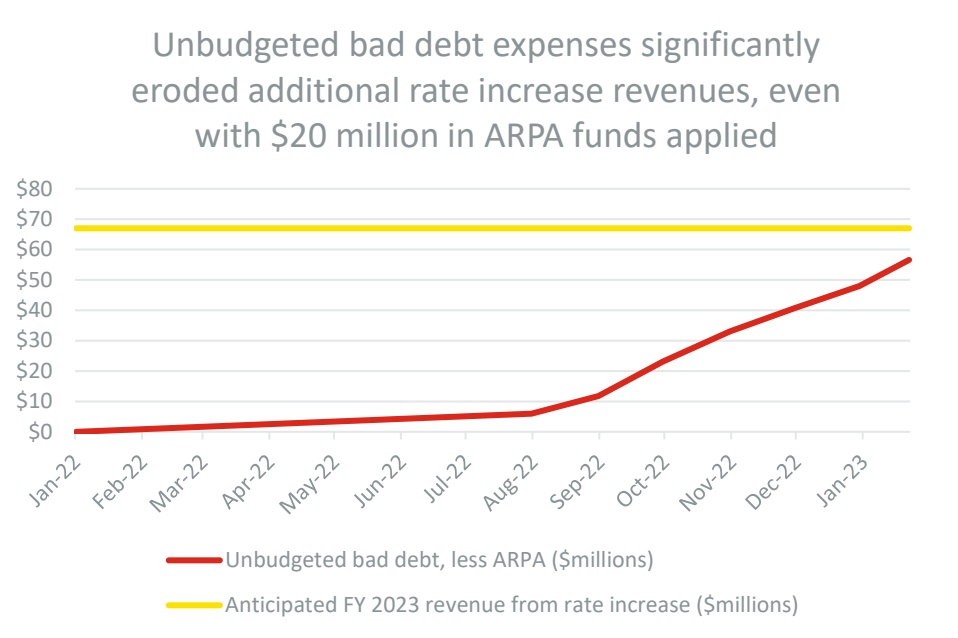

Figure 6. Unbudgeted bad debt expense vs. anticipated rate increase revenue, FY 2023[35]

CPS Energy management and the Board are aware that the current level of past-due receivables owed by delinquent customer accounts is unsustainable and are focused on increased customer outreach, assistance, and, as necessary, disconnections as means to enroll customers with outstanding balances in payment plans and reduce the number of delinquent accounts.

Observations – Financial performance indicators

Observation IV-3. CPS Energy is in a stable financial position, with a debt capitalization ratio comparable to other large public utilities.

Observation IV-4. CPS Energy's electric rates and residential bills are competitive with those of other Texas utilities.

[35] CPS Energy estimated that the FY2023 rate increase, which took effect in March 2022, would result in a revenue increase of approximately $67 million for FY2023. (CPS Energy presentation, *Base Rate Increase & Regulatory Asset Recommendation* January 10, 2022, Slide 3, available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/JANUARY%202022%20SPECIAL%20BOARD%20MEETING%20FOR%20POSTING%20V3. pdf); bad debt figures are taken from monthly reports to the Board (available online at https://www.cpsenergy.com/en/about-us/who-we-are/board-meetings.html), and reflect subtraction of $9.4 million in budgeted bad debt and $20 million dollars in ARPA assistance funds applied to delinquent accounts.

Observation IV-5. **CPS Energy's past-due receivables rose to above $200 million in FY 2023, causing an increase in bad debt expense that would be financially unsustainable for CPS without rate increases if it persisted.**

Observation IV-6. **CPS Energy management and the CPS Board are closely focused on the problem of past-due receivables and undertaking significant efforts to get customers on payment plans and reduce the total value past-due receivables.**

Recommendations – Financial performance indicators

Recommendation IV-2. Daymark recommends that the value of past-due receivables be included among CPS Energy's Tier 1 financial metrics.

Recommendation IV-3. CPS Energy and its Trustees should continue their efforts to reduce past-due receivables. If necessary, growth in past-due receivables and resulting bad debt expenses should be considered in future rate increases.

D. Annual budget process

Discussion

To ensure its final annual budget allows it to meet financial metric targets, CPS Energy conducts a bottoms-up, enterprise-wide exercise. First, departmental budget requests are collected. Then, each budget's consistency with CPS Energy's priorities is assessed. Lastly, their collective feasibility within overall budget constraints is analyzed using an Excel-based cash flow model to evaluate the impacts of proposed budgets on key financial metrics. To the extent that the budget pushes key financial metrics outside acceptable levels, CPS Energy management works with departments to reduce overall spending. Management indicates the process entails substantial communication with all impacted functions during the compilation process. Budgets are adjusted, working within a framework of corporate operational objectives and priorities, to confirm that the utility can reasonably expect to achieve acceptable performance on key financial metrics.

In its most recent published Budget Plan (FY2023), CPS Energy presented its prioritization classifications for making decisions about spending. The following chart adapts CPS Energy's illustration of the "buckets" it uses to guide prioritization:

Table 2. CPS Energy budgetary priorities[36]

BUCKET 1: REQUIRED	BUCKET 2: SIGNIFICANT IMPACT TO	BUCKET 3: ALIGNMENT TO
Board/public commitments	Employee or public safety	Strategic innovation
Regulatory requirements	Tier 1 or Tier 2 metrics	Customer enhancements
Contractual obligations	Financials	Operational efficiencies
	Customer experience	Employee engagement
	Assets, hardware or systems	

Daymark notes that due to CPS Energy's resource-constrained environment, sufficient funding may never be achieved for some or all Bucket 3 activities. In any single year, Daymark agrees that Bucket 3 activities may be lower priority than the other buckets—but if the prioritization system results in these items not just being delayed, but never being addressed, they could begin to have significant impact on CPS Energy's core functions. In addition, the absolute position of Board/public commitments in Bucket 1 should be examined. To take the first elements in Bucket 1 and Bucket 2 as examples, if CPS Energy were to be faced with a trade-off between a Board commitment and a potential significant impact to public safety, we would expect CPS Energy to engage the Board by seeking mutual agreement to modify the commitment to accommodate the safety need.

The real but limited flexibility of the budget process in action can be seen in the recently approved high-level FY 2024 budget. Demonstration of the existence of some flexibility can be found in the budget presentation notes,[37] which explain that a "high investment period" has driven a 4% increase in the overall Capital Plan, even though CPS Energy also revised its revenue estimate for FY 2024 downwards. However, the scope of flexibility is limited. Daymark's assessment of the current overall budget exercise is that this process likely pushed CPS Energy's finances to the bounds of financial comfort—it includes an expectation of negative net income for FY 2024 and a worsening of the debt

[36] CPS Energy, FY2023 Budget Plan Final.pdf, pg. 27. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Finance/FY2023BudgetPlan-Final.pdf

[37] *FY2024 Budget Discussion.* Presentation to the Board. January 30, 2023 (available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/JANUARY%2030,%2023%20BOARD%20MEETING%20v2%20(FOR%20POSTING%20WITH%20CITY%20TIMESTAMP).pdf

where the budget presentation notes indicate a "high investment period" has driven a 4% increase in the overall Capital Plan, despite the fact that CPS Energy also revised its revenue estimate for FY 2024 downwards.

capitalization ratio metric to 62.6% (as compared to CPS Energy's FY 2023 level of 61.7% and the utility's 60% threshold level). The apparent trade-off made to manage the budget to within overall constraints was to significantly reduce spending on transmission as compared to earlier projections a potential operational concern.

The Board must approve CPS Energy's budget at a high level--specifically, CPS Energy's proposed overall capital and non-fuel O&M budget numbers. Daymark reviewed the recent budget presentation by CPS Energy requesting approval from the Board and observes that the information presented publicly to the Board for approval is quite limited. However, we note that CPS Energy management does meet individually with Board members prior to the Board vote to discuss the budget and answer questions.

Following Board approval of the non-fuel O&M and capital budget numbers, CPS Energy develops, in consultation with the Board, a full set of the performance metrics it aims to meet within the available budget. There were sixteen such metrics in FY 2023.

In FY 2023, CPS Energy began providing Monthly Enterprise Performance Update reports to the Board on all Tier 1 metrics, including financial metrics. Financial performance is summarized in memo form and presented in slide format with the latest actual month and year-to-date detail. Any revisions to the annual budget plan are presented in the form of year-to-date actuals combined with the remaining forecast for the fiscal year. This information keeps the Board well informed of CPS Energy's financial status as the year progresses.

Observations – Annual budget process

Observation IV-7. **CPS Energy's prioritization buckets may not adequately capture the complexity of potential trade-offs between buckets and risks that may be associated with extended neglect of items in the lowest-priority bucket.**

Observation IV-8. **On an annual budgeting basis, CPS Energy management has limited flexibility to respond to new budget needs.**

Observation IV-9. **Information included in the Board presentation asking for high-level budget approval only includes information on how the budget will impact Key Financial Metrics, not performance in relation to any other metrics.**

Observation IV-10. **Monthly Enterprise Performance updates presented to the Board are rich sources of financial information that keep the Board well informed of CPS Energy's financial status throughout the year.**

Recommendations – Annual budget process

Recommendation IV-4. CPS Energy should review its framework for prioritizing expenses. Specifically, it should review the prioritization buckets presented in its Budget Plan document and consider: (1) providing clarification around what kinds of Board/public commitments should receive non-negotiable priority, and (2) whether the prioritization process is in danger of resulting in persistent neglect of Bucket 3 items, which could have cumulative significant negative impact.

Recommendation IV-5. CPS should include projections of all Tier 1 metrics, not just financial metrics, in the annual budget approval presentation to the Board. While we do not recommend that the Board become overly involved in internal management discussions that occur before the final budget is presented, we suggest that the Board be informed of any critical tradeoffs embedded in the final budget that they are being asked to approve.

E. The rate request planning process

Discussion

CPS Energy's rate request planning process provides an opportunity to increase revenues to meet CPS Energy's changing resource needs (its "revenue requirements").

CPS Energy establishes its forecasted revenue requirements using the same cashflow model used for budgeting. Based on project expenses and capital requirements input directly into the model and the revenue forecast input from the revenue forecast model, the cash flow model solves for the rate increases needed to meet CPS Energy's three key financial metrics, discussed above.

In the rate process, CPS Energy has considerably more planning flexibility than in the annual budget process to, at least initially, input the full financial requirements it may face to meet its performance objectives. However, it is important to understand the public policy constraints on this process and their advantages and disadvantages from a planning standpoint.

In accordance with the practice of most regulated utilities, CPS Energy includes only well-understood, defined costs in its revenue requirements calculation for the purpose of developing rate requests, following a "known and measurable" criterion that is applied almost universally by regulatory authorities, like the Texas PUC, governing rate increases for investor-owned utilities. However, as a result, many likely and/or not well-defined costs are excluded from the CPS Energy budget projections that determine the target numbers for upcoming rate requests.

Although this approach provides strong transparency and oversight, it is important to keep in mind, when considering CPS Energy's rate increase projections, that the forecast of rate increases beyond the immediate request may tend to be low estimates, given the focus on including only well-understood costs. Daymark notes that the cashflow model used as a basis for the March 2022 rate increase and to project expected near-term increases of 5.5% in fiscal years 2025 and 2027 includes only baseline costs that were already well-defined at the time it was developed.[38] Accordingly, we note that the financial impacts of key upcoming initiatives inclusive of the ERP platform replacement and future generation decisions were excluded from the projections. Items identified by CPS Energy as not included, along with a summary of Daymark's understanding of their current status, are shown in in the table below.

We emphasize that projections regarding possible impacts on the next rate request included in Table 3 are based on Daymark's analysis of public documents and do not represent the statements of CPS Energy management or staff.

Table 3. Items not fully included in CPS Energy's earlier rate increase projections[39]

ITEM NOT INCLUDED IN 2021 RATE REQUEST PROJECTION	CURRENT STATUS
Disputed costs from Winter Storm Uri	Still uncertain; however, authority has already been granted by the City Council to recover these costs, if necessary, through a 25-year regulatory asset. Therefore, although there is uncertainty about final customer bill impacts, this uncertainty should not impact CPS Energy's rate increase needs. **Unlikely to impact rate requests but may impact future customer bills.**
Past due balances resulting from pandemic	Significant growth in past due balances occurred during FY 2023, and CPS has increased projected bad debt expenses for FY 2023-FY 2025. These increased costs were not included in CPS Energy's earlier projections of necessary rate increases. In

[38] "Rate Request Discussion," presentation to the City Council, December 1, 2021: Slide 22. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Dec%201%202021%20Council%20Rate%20Request%20Discussion.pdf

[39] "Supplemental Financial Detail for Rate Request Discussion," December 1, 2021, Slide 3. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Dec%201%202021%20Supplemental%20Financial%20Detail%20for%20Rate%20Request%20Discussion.pdf

ITEM NOT INCLUDED IN 2021 RATE REQUEST PROJECTION	CURRENT STATUS
	addition, because it is not yet clear how fast CPS Energy will be able to bring down delinquent payment rates, it is not possible at this point to predict these amounts with certainty. **Could result in an increase to CPS Energy's next rate request.**
Future Generation Decisions	The Board acted to approve CPS Energy's new supply portfolio plan on January 23, 2023. Costs for the approved transition are currently being incorporated in CPS Energy planning. **Not anticipated to have a significant impact on customer bills until 2026.**[40]
Long-term technology needs	Funding for the next phase of the ERP transition is expected to be included in the upcoming CPS Energy rate request, with the intention of procuring funding for the project two years at a time; however, the amount of funding that will be needed for the next two years of the project is not yet definitely known. **May result in an increase in CPS Energy's next rate request**

Observations – The rate request planning process

Observation IV-11. CPS Energy's initial forecasts of rate increase amounts, including its 5.5% forecasts for 2025 and 2027, may be low estimates, since they include only well-understood costs known at the time. Other costs, such as ERP transition costs that have been defined since that initial forecast may raise final rate request amounts.

F. Strategic financial planning

Long-term utility strategic planning typically involves significant engagement with uncertainty, often through scenario or stochastic analysis. CPS Energy does engage in scenario planning to help understand uncertain future costs. For example, CPS Energy, working with the Rate Advisory Committee, has engaged in the past year in extensive scenario planning as part of the process to select a new supply portfolio plan. This planning process included extensive analysis of the potential costs and rate impacts of different supply portfolio plan choices. CPS Energy has also worked with consultants to

[40] "Generation Planning Supplemental Financial Insights." PowerPoint presentation by Chad Hoopingarner, December 2, 2022, Slide 2. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/RAC/20221130%20Supplemental%20Charts%20V14.pdf

develop a cost estimate range for the new ERP system. In both cases, this information has been shared with the Board. Similarly, the range of possible costs for Winter Storm Uri is well understood.

However, Daymark is concerned that a side-effect of the emphasis on using only well-understood and defined costs in budget and rate planning (as previously discussed) is that it often leads to conservative point estimates. There may not be (and Daymark did not discern) an established, regular mechanism or forum for considering all of CPS Energy's possible costs together as part of a strategic financial planning process that would provide CPS Energy management and Board with a picture of the potential *range* of medium and longer-term bill impacts that may result from CPS Energy's initiatives and the uncertainties faced by the utility in different scenarios. CPS Energy's cash flow model seems to be set up for scenario planning and may be being used for this purpose outside the budget process; however, we did not see any evidence of its being used in this way. The model provided to Daymark excluded the financial impacts of certain major upcoming strategic initiatives (newly approved supply portfolio plan and full impacts of implementing a full replacement of the existing ERP platform). No scenario planning or stochastic analysis incorporating these activities was apparent in the model provided to Daymark, and none of the Board presentations or other materials we reviewed provided a holistic scenario planning outlook.

One of the key questions that strategic financial planning should address is whether CPS Energy's initiatives, taken together in different scenarios, are a potential threat to affordability. Striking the right balance between requesting (and receiving) necessary rate increases is a challenge, one that can be seen in recent ratings agencies reports. S&P Global's 2022 rating narrative illustrates one aspect of the dilemma. The leading reason S&P Global gives for its negative rating outlook is "our view that the utility's rate affordability could weaken as it considers raising base rates on a more regular basis on a customer base where approximately 22% of residential customer balances are past due." The other side of this dilemma can be seen in the most recent Fitch ratings analysis, which lists "Failure to implement planned rate increases" as the first in a list of potential factors that could lead to a downgrade.

Of equal importance with consideration of the possible impact on credit ratings of increasing or not increasing rates are other potential consequences of increasing customer costs, particularly energy burden impacts on low-income customers and new and existing businesses. Another worrisome outcome of increasing customer costs could

be a potential decline in San Antonio's ability to attract new businesses to the City. Although perhaps an unlikely outcome, at an extreme, there could be risk that, as customer costs increase, support for exposing CPS to competition could develop, with serious consequences not only for CPS and its customers, but for the City of San Antonio, for which revenues from CPS Energy make up a significant part of the city budget. While Daymark does not believe these outcomes are of immediate concern to CPS Energy, we suggest that a holistic planning process can act as forward-looking headlights to illuminate the potential risks of such challenging situations becoming reality far enough in advance for the utility to undertake effective mitigation measures.

Strategic planning is a tool that can help CPS Energy and its Board define and consider these risks. For example, a good strategic plan should examine both the best-case and the worst-case scenarios, considering cost and revenue overall uncertainties. Although Daymark has seen CPS estimates of the bill impacts of projected rate increases and of the new supply portfolio plan, and potential cost ranges have been developed for the ERP transition and for Uri expenses, we have not seen a consolidated analysis of the potential impact on customer bills if all these estimated costs come in at the high end of projections. There may be other variable costs that should be considered in this kind of analysis as well. By identifying the worst-case scenarios, CPS Energy and its Board can consider whether these would be acceptable, and, if not, work on developing contingency plans to prevent them.

Observations – Strategic financial planning

Observation IV-12. CPS Energy analyzed multiple scenarios as part of its recent supply portfolio planning process.

Observation IV-13. There is an opportunity for CPS Energy to use stochastic or scenario analysis more comprehensively to analyze potential future financial scenarios and the potential cumulative customer bill impacts of new initiatives, considered together.

Recommendations – Strategic financial planning

Recommendation IV-6. CPS Energy should work with the Board to develop a medium- and long-term strategic financial planning process, separate from budgeting and the development of rate requests. The focus of the strategic plan should be on estimating the impact of current decisions on potential bill impacts 5-10 years in the future and should use scenarios or stochastic analysis to assess the risk of unacceptable outcomes. The goal is to allow CPS Energy to craft effective mitigation strategies sufficiently in advance to minimize the potential for undesirable consequences.

G. Rate design

Discussion

CPS Energy has not updated its rate design since the base rate increase that occurred in 2014. In 2022, when the most recent base rate increase occurred, no changes in rate design were made. The 3.85 percent increase was applied uniformly to all customer class rates. CPS Energy committed to reviewing its rate design during the review of its 2021/22 rate request and is now in the process of reviewing and likely re-designing customer rates. In this effort, CPS Energy is working with the Rate Advisory Committee (RAC),[41] which has been tasked with reviewing CPS Energy's existing rate structure and providing recommendations to CPS Energy for proposed modifications.

In December 2021, CPS Energy indicated that it would engage with the RAC to propose updated rate designs by December 2022. However, that timeline has been extended (presumably because additional time was needed by the RAC to develop their recommendations for CPS Energy's resource supply plan), such that recommendations are now expected during 2023.[42] Initial rate design meetings with the RAC have begun as of the date of this report.

CPS Energy's current rate design

Daymark reviewed CPS Energy's current rates, focusing on electric rates, to understand the rate options available and the influence they might have on customer behavior.

Fuel cost factor

Perhaps the most important aspect of CPS Energy's current rate structure is the inclusion of an adjustable unit fuel cost factor which passes through both fuel costs (including PPA costs) and the related increase in the City contribution that occurs when fuel costs rise. This is also the mechanism used to collect costs related to the regulatory asset created to manage costs associated with Winter Storm Uri.

This provision provides significant financial stability to CPS Energy and has been especially important during the recent swings in fuel prices. It is cited by all three ratings

41 The RAC is made up of 21 members comprised of 11 appointees by the CPS Energy Board of Trustees, including Mayoral appointees and 10 City Council appointees. Available online at https://www.cpsenergy.com/content/corporate/en/about-us/who-we-are/rac-rate-advisory-committee.html

42 CPS Energy, Council Rate Request Discussion, December 1 2021.pdf. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Dec%201%202021%20Council%20Rate%20Request%20Discussion.pdf

agencies as a significant positive element of CPS Energy's financial position. The insulation provided by the fuel cost factor from fuel prices, however, is only as complete as the rate at which CPS Energy's customers pay their bills—when fuel costs rise, CPS Energy does have some exposure through the costs it may face in unpaid bills (which may tend to increase during times of high fuel costs, as CPS Energy experienced this year). This exposure has contributed to the high bad debt expense CPS has recorded this year.

Reduced per kWh charges for higher usage levels

Another feature of CPS Energy's current rates is that rates step lower for higher levels of consumption. This is a rate feature that was at one time very common but has become less common with increasing public policy interest in promoting energy efficiency. Note that base rates recover both variable and fixed costs. If they decrease, under-recovery of the latter is possible. However, this kind of step-down rate structure may also act to encourage beneficial electrification of heating and transportation as the industry moves in that direction to address climate change concerns.

Demand and energy consumption management incentives in the current rate design

Utility rates can play a powerful role in helping to channel energy use towards off-peak hours and in trying to encourage customers to manage their load to reduce system peaks, using mechanisms like time of use rates and peak demand charges. Although CPS Energy has the physical infrastructure (smart meters) necessary to implement such rates, it is Daymark's understanding that the necessary computer infrastructure to process the data and ultimately to implement rate designs to respond to it (i.e., the billing system) may not yet be available. CPS Energy's current rates include some seasonal differences that make power somewhat more expensive in the summer months, on average, which may encourage conservation in those months. Demand charges for large residential customers and for commercial and industrial customers are present, but there is no corresponding time element, so it is not clear how these demand charges shape customer behavior. In summary, sharper price signals leading to more economically efficient energy consumption may be possible and could leverage CPS' smart metering capability if the back-end computer system is able to process the data and bill customers based on more sophisticated rate design.

The CPS Energy Save for Tomorrow Energy Plan (STEP) offers a range of customer demand response and efficiency options and is discussed in more detail in Section VI of this report.

Programmatic sponsoring of means for customers to reduce energy bills (discussed further in the Customer Engagement section of this report) can work in a complimentary manner along with creating rate structures that sharpen pricing signals. The opportunity to provide additional rate options or new rate classes, utilized correctly, can improve customer satisfaction and contribute to stable revenue growth. Any rate design effort must balance customer needs with revenue stability considerations.

CPS Energy's rate design review

The engagement of CPS Energy and the Rate Advisory Committee in a review of CPS Energy's rates is very timely in the light of the prospect of increasing rates and the changes that have come to the electric sector with greater availability of renewables, advanced metering, and growing electrification of heating and transportation, as well as the longer-term changes to the electricity sector that may come as national and state policy continues to adapt to address climate change concerns. The RAC and CPS Energy face a potential challenge in balancing the benefits of keeping bills low for lower-income customers and the importance of ensuring that non-residential customers are not overburdened to a point that becomes an obstacle to business activity or where relocation to a more competitive utility becomes desirable and cost-effective.

Rates and the allocated cost of service

One consideration in designing rates is whether they fairly allocate the costs of service among different classes of customers. CPS Energy's Fiscal 2017 allocated cost of service study indicated that commercial customer class rates were set too high while residential customer rates were set too low, relative to cost of service, but the level of cost misalignment was not deemed material at the time of the study, and no change in rate design took place at that time. In FY 2023, CPS hired an outside vendor to undertake an updated Cost of Service study. Daymark has not reviewed the updated study; however, in a recent presentation to the Rate Advisory Committee, CPS Energy noted that it found that "commercial rates contribute more than their cost to serve."[43]

[43] "Rate Design Conversation: Benchmarking TX Utilities" PowerPoint presentation to Rate Advisory Committee, February 23, 2023. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/RAC/20230220%20Feb%2023%20RAC%20NonProfit%20Research%20v6.pdf

Without more information about the size of the discrepancy between the contributions of commercial rates and their cost to serve, it is not possible to make a recommendation about whether and how that discrepancy should be addressed. However, allowing a discrepancy to grow too large raises issues of fairness and could make it difficult to attract and maintain electric loads. As a rule, it is a good practice, when possible, to move towards a more equitable distribution of costs during a rate redesign, based on fully allocated cost of service, even if full cost causation proportionality cannot be attained without unacceptable customer impacts.

Technology constraints

Initial meetings of the RAC to discuss rate design have begun. The initial presentation to the RAC by CPS Energy focused on establishing a comparison pool (and perhaps a source of ideas) in the rates of other Texas utilities. A second presentation, however, raised some warning flags about potential technology constraints on near-term changes to rate design. Although CPS Energy does have Advanced Metering Infrastructure (AMI), the utility warns that the ability to implement significant changes like residential and commercial time of use billing may be delayed by the need to transition to a new billing system.

Observations – Rate design

Observation IV-14. CPS Energy's current rate design's fuel cost factor is an important source of financial stability to the utility; other rate design elements, such as reduced per kWh charges for higher usage levels, have been abandoned by many other utilities.

Observation IV-15. Although a range of customer programs to support demand response are offered, CPS Energy does not offer any rates that are tied to time of use.

Observation IV-16. Allocated cost of service studies suggest that, at least to some extent, commercial customers may be making payments that are above their proportional cost to serve. Daymark does not know if this observation extends to industrial customers.

Observation IV-17. IT system limitations may constrain the rate structures that it is possible for CPS Energy to implement in the near term.

Recommendations – Rate design

Recommendation IV-7. Any actions taken by the RAC to modify rate design should be evaluated in combination with the results of the updated cost of service study that

was recently completed, in accordance with best practices in utility rate design, while addressing energy equity or burden.

Recommendation IV-8. The RAC may wish to consider whether a phased rate plan, with conservative short-term changes and more innovative longer-term changes, is appropriate. Daymark supports CPS Energy's caution in raising the issue of potential constraints on the rate changes that should be considered in conjunction with the ERP transformation.

Recommendation IV-9. While respecting the technology constraints discussed above, the RAC should consider whether there are innovative approaches that might be adopted in future, such as such as time of use rates or even "real time" varying rates, that may have the potential to incentivize behavior that could produce meaningful savings for CPS and its customers.

H. Internal risk management: Enterprise risk management & development and internal auditing

Discussion

Both Enterprise Risk Management & Development and Internal Auditing play important but distinct roles in CPS Energy's risk management efforts. They are not solely financial in their concerns; however, they are included in the financial section of this report because of their frequent close connection to financial and budgetary issues and because, within CPS Energy, Enterprise Risk Management reports to CPS Energy's Chief Financial Officer & Treasurer.

Enterprise risk management & development

Located in the Financial Services business Unit, Enterprise Risk Management & Development was budgeted in FY 2023 for a total staff of 20.[44] The unit, however, has two different functions: Enterprise Risk Management, which will be the focus of this section, and Development, focused on bringing economic development opportunities to San Antonio.

The Enterprise Risk Management function consists of a staff of seven, including the director. CPS Energy's Enterprise Risk Management was described to Daymark as providing oversight of CPS Energy's internal risk and internal controls program and working as a kind of central clearinghouse to provide tracking and technical assistance for risks being managed by individual business units.

[44] CPS Energy, FY2023 Budget Plan Final.pdf, pg. 56. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Finance/FY2023BudgetPlan-Final.pdf

Enterprise Risk Management staff state clearly that their mission is not to identify risks. Rather, they develop and manage a comprehensive risk register to track risks identified by the business units and works with business units to provide the tools to develop mitigation efforts and to help to integrate risks and mitigation plans into the budget process, with a time horizon that is most typically one year. The risk register is highly confidential, and Daymark did not receive a copy; however, we were given an overview of it online and some samples of the kinds of risk it contains, and our estimate is that hundreds of risks are tracked down to a granular level. There is an effort to ensure that "Swan" risks (low probability, high impact) risks are tracked and managed along with more everyday risks.

Although Enterprise Risk Management is related to the strategic planning needs Daymark discussed in Section IV.F, above, we do not think it addresses the gap in strategic financial planning we identified previously. The function of the Enterprise Risk Management unit is not to identify risks, but to support business units in managing the risks they identify. As a central clearinghouse, it can play a role in identifying risks common to multiple departments and elevating them to be addressed at a higher level, and Daymark did see one risk entry that appeared to be an example of this kind of activity. However, we believe that the focus on supporting departments in managing their separately defined risks leaves a potentially significant gap in terms of the highest-level organizational risks, that may not fall into the purview of any single department—and the emphasis of the work of Enterprise Risk Management seems to be on managing risks of current operating initiatives, not longer-term strategic challenges.

Another observation relative to the current Enterprise Risk Management structure is that, while its location within Financial Services seems like it has the potential to provide benefits in terms of strengthening the connection between risk management and the budget process, it is not clear that there is any functional rationale for the combination of Enterprise Risk Management and the business development functions. It may be that there is a temporary rationale that is based on the Director having the appropriate skill sets for both functions; however, there may be a risk associated with co-locating these functions. Business Development needs may inadvertently become the focus of this unit, due to their immediacy, but the identification and mitigation of risks has a longer term and more strategic benefit that requires constant focus. Daymark did not observe any evidence of this happening, however.

Internal auditing

Internal auditing provides another form of risk management to CPS Energy. If Enterprise Risk Management helps business units manage risks they have identified, internal audit can be thought of as helping business units identify and assess risks they may not be aware of.

Organizational reporting structure

To support objective reviews, an internal audit organization should avoid reporting directly to the business units it must audit. CPS Energy accomplishes this for Audit Services by having it operate under a dual reporting structure in which it reports administratively to the Chief LEO General Counsel and Board Secretary, and also directly to the Audit and Finance Committee of the Board of Trustees, which participates in the hiring process and performance evaluations for the audit director, which approves the annual audit plan, and which receives updates on audit findings.

Successful external review

CPS Audit Services complies with international internal auditing standards by conducting an external assessment at least once every five years. The most recent external review was concluded in October 2022. In this review, Audit Services received a ranking of "generally conforms" (the highest possible ranking) on each of thirteen internal auditing standards, and the report describes Audit Services as well-respected and highly regarded by senior stakeholders within CPS Energy, which is consistent with what Daymark heard in interviews.

Most of the observations in the external review were of "Successful Internal Audit Practices." One "opportunity for continuous improvement" identified in the report is worth flagging because of its relationship to CPS Energy's ERP project. The recommendation was for greater use of technology ("Computer-Assisted Auditing Techniques," or "CAATs") and data analytics to enhance Audit Services productivity, improve coverage, and in more cases audit 100% of data rather than a sample. The audit division management response concurred with this recommendation but stated that "access to data across the organization currently limits the ability to expand the use of CAATs." The management response suggested that this capability could increase with implementation of the new ERP.

Audit planning

The audit division recently revamped its audit planning process in an effort to align the work better with the top risks faced by the organization by mapping a "risk universe" (types of risks to which CPS might be exposed) to the "audit universe" (a list of nine functional areas within CPS). The division develops an annual audit plan, which, according to the audit manual "must be based on a documented risk assessment, undertaken at least annually." According to the audit manual, senior management and the board should have input for the plan. Risks are also informed by Enterprise Risk Management Services.

Work included in the audit plan can be grouped into three types: audit, other assurance, and advisory. Audits may be of varying scopes, but all result in a formal audit report. "Other assurance" projects included evaluation of process design and controls (but not testing) or, alternatively, assistance provided to an external auditor. "Advisory" engagements may support "process redesign, business transformation, or new system implementation," or may provide "in-depth analysis in support of a broader issue," and do not necessarily result in a written report.

The most recent audit plan (for Fiscal Year 2023) was presented to the Audit and Finance Committee of the Board for approval on May 11, 2022. Thirty-two audit projects were proposed, of which twenty-one (approximately 2/3) were audits, seven were "Other Assurance," and four were "Advisory." The overall audit activity in the Audit Plan was mapped against 18 areas defined as part of the "risk universe" and against 9 areas of CPS (e.g. Energy Supply, Administration, General Council, etc.) defined as parts of the "audit universe." The following is the list of the top four "risk universe" areas in terms of how many of the different parts of the audit universe would be in some way engaged by the audit plan in relation to that risk:

- Data integrity/governance (planned audit activity for this risk was intended to cover all nine "audit universe" areas of CPS in 2022).
- Fraud & Ethics (all nine "audit universe" areas)
- Financial Reporting (seven of nine "audit universe" areas)
- Cost management/process efficiency, Legislative and Regulatory Compliance, and Vendor Management all were mapped to six of nine "audit universe" areas.

The fact that the audit plan for data integrity/governance touches all areas of the audit universe may indicate that it is perceived as an area of risk across the entire CPS

organization. This level of concern may be an indicator of some of the current system issues that the ERP transition (discussed in the closing section of this report) is intended to address.

An initial review of the Annual Audit Plan presented by Internal Auditing seems to show some areas of relatively little audit activity in categories that include "operational process failure," "technology," and "safety." However, this map is not a complete representation of all the audit activity at CPS, since some areas are being covered by outside audits not conducted by audit services. A more comprehensive map could be developed covering all audit activity.

Audit findings and follow-up processes

The Audit Division provided Daymark with an Audit Services Project List that covered Fiscal Year 2018 though Fiscal Year 2023. Daymark reviewed a sample of these audits—eighteen initially provided by CPS, and an additional four requested by Daymark.

Among the audits we reviewed, 16 findings were characterized as "satisfactory," and 14 findings were characterized as "needs improvement." No finding was ever characterized in the third possible category, "unsatisfactory." Audits include a "Management Action Plan" for addressing findings. Action items in these plans are tracked in the audit computer system and closed when completed. According to the Audit Services Manual for Audit Engagements, auditors have the responsibility of following up to ensure these items are completed and escalating "as necessary." A monthly report is provided to the CEO on progress towards completing Management Action Plans.

A number of the audits Daymark reviewed related in some way to third party management (management of vendors and contracts). As discussed in the background section, outside services make up a significant and growing share of the CPS non-fuel O&M budget. Internal audit is playing an important role in helping CPS identify risks and strengthen internal controls around managing outside services.

Observations – Internal risk management

Observation IV-18. **Through the risk register managed by the Enterprise Risk Management group, CPS Energy has developed a central tracking mechanism for risks associated with current operating initiatives; it may be possible to leverage this mechanism as a means of identifying and tracking larger cross-organization risks; however, Daymark was not able to assess the extent to which this is currently happening.**

Observation IV-19. Enterprise Risk Management and Business Development functions are organized within a single business unit. There does not seem to be a clear business rationale for this organizational structure, and it could introduce risks of distraction for the risk management function.

Observation IV-20. CPS Energy's internal audit division received the highest possible rating in a recent external review.

Observation IV-21. Additional efficiencies for the Internal Audit division may be possible after implementation of the new ERP system.

Observation IV-22. The dual-reporting structure of the internal audit division provides important balance to the oversight of this department.

Observation IV-23. Not all audit work is conducted or overseen by the Internal Audit Division; accordingly, the Internal Audit annual audit plan is not a complete representation of audit activity at CPS Energy.

Observation IV-24. A recurring focus of CPS Energy internal audits is management of vendors and contracts, and audits have identified a number of ways to strengthen internal controls in this area.

Recommendations – Internal risk management

Recommendation IV-10. CPS Energy should examine whether it is maximizing the opportunity to use the current risk register central risk clearinghouse to identify cross-organizational risks that can best be managed at a level above that of individual business units.

Recommendation IV-11. CPS Energy should review the current joint ERM/Business Development organization to determine whether there is a danger that the immediacy of business development needs may distract from the longer-term benefits of risk management, resulting in a lack of focus on the smaller risk side of the unit.

Recommendation IV-12. The "audit project coverage" matrix developed by Internal Auditing as part of its audit planning process should be expanded to include all CPS Energy audit activity, in order to make it easier to identify areas that may not be adequately covered.

Recommendation IV-13. Daymark recommends that oversight of contractors and vendors, an area in which the Audit Division seems to have identified a number of risks, continues to be an area of focus, given that outside services represents more than half of CPS Energy's non-fuel O&M budget.

V. OPERATIONAL EXCELLENCE

A. Introduction

As part of its engagement, Daymark took a lens to CPS Energy's electric and gas performance over its recent operational[45] history. To do so, we examined industry-standard indicators, some of which are part of the set of metrics which CPS Energy tracks at a Board level internally. We caution that metrics of this sort must always be carefully considered: when trends are observed, positive or negative, attention must be paid to ascertaining the circumstances (operational decisions as they interplay with the realities occurring on the system) such that sound strategies can be determined going forward. Similarly, when comparing CPS Energy's indicators against industry in the form of benchmarks, careful attention must be paid to the differences in measurement approaches, service territory, and other factors which can serve to limit applicability.

Through our review of such metrics against historic data and curated benchmarks, we observed a utility which operationally has achieved largely satisfactory outcomes over the period reviewed. Our analysis herein largely focuses on the core strategic challenges that our team perceived based on our review of files and procedures, discussions with management, and our industry experience. The strategic challenges, depending on how they are dealt with by CPS Energy, have the potential to worsen outcomes (e.g., experience greater frequencies/durations of service interruption or upward pressure on rates), or, as we would hope, be dealt with in a way that increasingly positions CPS Energy as a model utility among its peers.

The remainder of this section V. provides our analysis, observations, and recommendations with respect to both electric service and gas service operations. Figure 7 previews some of the key topics discussed here, including reliability, asset management, workforce, and strategic planning.

[45] Daymark throughout uses the term "Operations" to refer broadly to the functions which are involved in the provision of either electricity or natural gas to customers. "Operations" can in certain contexts refer to the role of system operations, but given the nature of this review it is used to be inclusive of engineering, maintenance, construction, fleet services, etc.

Figure 7. Operational excellence perspective of this review

Observations - Introduction

Observation V-1. Operationally, CPS Energy achieved largely satisfactory reliability-based outcomes over the period reviewed.

B. Current and future state of CPS Energy's electric delivery system

CPS Energy's electric delivery function is a significant determining factor of the organization's success and an area which management and other stakeholders should both continue to monitor closely, but also an area in which these parties should strive to frame and get ahead of impactful strategic challenges.

Electric delivery is a highly salient aspect of CPS Energy's operations: when customers see prolonged outages, it can erode trust in the organization and/or be the impetus behind reformative action. Unfortunately, there are drivers of service interruption that are beyond the control of the utility (e.g., weather extremes, supply disruptions, ERCOT-mandated load shedding), but there rarely exists the opportunity to redirect the conversation away from the utility's role in mitigating such interruptions. Therefore, it is imperative that CPS Energy, like any utility, carefully manage its teams and processes which support electric reliability outcomes.

Beyond the role the electric delivery teams have in supporting customer reliability, these teams and functions will support the transformation occurring throughout the grid. Customers are increasingly seeking to produce and use energy in new ways, including solar photovoltaic (PV) and battery systems, home and networked electric vehicle infrastructure, and responsive demand. The utility will be expected to facilitate and manage this transformed topology, which will introduce new demands on the utility's operational and engineering teams.

CPS Energy's Energy Delivery organization was expected to reach a headcount of 1,168 in FY2023 and was budgeted for approximately $135 million of O&M expense and $403 million of capital expenditures. Several mission-critical processes and activities reside within Energy Delivery. It is imperative that the interactions between these processes and activities are well understood and that meticulous tracking is performed.

Daymark structured its review of the core electric delivery function as follows:

- Reliability: Daymark reviewed CPS Energy's industry-standard reliability metrics to get a sense of how the system has performed over recent years. CPS currently monitors two of these metrics as part of the Energy Delivery Tier 1 metrics.
- Capital Budgeting and Asset Management: Daymark reviewed the process by which the Electric Delivery Service (EDS) budget is allocated. Often, budget dollars are not available for the full scope of projects identified, making the prioritization of projects a key success factor. This budget adjustment often impacts asset management activities, which are critical to the ongoing reliability and safety of the system.
- Grid Modernization: Daymark comments on the current state of CPS's grid modernization efforts and offers considerations related to continued deployment of technologies.

Reliability

Discussion

Daymark benchmarked CPS Energy's performance on industry-standard reliability indices to evaluate the organization's standing regarding this critical operational outcome. We found that results have been generally good over the past several years, but, acknowledging the challenging prospect of maintaining strong system reliability, we explored this topic in our documentation review and interviews and present additional context and key findings below.

System reliability has been a core tenet of electric utilities for much of their history. A reliable electric system can facilitate growth in the local economy and support social institutions and goals. Because of this wide-reaching importance, regulatory bodies, and other stakeholders in electric operating companies (for a municipal entity like CPS Energy, its city oversight committees) typically track reliability metrics as a way to assess utility performance. In cases where degrading reliability is observed, these parties may demand explanation or organizational changes to try to reverse trends and progress toward a higher standard of reliability.

Reliability is not a single, binary characteristic of an electric system; there are many ways to analyze and understand this aspect of system performance. Some of the most important distinctions for both management and other stakeholders to consider when reviewing reliability metrics are the following:

- "Blue sky" performance versus storm/inclement weather: A utility faces very different circumstances in ensuring reliable service in differing weather conditions and in turn is often held to varying standards for the performance of its system. Today in most parts of the United States, "blue sky" service interruptions are expected to be rare and, when they do occur, brief. Conversely, the utility is often judged by a different set of criteria in its response to major storms: given that some extent of outages is usually expected, the standard of performance is typically related to the ability to mobilize crews to restore service in an expedient, organized fashion, communicate with customers, and, in the long term, build out a system that limits the ramifications of tree contacts and other disturbances (e.g., strategically sectionalizing/networking the distribution system)
- Frequency and duration: Differing root causes of interruptions and utility responses often mean that customers on the system can see a varying mix of frequency and duration of service outages. A system plagued by frequent, short outages may show adequate performance on a metric which relates to total outage time but may present an unacceptable state for example a commercial customer that may need to take responsive actions for each outage. A system which is subject to excessively long outage durations presents risks such as spoilage of food, prolonged interruption of commercial activity, and customer health emergencies, especially when coinciding with severe weather.
- Granularity: Reliability is often analyzed at the "system" level (all customers) and occasionally by district or circuit; we observed that CPS monitors reliability data at a sufficiently granular level. Reasons for "rolling up" and looking at reliability at a high level include expediency and also the way in which a high-level review can make it easier to see an overall pattern above the randomness

inherent in reliability. However, it is important for the utility to track problem circuits and more localized problems; frequent poor performance on a subset of the system may not always move the needle on the "Tier-1" reported reliability metrics but could contribute to customer dissatisfaction with the utility. We note that CPS utilizes a circuit tier methodology, service districts, and problem circuit tracking which all support visibility of sub system-level performance.

- Randomness: Circuit performance is characterized by a degree of randomness. This randomness is related to the factors which conspire to cause interruptions and are often outside the control of the utility, most notably the weather. Stakeholders with an interest in overseeing utilities have dealt with this randomness by using approaches such as tracking reliability across several years and stripping out outage data related to weather events exceeding a certain threshold definition. Management and stakeholders therefore always need to make allowances for noise within reliability data, but also must understand where and how the actions of the utility can mitigate against the potential root causes of outages.

The electric utility industry has defined a set of reliability metrics to aid in consistency of calculation and utilization of these data points.[46] Listed below are three widely used indices with a brief description:

- System Average Interruption Duration Index (SAIDI) — Duration of Outages: Represents the minutes of non-momentary electric interruptions the average customer experienced over the course of a year. SAIDI reflects the integrity of the local electric grid.
- System Average Interruption Frequency Index (SAIFI) — Frequency of Outages: Represents the number of non-momentary electric interruptions the average customer experienced over the course of a year. SAIFI is an indicator of system resilience.
- Customer Average Interruption Duration Index (CAIDI) — Restoration Time: Represents the average time required to restore service. CAIDI is an indicator of response time for every occurring outage, indicating how quickly power was restored to customers.

These metrics are reported with and without the inclusion of major event days (MEDs), allowing a user of the data to consider business-as-usual reliability performance somewhat separately from overall reliability inclusive of major storms that often drive the major outages.

[46] Electric reliability index definitions and related calculation procedures are maintained in IEEE Standard 1366. Available under license at: https://standards.ieee.org/ieee/1366/7243/.

The degree of detail within reliability data must always be carefully considered before making conclusions about reliability. Deteriorating performance observed in a top-level index may indicate some combination of randomness, a need for increased budget in some area which supports reliability, or a need for a revised management approach. However, additional data are often needed, for example, to indicate *where* budget dollars are needed or how program strategy might need adjustment. Daymark reviewed CPS Energy's Reliability Report and noted that the organization collects and reports on circuit-level data which can be analyzed to provide strategic insights. We stress that this analysis must be detailed and ongoing, due to the nature of reliability data; for example, frequent device operations observed on a circuit may at times be driven by that circuit approaching a vegetation management cycle and therefore not necessitate any programmatic change. The type of data CPS Energy collects may be able to indicate that reliability outcomes would be improved by (all as examples): directing more funds toward deploying animal guards, increasing preventative maintenance of poles versus underground circuits or vice versa, or shortening the vegetation management period on a circuit or subregion.

Daymark, as part of its overall review of CPS Energy, performed a benchmarking of reliability performance against a curated subset of comparison utilities and observed the trend in CPS Energy's own reliability. Table 4 shows CPS Energy's average performance in the indicated reliability categories over the past five years as compared to utilities with similar customer counts. Table 5 shows CPS Energy's trend in the indicated reliability categories during the same period.

Table 4. CPS Energy Reliability Percentile within Peer Group

RELIABILITY METRIC	PERCENTILE
SAIDI	100%
SAIFI	86%
CAIDI	100%
SAIDI w MED	91%
SAIFI w MED	52%
CAIDI w MED	95%

Table 5. CPS Energy Reliability 5-Year Trend

RELIABILITY METRIC	CPS ENERGY'S 5-YEAR TREND
SAIDI	+3.0 (minutes of interruption/year)
SAIFI	+0.05 (interruptions per year)
CAIDI	+0.03 (minutes/interruption/year)
SAIDI w MED	-3.6 (minutes of interruption/year)
SAIFI w MED	-0.01 (interruptions/year)
CAIDI w MED	-1.5 (minutes/interruption/year)

These analyses are intended as a high-level assessment; fully congruent utility comparisons are nonexistent[47] and trend data must be carefully considered given the complicating factors discussed above. Our review shows that CPS Energy has exhibited top-quartile reliability over the observed period, aside from SAIFI with MED (i.e., inclusive of major event disruptions). The SAIFI performance of a system can be improved by increased levels of vegetation management and greater segmentation of customers. There is, however, room for improvement, and the discussion in this Section V. covers areas in which CPS should consider refining aspects of its strategy to further improve reliability outcomes. Daymark notes that even from a strong starting point, reliability performance can deteriorate within a short period of time if budgets are imprudently cut or if programs are mismanaged, making it essential that the utility continually review reliability-supporting activities.

Observations - Reliability

Observation V-2. CPS Energy's performance on industry-standard reliability indices has been good over the past several years, exhibiting top-quartile reliability over the observed period with the exception of SAIFI w MED.

Recommendations - Reliability

Recommendation V-1. We recommend that CPS Energy clearly communicate how strategy is being adjusted based on ongoing circuit-level data collection within the Reliability and Power Quality Quarterly Report ("Reliability Report"). The reporting should explain how observations of trends are used to inform spending areas and other strategies such that the Reliability Report transparently represents how cost-effective reliability investment is being made.

[47] Electric utilities in the United State vary greatly in weather, geography, customer density, system age, etc., all of which contribute to differing expectations of reliability.

Capital budget and asset management

Discussion

The capital available for investment in the electric delivery system in any year is necessarily limited. A primary responsibility of management therefore is to make decisions regarding the prioritization of projects and programs which provide the best "return" in terms of outcomes. What makes this task difficult is that many outcomes must be simultaneously assessed, including, but not limited to, policy objectives, improving reliability, and the ability to flexibly expand and react to future system needs. Further, the task is complicated by opacity in each dimension. Policy often evolves more rapidly than organizations can respond; reliability can be difficult to directly observe and prove; and impactful factors such as technology evolution and economic/customer growth are unpredictable.

In reviewing CPS Energy's current capital budgeting and prioritization approach, Daymark also kept in mind potential upcoming budget dynamics as a reason why awareness of and attention to the electric delivery budget will be important to CPS Energy's success in upcoming periods. Several factors remain unknown,[48] but, given the recent rate increase results and the major initiatives being undertaken by the organization, discussed in Section IV. E., there may be budgetary pressures that the electric delivery and supply organizations face. To ensure reliability and other customer outcomes do not deteriorate, CPS should review the process whereby electric system projects are prioritized within the budget.

Daymark understood from interviews that CPS Energy's high-level approach to prioritization is to allocate budget to both regulatory-driven and customer expansion projects and then adjust remaining program budgets as necessary. The prioritization of these first two categories in our assessment is sensible and necessary to support the goals of the organization. We therefore note the importance of ensuring that adequate budget is provided for the remaining project types and that prudent selection occurs within the remaining categories.

Daymark reviewed the project list contained within the 2021 Energy Delivery Services (EDS) Long Range Plan to assess how system upgrade projects were categorized and described. Daymark observed inconsistencies in the level of detail offered for the projects across the different programs. In project plans of this sort, we would expect to

[48] Examples include the outcome of the natural gas cost litigation, evolution in the bad debt trend, and ongoing performance of CPS Energy generation fleet and the market prices it captures.

see, per industry best practice, a conceptual but detailed project scope, a well-established justification, and a discussion of alternatives considered, where applicable. Naturally, the level of detail should match the size of the project or program.

Project # S-0868 (Appendix B.) is an example of a project that has a thorough analysis contained in the EDS Long Range Plan and which in our view would support effective prioritization and transparency. For this project and others that contained a thorough analysis, we urge the responsible teams to continue to work toward providing detail around expected benefits, providing numerical benchmarks where possible.

Project # E-0269 (Appendix B.) is an example of a project for which we would have expected to see a more detailed discussion of justification/benefits given the program's size. While the project data included discussion of the benefits of FLISR as a technology, to achieve best benefit for investment in this program further details should be offered regarding how individual circuits are identified for implementation of the technology and the way in which benefits might be tracked.

Supporting their asset management strategy, CPS Energy has a process by which circuits are routinely patrolled depending on their tier.[49] We noted that at times there have been difficulties that have prevented construction crews from fully utilizing this data; given the cost associated with performing this data collection, we highly recommend this process be given renewed attention to ensure it supports the reliability improvement of key circuits as intended. Two specific concerns that were noted were a mounting backlog of work orders, which underscores the importance of planning for adequate resources in upcoming periods, and a suboptimal information technological infrastructure[50] supporting the work order and crew workflows. There is an expectation that the planned ERP implementation will improve the work order processing and scheduling workflows; we recommend therefore that this specific application be tracked[51] within the evolving ERP scope.

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49 Tier 1 circuits are defined as those critical to the public wellbeing, i.e., hospitals, fire/police, government, airport, downtown network; Tier 2 circuits are those which offer significant social/economic benefit to the community; and Tier 3 circuits are all circuits not classified as Tier 1 or 2.

50 Data currently exists in different spreadsheets, reports, and kiosks across different service districts.

51 At a minimum, we would encourage a timeline to be identified for the new system to offer the required functionality and metrics outlined which provide indication whether it is successful in improving the existing state.

Observations – Capital budget and asset management

Observation V-3. **CPS Energy's high-level approach to prioritization of allocating budget to both regulatory-driven and customer expansion projects and then adjusting remaining program budgets as necessary is sensible and necessary to support the goals of the organization.**

Observation V-4. **Daymark observed inconsistency within the level of detail offered for system upgrade projects within the 2021 EDS Long Range Plan across different programs.**

Observation V-5. **There have been some information technology frictions hampering crews' abilities to timely address work orders opened as a result of CPS Energy's circuit condition data collection. CPS Energy intends to address the IT gap in their ERP implementation.**

Recommendations – Capital budget and asset management

Recommendation V-2. **Ensure that projects in the long-range plan beyond a threshold size contain adequate detail regarding scope, justification, benefits, and alternatives. Further, the organization should ensure that an objective prioritization approach is in place which ensures highest-value projects are being pursued within a given budget cycle.**

Recommendation V-3. **Management should track the evolution of the volume of open construction work orders and consider remedies if indications are such that the volume is having a negative effect on system performance or customer experience. The new ERP was identified as a potential facilitator of improved work order processes; the organization must manage timelines and expectations in areas such as this where the ERP is expected to provide a long-term solution.**

Grid modernization

Discussion

Throughout the history of electric power, utilities have embraced advances in technologies which have been associated with outcomes such as greater worker and public safety, longer asset life, and greater reliability. In recent years, however, certain pieces of equipment, and particularly their software, have built on these types of advancements and have begun to necessitate change in certain utility operations. In jurisdictions across the country, the term "grid modernization" is often used to describe the complex interaction between the deployment of these technologies and the longer-term operational shifts they may prompt.

Daymark, based on its experience working with utilities and regulators on topics of technology evolution, notes the importance of stakeholders understanding the scope of

the label "grid modernization". Grid modernization is often used to refer to certain generations of specific technologies, for example, customer meters which can provide interval data and connectivity that unlock new efficiencies and insights for the utility. Grid modernization often also encompasses less discrete and standalone areas of investment: the increasing digitalization, interconnectedness, data collection, etc. of standard utility equipment occasionally blurs the lines between standard utility investment and evolution and programs that might represent step changes in the utility's operations. The wide diversity of equipment and software that are discussed under the banner of grid modernization increases the importance of synergizing near-term investment and system buildout with longer-term visions of the future capabilities and the role of the utility.

Daymark performed a review and strategic evaluation of CPS Energy's embrace and utilization of the types of technology we typically associate with grid modernization. As is key in discussions regarding grid modernization, we also considered the long-term vision CPS Energy is progressing towards with its investments.

CPS Energy has laid out a solid groundwork for being able to achieve the benefits of grid modernization: advanced metering infrastructure (AMI) has been deployed in the territory, "smart" circuit reclosers are being deployed, and the utility has a number of distribution circuits which have fault location, isolation, and service restoration (FLISR) and volt/VAR optimization (VVO) capabilities. We stress, however, that deployment of devices does not suffice to deliver the efficiencies associated with grid modernization; there is a significant amount of process revision and retraining which must occur to fully leverage the data, connectivity, etc., that these devices provide.

Important to the discussion of grid modernization, CPS Energy is at a critical juncture regarding its operational technology platforms. CPS Energy presently relies on aging technology platforms for the operation of its electric system. A major initiative is under way to implement next-generation platforms.[52] These platforms have the potential to facilitate several efficiency-providing features, but these often require lengthy and deliberate timelines for process revision, training, and data validation.

[52] We generally referred to this platform transition with interviewees as the "OT/SCADA" (Operational Technology/Supervisory Control and Data Acquisition) initiative. CPS Energy's existing Outage Management System (OMS) and supporting platforms were described as increasingly dated and introducing limitations. Daymark understands that the roadmap plans for a new Energy Management System (EMS) solution to be implemented followed by an Advanced Distribution Management System (ADMS).

The following sections will identify observations, analysis, and recommendations for CPS Energy's different grid modernization efforts.

AMI

Discussion

AMI is a technology with a wide range of potential capabilities. In Daymark's experience, utilities often have success in leveraging the meter reading, billing, and service start/stop functions, but occasionally encounter challenges and longer timelines in attaining benefits that relate to real-time operations, rate design, and data collection. Daymark learned that CPS has encountered an AMI network latency which has precluded some operational usages of the technology.

Quality AMI data will underlie several functions of the next-generation operational technology platforms which CPS Energy seeks to implement. Therefore, a commitment of resources to resolve the latency and a general commitment of the EDS teams to continue to implement and familiarize themselves with the available data will support the eventual success of the platform implementation.

AMI has a wide range of applications: Daymark has reviewed proposals in which more than ten discrete benefit streams for AMI have been proposed.[53] Tracking these benefit streams to ensure that customers receive the greatest benefit from the nontrivial expense of implementing the meters and software is critical. Management should be able to observe how the organization is progressing in realizing the various usages which were identified at the time the investment was made. This tracking should seek to identify barriers, such as the latency issue being encountered, and lead to commitment of resources to resolve if circumstances are such that it will be in the best interest of customers.

Observations – AMI

Observation V-6. CPS Energy has laid out a solid groundwork for being able to achieve the benefits of grid modernization, including AMI, but CPS Energy has encountered an AMI network latency which has precluded some operational usages of the AMI technology.

Observation V-7. CPS Energy is at a critical juncture regarding its operational technology platforms, currently relying on aging technology platforms for the

[53] Matter 08349, Nova Scotia Utility and Review Board https://nsuarb.novascotia.ca/sites/default/files/M08349%20Decision.pdf; See also: Case No. 16-481-EL-UNC, Public Utilities Commission of Ohio https://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=0de45244-96b1-410d-8f58-e00527b361c9.

operation of its electric system, but with a major initiative underway to implement next-generation platforms.

Recommendations – AMI

Recommendation V-4. CPS Energy should seek to better leverage the AMI investment ahead of the OT/SCADA investments coming down the pipeline.

Recommendation V-5. The benefits that AMI was expected to deliver at the time of the investment decision, as well as any potential emerging uses, should be carefully tracked and assessed Resources may need to be dedicated to effectively leverage the wide-ranging use cases, but the decision to do so must be based on a criterion of value to customers.

Circuit selection and expansion of technology

Discussion

CPS Energy has begun implementing FLISR and VVO schemes on a number of its circuits. We note that under distribution projects E-0269 and E-0273, budget is being allocated for further rollout of these technologies. The budgeted amounts appear to be reasonable from a high-level perspective.

With these technologies, we stress the importance of performing careful circuit selection: because of the nonuniformity of the system, these technologies often have different prospects for performance on one circuit versus another.

Observation – Circuit selection and expansion of technology

Observation V-8. CPS Energy has begun implementing FLISR and VVO schemes on a number of its circuits, with a reasonable budget for additional rollout.

Recommendations – Circuit selection and expansion of technology

Recommendation V-6. CPS Energy should ensure that there is a methodology in place for understanding at the project selection stage the expected benefits for each of these investments and measurement of the performance of circuits with the technology to ensure that the continued investment is accretive to customers.

Recommendation V-7. CPS Energy should ensure that it has ranking processes in place to determine which circuits would benefit most from deployment of new technologies and should track performance against these criteria.

Tracking the value streams

Discussion

Grid modernization equipment and software are expected to be transformative for utilities. What's more, this transformation will occur throughout the organization: the

control room, the field, the engineering teams, the call center, etc. will all have workflows that change as such a shift is made. The pervasiveness of grid modernization is a boon in that it seeks to introduce efficiencies driven by greater data availability, remote operability, etc. throughout an operation (specifically, the distribution system) which has for so long been data-starved. However, the diversity of areas in which these grid modernization investments are expected makes necessary a thorough tracking effort, which is minded by management, communicated outwardly to stakeholders, and informed by each of the groups impacted by a given technology.

Daymark reviewed material associated with the OT/SCADA Strategic Initiative and found that detailed cost information has begun to be developed. As the initiative progresses, Daymark would urge stakeholders in this process to outline and refine the areas in which benefits will be targeted and the expected timing of their achievement.

Failure to identify specific, trackable success measures risks this major initiative falling short of its potential benefits. For example, we note that one of the sub-initiatives identified is to "Enable a self-optimizing grid." The scope of the initiative lists goals such as "improve the customer experience" and "increase operator and grid efficiency." CPS Energy and its implementation partners should aim to distill these strategic outcomes down to those which can be better tracked. "Improve the customer experience" may be taken to refer to the improvement of reliability as a result of the self-optimization of the grid; therefore, it is important to develop a way to validate that customers see a reliability improvement of some sort on account of a self-optimizing grid. "Customer experience" could also refer to outcomes like power quality, call center experience, DER integration experience, etc., in which case validation approaches for each of those should be developed.

Tracking of benefits should be done with the primary objective of supporting decision making throughout the lengthy implementation process. By methodologically collecting and reviewing observations which provide indications of the extent to which expected benefits are being achieved, management can make the decisions which support achievement of those benefits going forward. For example, if tracking were to reveal that crews were still performing a high level of manual circuit patrols where there was an expectation that the technology would allow for a reduction, that could be an indication that further training, improved data validation, etc. are needed to reach the full benefit. A secondary and important reason for implementing robust benefit tracking is that it supports transparency to city stakeholders and customers.

Observation – Tracking the value streams

Observation V-9. Cost information has begun to be developed for the OT/SCADA set of investments. However, the project breakdown does not yet contain quantifiable and measurable goals.

Recommendation – Tracking the value streams

Recommendation V-8. As the OT/SCADA implementation matures, CPS should identify what benefits justify the investment and set up tracking such that they can be monitored.

Burden on resources in implementation

Discussion

A large portion of the anticipated benefits from grid modernization-related investments come from the process improvements allowed by the greater data availability, operational flexibility, etc. Especially because these process improvements in cases involve shifts in the expectations around traditional utility roles and concern mission-critical outcomes, a deliberate focus must be lent to the time requirement imposed throughout the organization by such a transformation.

Daymark observed that categories such as training, process development, upskilling, and "People" are identified within the investment plan for the OT/SCADA strategic initiative. This in our assessment presents a reasonable framework for understanding where costs will be incurred throughout the implementation given the early stage, but we encourage the organization to sensitize around and plan for potential higher costs in these aspects of implementation.

It is a difficult task to accurately identify the training and process development needs at such an early stage, hence why it is prudent to plan for the contingency of much greater costs and longer timelines in performing this critical step. The technological change envisioned will impact a majority of the electric delivery teams and a number of other functions within the organization, but it is impractical to have all of the impacted parties at the table during these planning stages. However, it is these front-line workers who will see their daily responsibilities change. We note, as an example, a utility whose line workers needed additional training to become comfortable with certain aspects of the shift from field verification to control room operation associated with distribution automation. These types of incremental training needs are often only realized during deployment when new processes encounter friction with ingrained and often unwritten approaches to operational tasks.

A similarly important aspect of implementation and one which is also difficult to quantify during planning stages and therefore should be considered as a contingency is the task of data validation and integrity. Grid modernization investment is typically associated with a large volume of new data being collected and this data being used to drive important operational decisions. Data validation is a critical activity that will occur throughout the implementation and has the potential to delay achievement of benefits or incur incremental costs. Operational personnel need to be assured that the baseline system data is accurate, changes made in the field are reflected, identification of inaccuracies occurs in a timely fashion, and that backup procedures are available to perform necessary tasks in the case of data interruptions.

Observation – Burden on resources in implementation

Observation V-10. CPS Energy's platform initiative materials have contemplated a large cost component related to "People"; however, we did not observe in the available materials sensitivities or a detailed discussion of a breakdown of resource needs to support major project phases, such as training, process revision, and data validation.

Recommendation – Burden on resources in implementation

Recommendation V-9. The organization should perform sensitivities regarding the "People" costs within any cost-benefit analyses developed.

Emergency preparedness

Discussion

The performance of a utility in severe weather events is a major determinant of its reputation among the public it serves. CPS Energy, like several entities throughout the state and the region, encountered a monumental challenge in the conditions brought about by Winter Storm Uri. A significant effort has subsequently been undertaken by the utility and its stakeholders to enact reform between the event's occurrence and the writing of this report.

Daymark discussed the topic of major weather event preparedness with many operational and customer groups who have responsibilities in these situations and reviewed a number of documents relating to emergency planning. We observed that the teams were largely aware of the performance deficiencies which were evinced by Winter Storm Uri, that improvement in these dimensions has been a high priority, and that several concrete corrective actions have been completed. Examples of areas of discussion and where CPS Energy has enacted change include:

- Cultivated greater awareness of the challenge presented by cold load pickup;[54] interviewees expected that strategic implementation of "smart" reclosers would support better management of this load shedding operational challenge.
- Reviewed the loads on circuits to ensure critical infrastructure is properly documented within the circuit classification approach.
- Improved visibility of average on/off time during load shed to support more equitable outage time amongst customers.
- Implemented winterization measures, particularly at the utility's generating stations, including adding dual-fuel capability.[55]
- Created a new group within the Customer Strategy organization, titled Resolutions & Solutions, with a role in interfacing with operational teams to plug gaps in communications with stakeholders and customers experienced during Winter Storm Uri.

The areas identified above will all contribute positively to CPS Energy executing an improved response should similar circumstances be encountered in the future. We suggest that management and stakeholders consider broadly the nature of future risks. Heat wave events, for example, could push demand to high levels while simultaneously presenting operational challenges for the region's generating resources.

Storm restoration efforts rely heavily on having an adequate force of trained personnel. During interviews, resource availability was identified as one of the greatest ongoing challenges to the organization in terms of responding to major weather events. A lot goes into ensuring the availability of sufficient resources to deal with system events.

Daymark considers the following four categories as key aspects of a flexible and robust outage response capability and offers the following assessments of what we observed and recommend regarding CPS Energy's operations:

- Procedures and training: Deliberate planning is important for the purposes of preparing the utility for event response. We would expect a comprehensive planning document to outline the strategy to mobilize internal resources and

[54] Planning of distribution circuits relies on diversity within customer loads which in typical operating conditions prevents overbuilding of the system. When circuits are switched back in following a period of outage, the "assumption" of diversity is lost, i.e., automatic controls on customer loads such as space heating and refrigeration lead to greater than normal coincident demand, which in instances can lead to protective device settings being exceeded. Mitigative steps can depend on specific system topology and customer types on the circuit, but include segmentation of circuits, load rotation, customer outreach and communication, etc.

[55] Dual-fuel capability often refers to the option for a primarily natural gas fired generation to use fuel oil to generate electricity.

contractors to address major outage events.[56] Such a document must be maintained and understood by operational teams. The standard of such a plan should never be to replace the judgment that is so necessary in restoration efforts, especially given that the operational challenges experienced are so unpredictable. Rather, it should be central to the continuous trainings and discussions which should be occurring periodically, such that roles, responsibilities, and objectives are understood ahead of a major event transpiring. Daymark had the opportunity to review the Business Continuity Recovery Plan and Seasonal Preparedness Procedures, which covered some themes we would expect to see in a response plan, but we would urge CPS Energy to develop a response plan which pertains specifically to service restoration coordination, and which aligns with industry best practices.

- Mobilization of crews: In interviews, it was mentioned that the organization has been working on more proactively identifying crew needs ahead of storm conditions. We agree that this is a crucial aspect of storm readiness and would offer that it is highly important to have a methodical procedure which supports this mobilization: weather systems evolve at a rapid pace, and there is a cost to having crews standing by. The process should consider how information flows from the meteorological groups to operations management, such as the frequency of update and how risks are outlined, such that crew mobilization can be responsive to the current outlook.
- Internal workforce: A skilled internal workforce contributes to safe, timely, and efficient restoration following disturbances. The advantage an internal workforce offers to storm restoration should be one of several considerations of the insourcing/outsourcing decision as discussed further in the "Workforce" section below. We do not doubt that the contracted crews CPS Energy has relationships with have provided sufficient response to events but note that a core of personnel who are available largely irrespective of circumstances and who knows the nuances of the CPS Energy system can positively support an organized response.
- Mutual aid agreements: Through our interviews, we came to understand that CPS Energy presently utilizes mutual aid to a limited degree. Well-outlined mutual aid agreements with neighboring utilities can be a proactive step which allows personnel to be more expeditiously brought in to meet needs. We caution that mutual aid agreements may not be impactful during certain types of weather events which affect large swaths of the Southwest, such as Uri. However, the model has been beneficial in preparing utilities for dealing with

[56] Docket # 22-ERP-09, Massachusetts Department of Public Utilities. Examples of topics covered in National Grid's plan include emergency response organizational structure, emergency classification, restoration prioritization, and resource acquisition. https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/14942591.

localized weather patterns. CPS Energy should review its mutual aid approach in conjunction with the recommended development of an outage restoration plan to ensure it is poised to take advantage of nearby resources ahead of storm events.

Observations – Emergency preparedness

Observation V-11. CPS Energy teams were largely aware of the performance deficiencies which were evinced by Winter Storm Uri, improvement in these dimensions has been a high priority, and several concrete corrective actions have been completed.

Observation V-12. Resource availability was identified as a key ongoing challenge in responding to major weather events.

Recommendations – Emergency preparedness

Recommendation V-10.CPS Energy should develop a response plan which pertains specifically to service restoration coordination, and which aligns with industry best practices. For example, a sample table of contents is provided in Appendix C.

Recommendation V-11. CPS Energy should refine the process by which information flows from the meteorological groups to operations management, such as the frequency of update and how risks are outlined, such that crew mobilization can be responsive to the current outlook.

Recommendation V-12.CPS Energy should ensure that benefits of an expanded internal workforce to storm restoration are incorporated into the internal/outsourcing analysis discussed in the "Workforce" section.

Recommendation V-13.CPS Energy should review its mutual aid approach in conjunction with the recommended development of an outage restoration plan to ensure it is poised to take advantage of nearby resources ahead of storm events.

Workforce

Discussion

The safe and reliable operation of CPS Energy's electric system depends heavily on a sufficiently staffed and well-trained workforce. Several trends are occurring throughout the CPS Energy organization, its service territory, and the broader electric utility industry which will make this an even more important success factor in coming years. A number of these are listed below with a brief description of how they will relate to the organization's electric generation and delivery workforce evolution:

- Load growth: Load growth will continue to drive new service work orders as well as associated system upgrades (e.g., new substations, etc.). Importantly, there is

an unpredictability about growth, and the organization must remain flexible if growth is to stagnate or reverse.

- OT/SCADA transition and grid modernization is general: CPS Energy's commitment to implement next-generation software and technology will be associated with major changes in its workforce. The transition period is expected to have a significant third-party implementation team contingent working in concert with internal resources to set up systems, adjust processes, etc. There will also be a natural shift that occurs in the skills needed within the organization; for example, AMI obviates traditional meter reading, but requires additional technician skills and back office/information technology jobs to support its functioning.
- Generating Fleet transition: CPS Energy has a sizeable workforce which supports the operation of its existing generating fleet of primarily thermal resources. As CPS Energy retires some of its oldest and most polluting resources and owns/contracts for generating technologies of a renewable or storage nature in their stead, the set of skills needed within the Energy Supply organization will change. The exact way in which the fleet transition will shape the workforce depends to a large degree on the ownership structures CPS Energy pursues and evolution of generation technologies, but the high-level trend suggests retraining or other ways of adding new skillsets to the organization will be needed.
- Resource constraints: CPS Energy has factors that will likely contribute to budgetary pressures in coming years. CPS Energy is currently adding staff throughout the organization, in part to adjust to past hiring freezes. Given that labor is a significant component of the organization's costs, we foresee conversations about the size of CPS Energy's workforce being continued in coming years. Throughout these discussions we stress the importance of a comprehensive evaluation of internal and external labor options, which is discussed further in the next section.

Internal and external labor

Daymark observed through its interviews and review of documents (primarily enterprise financial plans and departmental budget books) that CPS Energy utilizes a significant level of contracted labor within its electric operational departments. Daymark does not consider this to be an unqualified deficiency; there are many strategically-sound reasons why a utility might rely on such sources of labor. Given that contracted resources are such a key part of CPS Energy's operations, especially in core electric operations activities, we feel that it is important to understand CPS Energy's approach to managing this aspect of its resourcing and to identify opportunities for continued improvement in this area.

Daymark urges that CPS Energy continue to improve transparency around the utility's utilization of contracted resources. An important concept for both CPS Energy stakeholders and management to understand, especially as the utility contends with resource constraints, are the tradeoffs that exist between utilizing internal resources to handle workload as opposed resources under contract.

Daymark observed in several strategic/communicational materials (e.g., the December 2021 interim CEO Report on the rate increase, slide 4) a theme of highlighting a reduced workforce to achieve cost savings. While running a lean utility is an admirable target, we find such a discussion is incomplete without a corresponding consideration of outside services utilized for the period.

We understand that CPS Energy has in the past year expanded and seeks to expand its internal workforce considerably over coming years; the FY2023 budget plan outlined a headcount increase of 14% on an organizational level, 9% within Electric Delivery Services (EDS), and 20% within Energy Supply. Throughout such a transition, we stress the importance of tracking and communicating departmental labor costs in an integrated fashion across internal and contracted costs and work outcomes.

Additionally, to support the objective of increased transparency to stakeholders and management, CPS Energy should consider establishing criteria to support consistency in making departmental-level decisions around labor resources. Through our interviews, we heard several justifications cited for outsourcing work which generally aligned with Daymark's views: examples include using external resources to deal with peak workloads and to provide either specialized knowledge or to perform specialized work. However, we also heard in interviews that there exist certain segments of the company which may be relying on contractors a great deal to perform business-as-usual activities,[57] which suggests that increased scrutiny to managing this allocation could be in the best interest of the utility's customers.

An aspect of the outsourcing strategy which stood out to Daymark was the availability of qualified line workers. Daymark came to understand that while CPS Energy has a thorough apprenticeship program, the length of the program may be increasingly contributing to a preference to utilize third-party crews. Daymark notes that a robust corps of line workers and pipeline of trainees is a strong contributor to a well-

[57] In Daymark's understanding, third-party firms have been managed under retainer-type arrangements, in that workload was so great that contracts were distributed in part on account of where bandwidth existed. One benefit of contractor relationships is that the market can be leveraged to achieve competitive costs; we are concerned that the current outsourcing practices may diminish this benefit.

functioning utility. While we acknowledge that a large contingent of third-party crews may be needed considering factors such as customer growth and past hiring freezes, we urge CPS Energy to devote the necessary resources to maintaining a strong pipeline to ensure the utility is well-positioned for long-term needs. One specific observation regarding CPS Energy's apprenticeship program is that the overall timeline struck us as long in duration compared to industry. We recommend that CPS Energy management consider undertaking a detailed review with the necessary union stakeholders to identify what opportunities exist for continued improvement of the program to ensure that CPS Energy has a well-skilled internal workforce for upcoming years.

Observation - Workforce

Observation V-13. CPS Energy currently utilizes a significant degree of contracted labor for both engineering and operational workloads within the electrical organizations.

Recommendations - Workforce

Recommendation V-14.CPS should clearly define its decision criteria pertaining to outsourcing relative to its short-term and long-term utilization.

Recommendation V-15.CPS should discuss outsourcing volumes in strategic discussions about workforce and labor budget, due to its role as an alternative for certain workflows.

Recommendation V-16.CPS should hold discussions with the necessary parties to outline approaches for increasing the pipeline of internal line worker talent. One consideration may be the length of the existing apprenticeship model.

Generation planning

Discussion

CPS Energy has recognized that its generating fleet, and by extension its power supply strategy, will be an area which will experience fundamental transformation on the near- and long-term horizons. The generation fleet/power supply portfolio has wide-reaching implications for the utility itself and the community it serves. It drives:

- The businesses/activities the utility is involved in and therefore is staffed for (e.g., the types of power plants it owns, operates, and maintains, the fuels it deals in, what types of energy product trading occurs, etc.)
- Costs to customers for energy supply and how costs might be mitigated, given that CPS Energy is a participant in a dynamic ERCOT marketplace and that volatile world commodities and other outside factors influence power generation economics

- Environmental impacts both directly in its communities and beyond
- Reliability, through its participation in ERCOT

Several of the items listed above have been considered with renewed urgency in recent years, serving to increase the criticality of the CPS Energy's generation/power supply strategy. CPS Energy has recognized the importance of deliberate planning in this part of their business and has recently completed a major process-driven effort aimed at aligning stakeholders, both internal and external.

Generation planning is a particularly challenging exercise because of the long timelines and associated high levels of uncertainty involved. No modeling process can divine the future course of fundamentally volatile commodities or the evolution of power generation technologies, two examples of factors which will inevitably weigh on the economics of the supply portfolio. A successful process is continuous and should instead seek to model the performance sensitivity of portfolios to a variety of representative futures, such that costs and risks can be adequately weighed with other portfolio elements.

Daymark reviewed documents related to CPS Energy's generation planning efforts, including the Flexible Path[SM] presentations and the Rate Advisory Committee's 2022 Generation Planning Process. Daymark was also provided periodic updates throughout our engagement, which coincided with the tail end of the Rate Advisory Committee (RAC) supply planning process. The Committee's endorsement of Portfolio 2 and the Board's action approving this portfolio occurred shortly before the preparation of our report.[58]

Daymark considered it appropriate to review this topic alongside the other cross-cutting strategic areas which we perceive as being critical to CPS Energy's success. Our recommendations are not intended to suggest that there were any deficiencies in the modeling which has been done or the processes which have been followed to date; rather, we mean to highlight some considerations and causes and effects which we believe will help continue to elucidate a complex issue to the benefit of both internal and external stakeholders. While the organization has reached a key milestone in its selection of a portfolio, impactful supply-related decisions will continue to be made in the upcoming years, and the market conditions which will impact these decisions will only continue to evolve. CPS Energy has, through the 2022 Generation Planning Process,

[58] https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/JANUARY-23-2023-BOARD-OF-TRUSTEES-SPECIAL-MEETING.pdf.

told a story about its current fleet and the direction it should go to best balance the identified planning objectives; we recommend attention be given to the topics below to continue refining this story to enable CPS Energy to continue to make the best supply-related decisions based on the information available.

Tradeoffs and prioritization in generation planning

Discussion

Daymark observed that the 2022 Generation Planning process incorporated planning objectives which included System Reliability, CPS Energy Financial Stability, Affordability, System Flexibility, Environmental Sustainability & Climate Resiliency, and Workforce Impact. In our view, this is a comprehensive list of outcomes to consider when discussing generation planning.

Daymark suggests that CPS Energy work towards formalizing its discussion of tradeoffs in terms of these outcomes and the ways it might prioritize among these objectives. Implementation-related decisions will continue to occur following the portfolio milestone, and these will carry implications for the identified objectives. For example, the decision to own new sources of generation versus signing contracts with third-party owners will result in very different outlooks for CPS Energy's financial position, its employees, and the risks the organization may incur.

Observations – Tradeoffs and prioritization in generation planning

Observation V-14. CPS Energy in its 2022 Generation Planning process has identified a comprehensive list of planning objectives which were used to understand impacts of different portfolio approaches.

Recommendations – Tradeoffs and prioritization in generation planning

Recommendation V-17. CPS should continue to utilize its new framework, which, through direct involvement of the RAC committee, integrates making tradeoffs and communicating benefits in future supply planning strategy.

Transmission and generation planning interdependencies

Discussion

Transmission exists primarily to connect the often large, central station power plants to the regions in which load is located. From the perspective of the reliability organization (ERCOT), it is not sufficient to ensure that there is enough generating capacity to serve the expected load; a network must be in place which allows power to flow without jeopardizing any elements of that network, and it must be reliable in the face of a set of

reasonably expected contingencies (failures of certain elements). ERCOT, in accordance with electric reliability entities, prepares models and performs periodic studies which examine the sufficiency of the network on various time horizons and proposes mitigation (e.g., transmission reconductors or new transmission lines) to address needs; CPS is a participant in such activities as a major integrated utility.

The interdependencies of the transmission and generation planning processes are significant: the unavailability (due to retirement) of a power plant in the network model will often drive transmission upgrades as output is bumped up on other units to compensate; similarly, the inclusion of a new power plant in the network may cause flows which necessitate upgrades.

CPS Energy performs its transmission planning periodically and in coordination with ERCOT, which should give stakeholders assurance that the transmission system in and around the City of San Antonio will continue to be built and maintained in a way that supports reliability. However, the generation fleet changes being discussed will inevitably have a significant impact on the transmission in CPS Energy's territory. We understand that personnel with transmission planning insights have been involved in the generation planning efforts to date,[59] but we urge that CPS Energy strive to discuss the interrelation of the transmission and generation planning processes more comprehensively.

Transmission cost recovery mechanisms are often not intuitive; specifically, the postage stamp rate that Load Serving Entities (LSEs) like CPS Energy are charged is not conducive to pinpointing individual project drivers on transmission costs. However, this does not mean that such costs do not exist or should not be considered; it only elevates the importance of communicating the transmission costs of future supply-related decisions. The CPS Energy generating fleet currently provides an inherent benefit in that it is situated on a transmission network which is suited to deliver its power to both San Antonio and the broader Texas market and has certain revenue opportunities as a result. The anticipated decommissioning of selected fossil plants, according to studies which have begun to be performed, will require numerous large scale transmission upgrades in and around the city. CPS Energy's customers will be required to pay for these upgrades,

[59] Our discussions of transmission in the generation planning process largely centered around how the organization is approaching the evaluation of congestion cost within certain upcoming supply options. This is an important consideration in ensuring CPS Energy builds the best portfolio to manage risks and meet objectives, but Daymark urges the organization to continually integrate transmission implications into its discussions as the portfolio evolution continues.

albeit indirectly,[60] and continued effort should be given to representing that fact within upcoming resource allocation and planning decisions.

Observation – Transmission and generation planning interdependencies

Observation V-15. The generation planning process documents reviewed did not include specific treatment of transmission sensitivities. Transmission is being considered in the resource procurement process through congestion analyses.

Recommendation– Transmission and generation planning interdependencies

Recommendation V-18. CPS should more explicitly analyze and formally communicate the transmission investment implications of its forthcoming supply decisions.

ERCOT market communications

Discussion

The rules governing ERCOT's market are of critical importance to CPS Energy as a current owner of significant generation capacity and transmission and especially as it takes steps to diversify into owning or contracting for new resource types. The pace of change in the market has been particularly notable following Winter Storm Uri, as regulators and elected officials have sought to enact rule changes to ensure reliability and broad-based improvements in the wake of that event. This period of rapid change has, in Daymark's view, been marked by an increasingly complex interplay between the Governor's office, the legislature, the PUCT, and ERCOT in dictating the course of market design, resulting in a situation where tracking policy evolution is a mission-critical activity for CPS Energy and its customers, yet will require augmented engagement.

CPS Energy has a team which is responsible for tracking ERCOT policy, engaging with ERCOT, PUCT, and elected officials, and disseminating information throughout the CPS Energy organization. Given the way the rule changes which impact CPS Energy progress through various working committees at ERCOT, the policy team has an important role to play in coordinating the attendance and engagement of the necessary team leaders. Daymark found the strategic approach of the policy-focused team to be adequate and appropriate given the size and resources of CPS Energy in relation to other players in the ERCOT market.

[60] Wholesale transmission services within ERCOT are based on the postage stamp method of pricing. "Postage stamp pricing sets a transmission-owning utility's transmission rate based on the ERCOT utilities' combined annual costs of transmission divided by the total demand placed on the combined transmission systems of all transmission-owning utilities within ERCOT." https://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.192/21080adt.pdf.

CPS Energy stresses the critical part of the process whereby policy and market rule-related are carried back to the organization. However, we wish to offer a cautionary note that as major market changes are promulgated on a similar timeframe as CPS Energy makes transformative resource commitments, the number of decisionmakers throughout the organization which will need to understand the trajectory of the market will increase.

Observation – ERCOT market communications

Observation V-16. CPS Energy has a team which follows electric market policy and which is responsible for coordinating strategic discussions with functional groups. Because of the rapid pace of change in the state's electricity market and CPS Energy's planned portfolio shift, we expect the strategic implications of these market issues to carry increased importance.

Recommendation – ERCOT market communications

Recommendation V-19. CPS Energy should ensure that the policy teams have the resources to perform this important dissemination and that managers engaged in resource transition related decisions are prioritizing the intake of updates, especially as they pertain to market design matters.

Continuous planning

Discussion

In our assessment, the RAC's supply portfolio planning process has been a comprehensive assessment of the broad pathways available to CPS Energy over the generation planning horizon. The modeling efforts have properly considered the information available at the time, but key drivers and the resulting implications will continue to evolve over the time horizon in which CPS Energy will be making detailed resource decisions. It is critical that stakeholders, both internal and external, understand both the value and limitations of the planning work which has occurred to date. The planning work is a framework which must be revisited regularly with updated assumptions for CPS Energy to be better positioned to avoid missteps. We recommend that the organization, at this juncture, begin outlining how future evolutions of natural gas costs, technology costs, the supply-demand dynamic in the broader ERCOT market, reliability markets, etc., will be incorporated and what types of reactions will occur within the CPS Portfolio in response.

CPS Energy should consider adopting principles from Integrated Resource Planning (IRP) processes. These processes have been used successfully in jurisdictions around the country and are typically designed to:

- Incorporate scenario views of uncertain and long-range futures.
- Weigh strategically diverse pathways to meeting the utility's long-term needs, including supply and demand side options.
- Formally consider transmission interdependencies, distribution planning and demand response implications.
- Allow for stakeholder involvement.
- Be periodic, such that the utility's evolution in approach can be continually refined.

Manitoba Hydro is an example of a utility which has recently undertaken an IRP process for the first time in its history, wherein it is using the IRP process as a tool to analyze how "the evolving energy landscape to understand how uncertainty and timing of decarbonization, decentralization and digitalization changes, customer energy choices, and changing policy" may impact the region's future energy needs.[61]

Recommendations – Continuous planning

Recommendation V-20. CPS should outline how evolving market information will be used to augment the conclusions of the generation planning process.

Recommendation V-21. Recognizing the importance of continuous planning, we recommend that CPS Energy consider adopting all or aspects of an Integrated Resource Plan.

C. Current and future state of CPS Energy's natural gas operations

Background

CPS Energy serves approximately 300,000 residential, commercial, and industrial natural gas customers as of December 2022 and maintains a physical delivery network of 5,868 miles of distribution pipelines, 89 miles of large diameter transmission pipeline capacity, and approximately 400,000 services. These facilities serve end users primarily in Bexar County, Texas; however, CPS Energy also maintains and operates the distribution systems of two adjacent smaller municipalities (the cities of Lytle and Castroville.)

Demand for gas service from CPS Energy has grown steadily at 1.6 percent annually over the period 2015 through 2020, as represented by the growth in miles of distribution system pipeline capacity shown in Table 6, below. In this case, the growth in miles of main is a proxy for growth in customer seasonal and peak demand, in addition to

[61] https://www.hydro.mb.ca/docs/regulatory_affairs/pdf/electric/gra_2023_2025/02-0_tab_2_manitoba_hydro_is_strategically_adapting_to_the_changing_future.pdf.

customer count. Distribution main miles have increased from 5,415.38 in 2015 to 5,786.80 miles in 2020. The growth rate in 2020 of 1.4% may have been reduced by the impact of COVID-19.

Table 6. CPS Energy PHMSA Report 2021, Miles of Distribution Mains[62]

CPS ENERGY PHMSA REPORT 2021, TABLE A-12: MILES OF DISTRIBUTION MAINS		
YEAR	MILES OF MAIN	ANNUAL % CHANGE
2020	5,786.80	1.4%
2019	5,705.45	2.3%
2018	5,577.81	1.5%
2017	5,494.33	1.5%
2016	5,415.38	1.5%
2015	5,337.35	1.2%
2014	5,275.09	1.2%
2013	5,210.11	1.1%
2012	5,154.68	0.3%
2011	5,140.48	n/a
5- Year Average (2016-2020)	5,595.95	
Compound Average Annual Growth % 2016-2020		1.6%

To serve this growing customer base reliably, CPS Energy maintains a sophisticated organization to manage the procurement, transmission, and distribution of natural gas to its end-use customers, which includes residential and commercial customers as well as CPS Energy's own natural-gas-fired generation system facilities and the operation and maintenance of these facilities on an around-the-clock basis. CPS Energy's management of its physical infrastructure and nexus of contract resources is overseen by three officers in two business units, Energy Supply and Gas Solutions, with coordination of supply and demand between the two units managed by two additional members of the Energy Supply & Market Operations and Fuels Group divisions.

[62] PHMSA represents the U.S. Pipeline and Hazardous Materials Safety Administration.

This report section summarizes the responsibilities of CPS Energy to manage natural gas acquisition and delivery to provide reliable and resilient energy service to customers. It also addresses key findings and opportunities for improvement to meet the Gas Division's long-term planning goals.

CPS Energy benefits from an experienced and diverse team of managers with extensive knowledge of both the natural gas and electric industry. Daymark interviewed key members of the Gas Supply organization, as well as other members of the divisional management teams. Responses received demonstrated that these key senior personnel have the requisite qualifications to carry out their roles and at the same time are keenly aware of the challenge before them to fill positions to reinforce and expand the distribution system to meet expected customer growth.

Gas operation performance indicators

Discussion

CPS Energy tracks its performance through the quarterly updating and reporting of key metrics. Dashboard reports showing where CPS Energy stands for the list of Tier 1 metrics is provided with Board of Trustees reports. It is Daymark's understanding that the full list of Tier 1, 2 and 3 metrics are currently under review for possible changes soon.

The only Tier 1 metric included for the gas side of the business is Gas System Growth, where annual growth is measured in terms of active customer installations. The FY 2023 target is 1.85%, up from 1.25% for FY 2022. Currently, the CPS Energy Gas Solutions business unit is meeting this target, as shown in Figure 8, below, which is taken from the FY2023 Enterprise Metrics Program August 2022 presentation, slide 28.

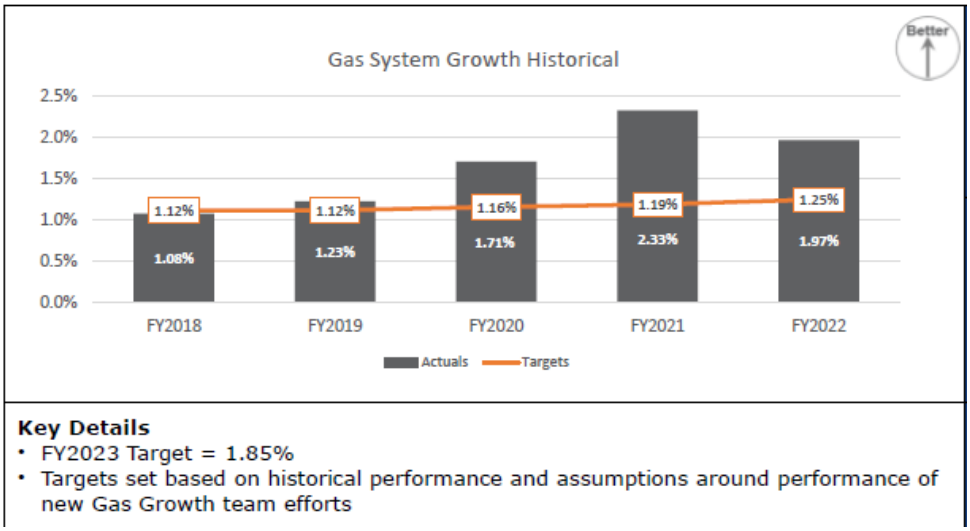

Figure 8. CPS Energy Gas System Growth Historical FY 2018 – FY 2022

CPS Energy Gas Solutions has also adopted a Tier 2 metric to reduce response time to odor complaints to 30 minutes or less. As shown in Figure 9, below, even as the target level increased each year since FY 2018, CPS Energy has met or exceeded it, except for 2022, when it fell just short of its target.

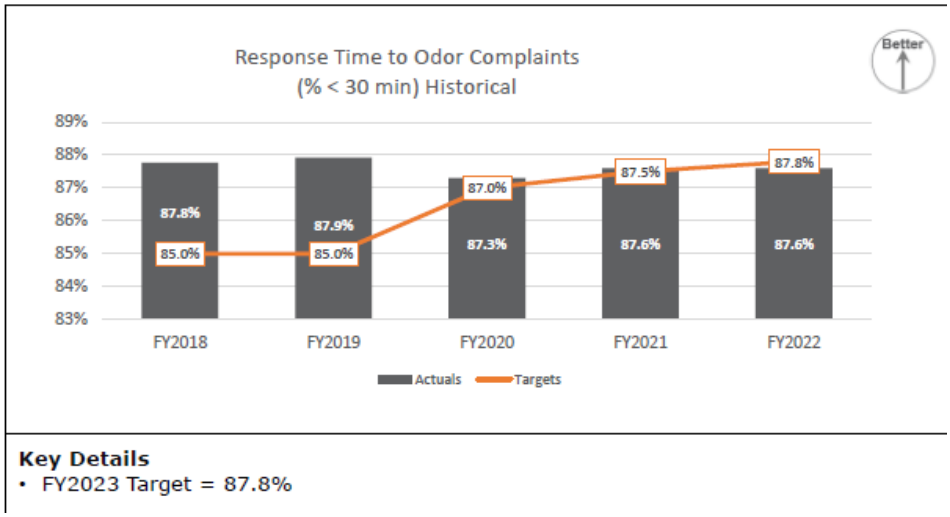

Figure 9. CPS Energy Gas Division Response Time to Odor Complaints, Percent of Responses Times Less than 30 Minutes, FY 2018 – FY 2022

This Tier 2 metric result is an impressive achievement, limited to only a few utilities. The American Gas Association (AGA) published a report of system reliability metrics for 2018 that surveyed results for gas utilities across the country, including CPS Energy, and among them was the metric "Percent of Emergency Responses within 0-30 minutes." The maximum percentage of responses where this minimum 30-minute threshold was met in 2018 was 88% for all Southwest Region utilities surveyed, as shown in the last row of Table 7, below, likely making CPS Energy an industry leader in this regard.

Table 7. American Gas Association Survey of Results for Reliability Metrics by Southwest Utilities for 2018

AGA System Reliability 2018	Southwest Region		
METRICS / COMPANY CODES	Minimum	Maximum	Median
2. Geographic Portion of the Country	Southwest Region	Southwest Region	Southwest Region
3. Average Number of Gas Metered Customer	113,454	3,134,775	522,012
4. Number of Heating Degree Days	852	3,626	1,478
5. Estimated Square Mileage of Gas Service Territory	376	63,218	1,006
3. o. TOTAL MILES OF MAIN	1,933	69,059	11,460
3. o. TOTAL MILES OF SERVICES	1,077	37,243	5,536
5. Average response time per emergency call in minutes	19	55	31
6. a. Percent of Emergency Responses within 0-60 minutes	81	99	88
6. c. Percent of Emergency Responses within 0-30 minutes	38	88	53

CPS Energy's actual response time results for 0-30 and 0-60 minutes for 2022 are shown in Figure 10, below, that includes corresponding 2018 AGA System Reliability survey results for the Southwest Region (grey bar) for comparison.

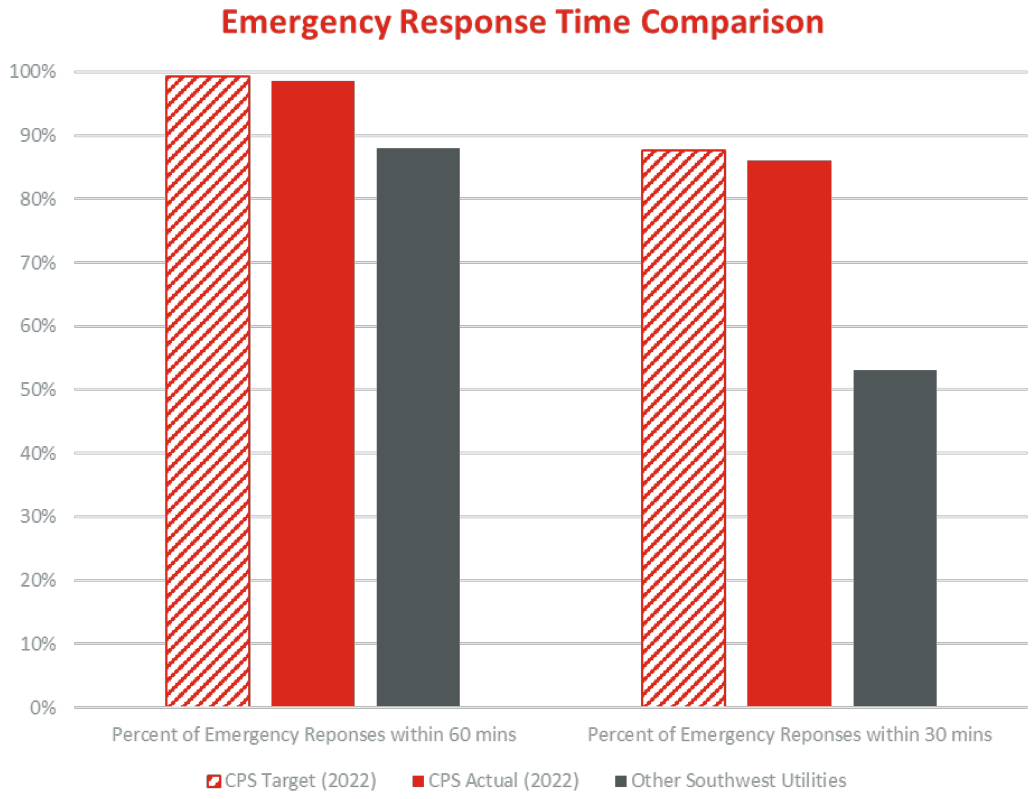

Figure 10. CPS Energy Gas Division Percentage of Response Times Within 60 Minutes and 30 Minutes, Target vs Actual, for 2022.

The CPS Energy Gas Solutions unit is meeting or exceeding its response metrics; furthermore, Daymark's analysis suggests that, overall, the Gas Solutions unit performs strongly in terms of its ratio of operating income to operating expense per customer (see Figure 11).

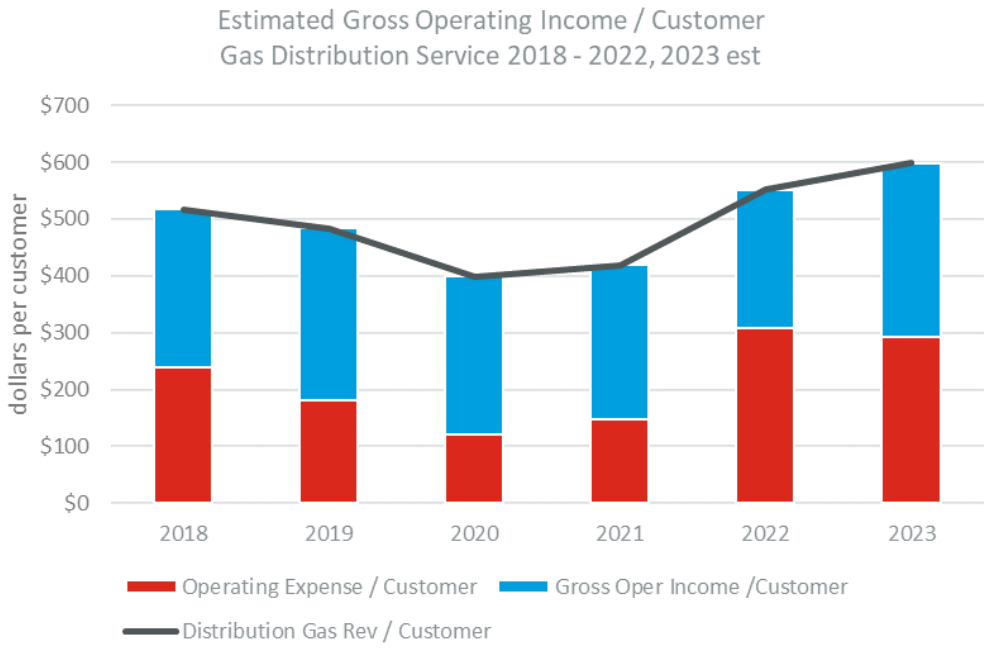

Figure 11. CPS Energy Estimated Gross Operating Revenue per Customer for Gas Distribution Service 2018 through 2023[63]

At the same time, reports to the Board of Trustees point to the Gas Solutions unit activites, specifically, leak repair, as exceeding budget expectations.[64]

Observations - Background

Observation V-17. CPS Energy has been an industry leader in recent periods in responding to gas leaks in a timely manner. The organization tracks this response as a Tier 2 metric.

[63] Data presented are from the 2021 report for CPS Energy Sources & Uses of Revenue FY 2012 through FY 2024, available at: https://www.cpsenergy.com/content/dam/corporate/en/Documents/RAC/RAC%20Request%20-%20Sources%20and%20Uses%20Operating%20Expenses%20OM%20Breakout%20_more%20detail%20-%20Final.pdf

[64] See, for example, CPS PowerPoint presentation, "FY2023 Year-end Financial Update," February 27, 2023, Appendix Slide 13. Available at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/BOT-FEBRUARY272023-REGULAR%20BOARD%20MEETINGv5.pdf

Gas Solutions and Energy Supply & Market Operations

The Gas Solutions team must be sure that it has sufficient gas supply in its distribution system to meet demand and to do so must rely on a separate business unit, the Energy Supply & Market Operations (Energy Supply) Division. Based on interviews with key personnel in both Gas Solutions and Energy Supply, we learned that commodity trading activities are carried out by the latter group, and the Gas Solutions business unit is entirely dependent on their procurement efforts to be able to help balance the system every day.

For its part, the Energy Supply team makes both long-term and short-term – including intra-day – procurement decisions that affect both end-use customers and the power plants' availability to run.

While preparing formal seasonal or longer-range plans, there may be more communication between these two groups about the future, but on an intra-day basis it is not clear how a decision would be made to prioritize specific supplies for end-use customers over the needs of the power plants. During one of our interviews, we observed that the Energy Supply team has full line of sight into how the entire system is operating at any one time and can make decisions accordingly, so our concern is not about their ability to do their jobs. In fact, interview times are difficult to schedule with this team because of their commitment to meet the immediate needs of the system, especially during peak periods. They must also react to supply side market offers on very short notice, and that may require changing unit dispatch priorities for a specific time or day. Further interviews would have offered the time to explore the relationship between Energy Supply and Gas Solutions more. For the time being it appears to be working well, but it remains a grey area.

For this reason, the high-level organization chart shown below as Figure 12 does not include any arrows signifying reporting relationships or information transfers between these two business units. However, they are aware of each other's roles for planning and reliability purposes, and there is an Energy Supply unit metric that measures Load Forecast Accuracy for both retail electric and natural gas for native load.

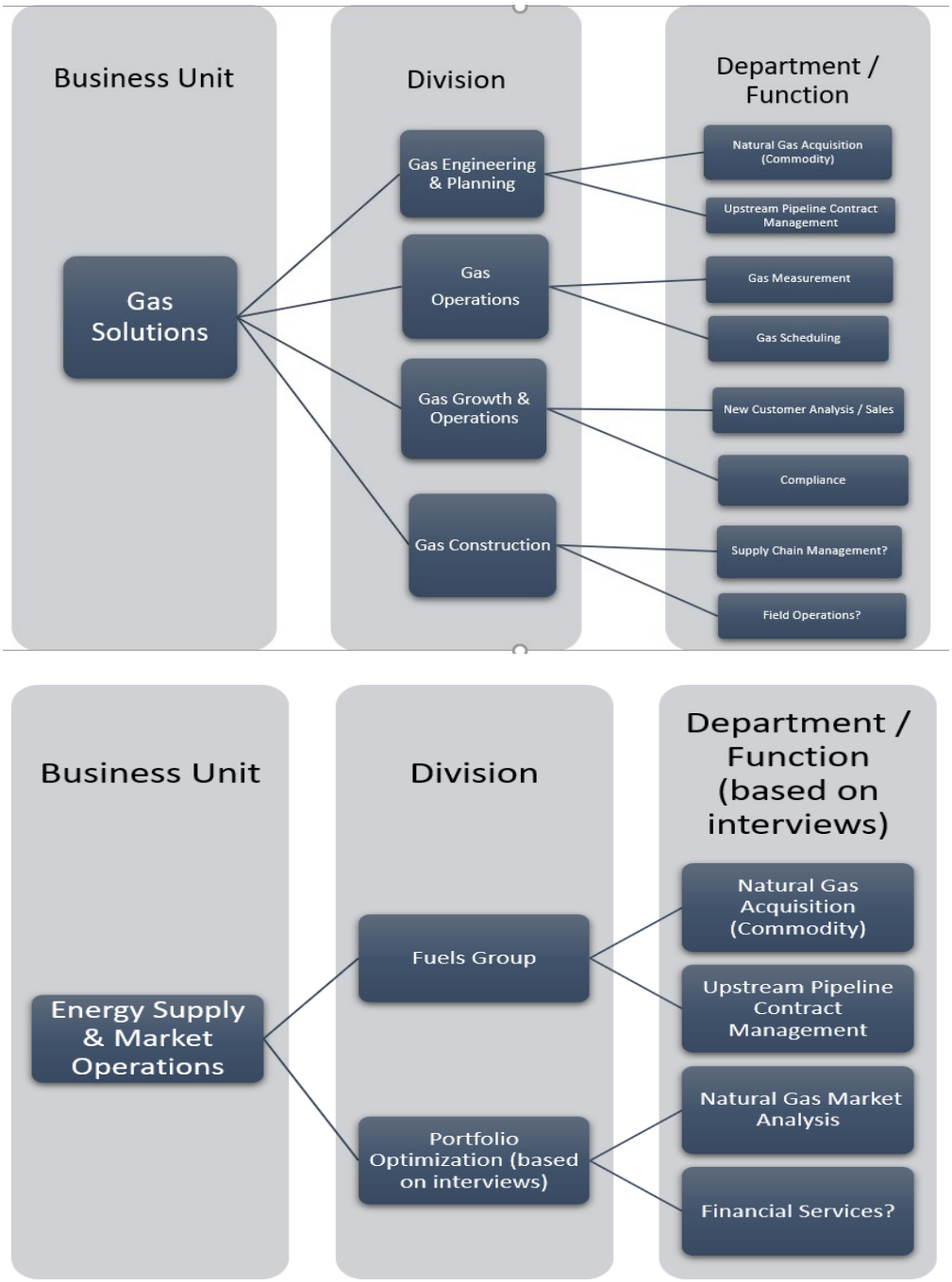

Figure 12. Organization Charts for CPS Energy Gas Solutions and Energy Supply & Market Operations Units

Observation – Gas Solutions and Energy Supply & Market Operations

Observation V-18. The interface between the Gas Solutions organization and groups within Energy Supply and Market Operations is critical to the reliable delivery of natural gas to customers. Employees in both organizations are aware of this dependency and work sufficiently to meet customers' needs, but documentation reviewed largely did not reflect these lines of communication.

Recommendation - Gas Solutions and Energy Supply & Market Operations

Recommendation V-22. Document procedures for coordination between Gas Solutions and Energy Supply and Market Operations

Workforce and training

Discussion

The Gas Solutions team members interviewed emphasized that they have plans to increase staff by 12% over the next one to five years to be assured new customers can receive adequate, reliable service. They expressed concern that they may not have the budget flexibility to meet this goal because the labor market for engineers in general and gas engineers in particular is tight. Even if enough people with the necessary set of skills and qualifications join the team in a timely manner, it will require further effort to take a cohesive approach to daily and seasonal training to communicate CPS Energy norms through enhanced on the job training. This is because the fast growth CPS Energy is experiencing creates a dynamic environment for meeting peak day and peak hour requirements in addition to procuring resources to meet seasonal demand.

CPS Energy has one advantage working in its favor as it tries to secure candidates to fill open positions: as the largest municipal utility in a high-growth local economy with an attractive cost of living, it can offer potential new employees an attractive quality of life. However, managers must also compete for this talent pool with non-utility employers who can make offers that exceed typical utility salary levels.

The importance of successful hiring is underscored by our review of key documents provided by CPS Energy that describe their growth objectives and planning criteria and how their current performance to achieve these goals is reflected in federal government mandated reports to the Pipeline and Hazardous Materials Safety Administration (PHMSA). These PHMSA reports show that while good performance has been maintained over time, there is room for improvement going forward, such as undertaking a detailed analysis of the reasons why some categories of leaks are either increasing or not decreasing over time, including for both distribution pipelines and

services. To improve on these results will require paying closer attention to activities measured for the PHMSA reports while also carrying out daily activities of serving a growing customer base. This may require additional staff.

Daymark understands that CPS Energy has its own plans for attracting new hires and training them. In the interest of providing assistance based on other utilities' experience, Appendix D of this report includes an example of a training program curriculum that offers new hires an incentive to join and then obtain on the job training and qualifications. This approach may help identify promising candidates who may consider working for CPS Energy for all the reasons its current staff remains loyal and motivated, but also because it may be a way to build the pipeline of future senior managers.

Observation – Workforce and training

Observation V-19. The Gas Solutions organization has expectations of sizing up its workforce in the near term, in part to meet demands of new customer growth. Hiring managers have thus far encountered some difficulty in attracting the necessary skilled labor in a tight labor market.

Recommendation – Workforce and training

Recommendation V-23. CPS Energy should develop and/or partner with workforce organizations to create an in-house training program. (Example curriculum provided in Appendix D)

Natural Gas System Strategic Plan

Discussion

CPS Energy recently published a Long-Range Development Plan prepared by the Gas Solutions business unit, including the Gas Engineering & System Planning and Gas Systems Planning & Integrity departments, that addresses the design requirements for expansion and reliability projects for the next ten years. Expansion projects are driven by new customer growth, while reliability projects are intended to address areas of low pressure measured under peak usage conditions or from modeling simulation of new load requests.

In addition to the Long-Range Plan, CPS Energy files an updated Distribution Integrity Management Plan (DIMP) mandated by U.S. Department of Transportation regulations and PHMSA, where PHMSA is a federal program that is enforced at the state level. The Long Range Plan also summarizes capital and O&M projects that require major gas transmission upgrades or equipment replacement that support reliable transmission of natural gas to CPS Energy power plants. CPS Energy also operates and maintains 89 miles

of transmission pipeline, i.e., larger diameter pipeline capacity that interconnects with third party interstate pipelines and operates at a higher delivery pressure than the downstream distribution pipelines that deliver gas supply to end users. These projects are part of the CPS Energy Transmission Integrity Management Plan (TIMP) that support periodic validation that the transmission line is safe to operate and is a companion to the annual DIMP filing.

Daymark assumes that the strategic plan for the natural gas fired generation assets managed by the Energy Supply business unit are handled separately from the Long-Range Plan and TIMP for transmission capacity that serves generation facilities. The Strategic Plan for the CPS Energy transition plan is discussed in the Electric Operations section (Section V. B.) of this report.

Daymark does not have any specific observations or recommendations regarding the gas strategic plan.

Reliability and resiliency

Discussion

Gas utilities in general follow guidelines for providing reliability that requires maintaining access to resources under contract that make sure the distribution system pipelines are full and can meet customer needs throughout the day. The Gas Solutions unit has full line of sight to monitor system pressures throughout its system and included in its Long Range Plan a detailed list of geo-located project upgrades that will maintain pressure as planned or proposed customer growth occurs.

Gas utilities in the state of Texas are regulated by the Texas Railroad Commission (RRC), rather than the Public Utilities Commission of Texas (PUCT). Our discussions with key personnel in the Gas Business unit confirmed that they believe that their obligation to meet the requirements of the RRC has been met. Although RRC oversight of CPS Energy is comparatively light, the Gas Solutions unit reviewed the enhanced reliability and resiliency requirements issued by the RRC following Winter Storm URI and determined that they were compliant by mid-December 2022. The RRC issued instructions for how to determine whether these regulations were applicable to individual utilities that required viewing the RRC's online mapping system to see which utilities must be compliant. The RRC's new rule requires "critical gas facilities on the state's Electricity Supply Chain Map to weatherize, based on facility-specific factors, to ensure sustained operation during a weather emergency; correct known issues that caused weather-

related forced stoppages occurred before Dec. 1, 2022; and contact the RRC if they sustain a weather-related forced stoppage during a weather emergency."[65]

Discussions with Gas Solutions staff confirmed that the team had viewed the RRC Electricity Supply Chain Map but could not locate CPS Energy facilities on it and thus concluded that CPS does not have critical facilities as defined by the RRC, and thus the new rule doesn't apply. Nonetheless, CPS Energy proceeded to make the necessary adjustments and weatherization checks and upgrades to its system to make sure that its operations would be compliant if it were later determined to be necessary to file any confirming documentation.

During our interviews with CPS Energy management and staff, Daymark asked about how and when a decision would be made to curtail gas usage by larger end users to preserve and maintain supply to residential customers and other end users providing critical care services to the community, which presumably also includes the government facilities of the City of San Antonio. The response given was that the system is designed to respond to a drop in pressure at a receipt point interconnected with upstream pipeline facilities such that if the physical flow of supply failed, the system itself would detect the drop in pressure and respond by shutting off supply to the gas-fired generation facilities. When asked about other large end-users, such as commercial and industrial customers, we were referred to the Long-Range Plan, which includes a confidential list of customers organized by name and maximum daily usage and were advised that arrangements exist, whether by special tariff or other agreements, that would allow CPS Energy to call upon these customers to shut off if necessary. Since some of these customers would experience economic impacts or security concerns if asked to shut off, such special arrangements are necessary and are under review at this time due to the potential for another event like Winter Storm URI.

While there are fewer metrics for reliability for gas compared to the electric side of the business, there is an approach to winter season planning for gas used by many utilities across the country. This approach includes running dispatch models to show whether the existing portfolio of contracts and pipeline infrastructure capacity are sufficient to meet not only a defined peak day / peak hour requirement but also an extended cold snap of between 6 to 10 days. Some regulatory commissions require utilities to make a

[65] RRC Commissioners Approve Final Rule to Weatherize Natural Gas Supply for Emergencies, August 30, 2022. https://www.rrc.texas.gov/news/083022-rrc-weatherization-standards/#:~:text=The%20new%20rule%20requires%20critical,forced%20stoppages%20occurred%20before%20Dec

formal filing of their long-range plans showing these scenarios; the RRC does not but does require facilities to meet the enhanced weatherization standards mentioned above, which the Gas Solutions unit believes it has met.

Observation – Reliability and resiliency

Observation V-20. The Gas Solutions organization has not been mandated to enact any specific Railroad Commission requirements pertaining to critical facilities. Nonetheless, CPS Energy has made necessary weatherization upgrades and checks in line with the Commission's requirements.

Recommendation – Reliability and resiliency

Recommendation V-24.CPS Energy should develop a written plan for winter season system management to enhance transfer of institutional knowledge and integrate winter operations. This plan would be in addition to maintaining CPS Energy's practice of meeting the RRC weatherization checks described above and maintaining the existing Curtailment Plan. The benefit of a winter season system management plan would be to: (1) memorialize procedures for coordination daily between the Gas Solutions and Energy Supply units, and (2) double as an opportunity to review criteria for gas supply decision making and provide an important training tool for new staff added to meet growth over time. Appendix E provides an example of a table of contents for a winter season system management plan.

Gas service affordability

Discussion

Daymark reviewed survey data assembled by Memphis Gas Light and Water on total bill impacts for a list of 14 utilities over the last three years between 2019 and 2022. (Apparently no survey was conducted for the year 2021, perhaps due to the pandemic.)

In each year, CPS Energy is at or near the top in affordability, i.e., the total bill – not just the gas supply commodity rate – is lower for CPS Energy customers than for customers of most of the utilities in the survey. As shown in Figure 13, below, for a residential customer using 200 CCF per month, even after the recently approved rate increase for 2022, CPS Energy (yellow bar) ranks as the most affordable among the group.

While customer service generally is addressed elsewhere in this report, the comparative results shown in this chart reflect positively on the specific efforts of the Gas Solutions and Energy Supply units to maintain affordability for customers.[66]

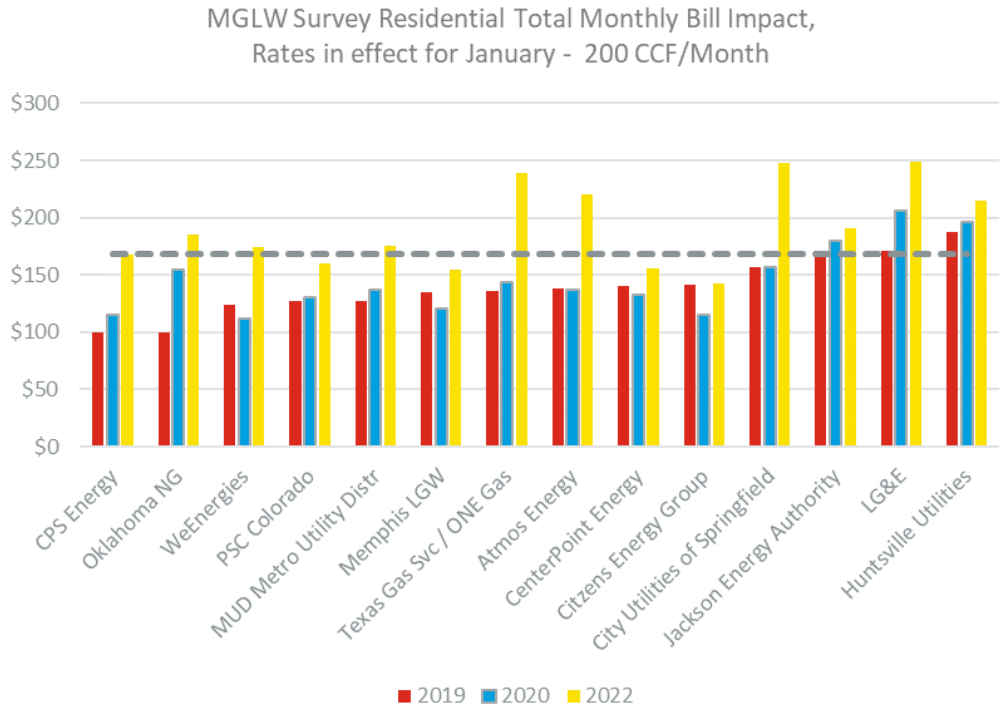

Figure 13. Memphis Gas Light & Water Survey of Residential Total Monthly Bill Impact for Gas Utilities for the Month of January 2019, 2020, and 2022.

Observation – Gas service affordability

Observation V-21. CPS Energy is at or near the top in gas service affordability, compared to thirteen other peer utilities surveyed.

Leak management

Discussion

CPS Energy should consider adding a new metric that tracks progress in managing removal or replacement of leak-prone pipeline and services throughout the system. This is a multi-year program that is covered in detail in the Long-Range Plan, which provides the necessary assurance that this important safety and reliability effort is being

[66] While the normalized 200 CCF monthly usage level depicted in Fig. 14 is high for the typical CPS customer, the overall peer comparison is still informative.

addressed. Progress can also be followed by reviewing the annual reports filed by CPS Energy with PHMSA, which present more detail on the timing and nature of the leaks detected.

It is important to emphasize that managing leaks on a gas utility system is a normal part of the business, like electric utilities reviewing the performance of circuits or conducting vegetation management.

Reviewing these reports for the years 2017 through 2021 showed an increasing trend in the number of known leaks open for repair at year end, as shown in Figure 14, below.

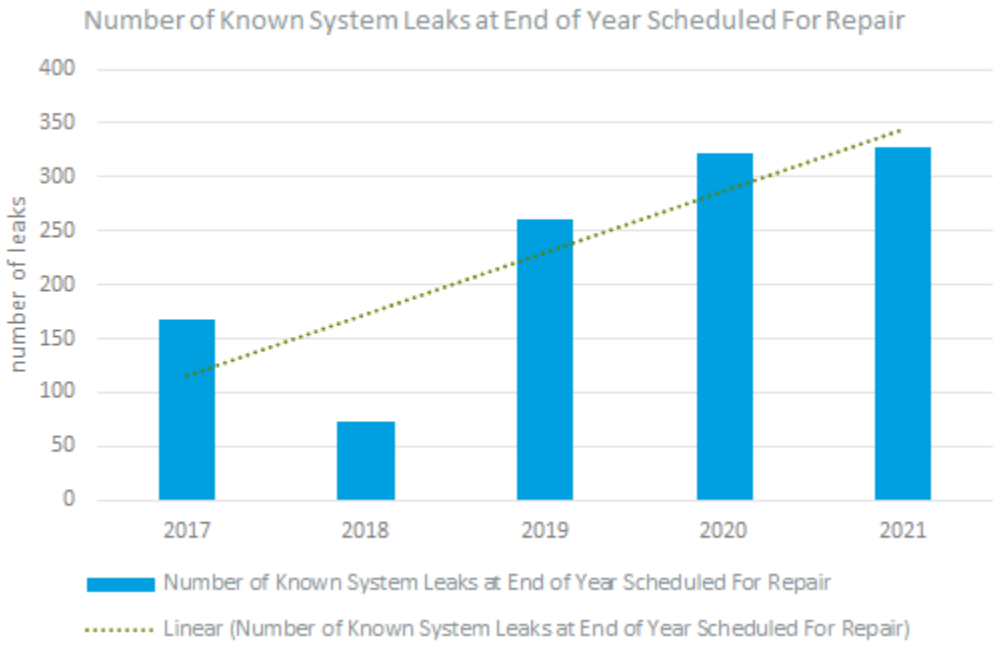

Figure 14. CPS Energy PHMSA Report for Known System Leaks at End of Year Scheduled for Repair, 2017 through 2021

Interviews with Gas Solutions provided additional context for this result: CPS Energy, in its quest to pursue a more comprehensive leak detection and repair program, over the last several years has deployed a sensor system that is more sensitive and thus picks up more leaks that other equipment might miss. This is an important enhancement to the program, especially given that the municipal area is densely populated, and residential growth continues apace.

We recognize the importance of this effort and note that it may be creating an increasing challenge for CPS Energy in keeping up with addressing known system leaks. A new Tier 1 metric that monitors the number of known system leaks at year end with the goal of reducing them to some level well below the current range of 200 to 300 as shown in Figure 15 would help CPS Energy manage the growing number of identified leaks.

Furthermore, regarding the overall results presented in PHMSA reports on leak trends, CPS Energy staff indicated that the annual leakage rate varies year-over-year based on the concentration of leak prone pipe over the 5-year leak survey inspection cycle. Acknowledging this important observation as an artifact of a multi-year cycle for pipeline inspections not uncommon across gas utilities, we suggest that CPS Energy try to normalize leak-prone pipe surveys more evenly over the course of the survey cycle, target replacement based on leak performance, and consider segment leak survey inspection cycles over a shorter time. Taking this opportunity to be more introspective about CPS Energy's leakage program could result in significant improvements in emissions and could also improve public safety by reducing emergency response frequency, and improve public relations and customer trust in CPS Energy.

These recommendations have implications for other aspects of the system, most importantly, the deployment of work teams to go into the field to make the necessary repairs in a timely manner, as well as preparation of the supply chain to meet a faster pace of repair. The increased potential workload dovetails with the concern raised during interviews that Gas Solutions needs to increase staffing by as much as 12 percent in the near term.

Observation – Leak management

Observation V-22. CPS Energy has experienced a trend over the past several years of an increasing number of known system leaks to be addressed. This has been attributed to an improved leak detection program, but, whatever the reason for this increase, meeting the increased leak workload represents an important area for Gas Solutions strategic planning in upcoming periods.

Recommendations – Leak management

Recommendation V-25. CPS Energy should develop a new Tier 1 metric to track gas leaks open for repair at the end of each year, with the goal of reducing know system leaks at year end to those that have been located and confirmed in the last 45 days of each year, helping to prevent the development of a leak repair backlog and reducing methane emissions.

Recommendation V-26. CPS Energy must normalize leak prone pipe surveys more evenly over the course of the survey cycle, target replacement based on leak performance, and consider segment leak survey inspection cycles over a shorter time period.

Recommendation V-27.CPS should investigate adding to Gas Solutions staff to address the leak repair and customer growth workload. This assessment should include consideration of potential savings if additional staff allow for reductions in contracted services and/or overtime.

VI. CUSTOMER ENGAGEMENT

A. Introduction

Aside from delivering electricity and natural gas, another major operational component of a utility's service includes relationships with and service to individual customers and playing a strong role in the community. A utility's "customer," broadly understood, includes people, institutions, governments, and businesses within its service area. In this context, customer engagement encompasses the utility's overall customer communications, interactions, and service.

A customer's first interaction with the utility occurs through various customer service and engagement activities. These include energy efficiency programs; updates on outages, restoration, and storm preparedness provided through social and traditional media; the utility website; and billing information and transparency, all of which CPS provides. CPS utilizes a variety of customer service and engagement tools to serve over 900,000 customers.[67]

An additional component of a utility's responsibility to customers is engagement with stakeholders. CPS serves several stakeholder groups, which include, but are not limited to, customer representatives, community service organizations, government departments, unions, trade organizations, environmental associations, and the media. Stakeholder engagement is an essential part of the operation of a utility. Stakeholders contribute to the utility's understanding of the current and future needs of customers and, if used effectively, can help ensure the utility's customer strategy meets the needs of their customer base.

CPS Energy's *Vision 2027* is a strategic plan with objectives that extend into the customer engagement portion of operations. CPS Energy has set objectives for both the customer experience and the community partnership and growth areas of their business, stating their aims to "connect with [CPS Energy's] diverse customers equitably and in the way they prefer" and to "work transparently and collaboratively to support key decisions, innovation and economic growth."[68] Showing its commitment to these goals, CPS Energy's FY2023 total budget allocates 11% to community partnerships and growth and

[67] CPS Energy, Vision 2027 an evolving utility, pg. 9. Available online at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Vision-2027-An-Evolving-Utility-Final.pdf.

[68] *Ibid.* pg. 6.

approximately 3% to customer experience.[69] These amounts translate to $66 million to promote customer and stakeholder engagement and a portion of an additional $93 million to support pieces of the strategic plan via legislative and regulatory special projects as it relates to CPS Energy's stakeholder groups.[70]

The remainder of this section provides our observations and recommendations with respect to customer engagement. As noted in Figure 15, a customer overview section discusses CPS Energy customers, City of San Antonio demographics, environmental justice, and energy burden, and then a customer engagement section captures CPS Energy programs, customer services interaction, and stakeholder engagement. This is the last of three perspectives offered in this review of CPS Energy (financial health, operational excellence, and customer engagement). One additional section after this discusses the cross-functional ERP transition.

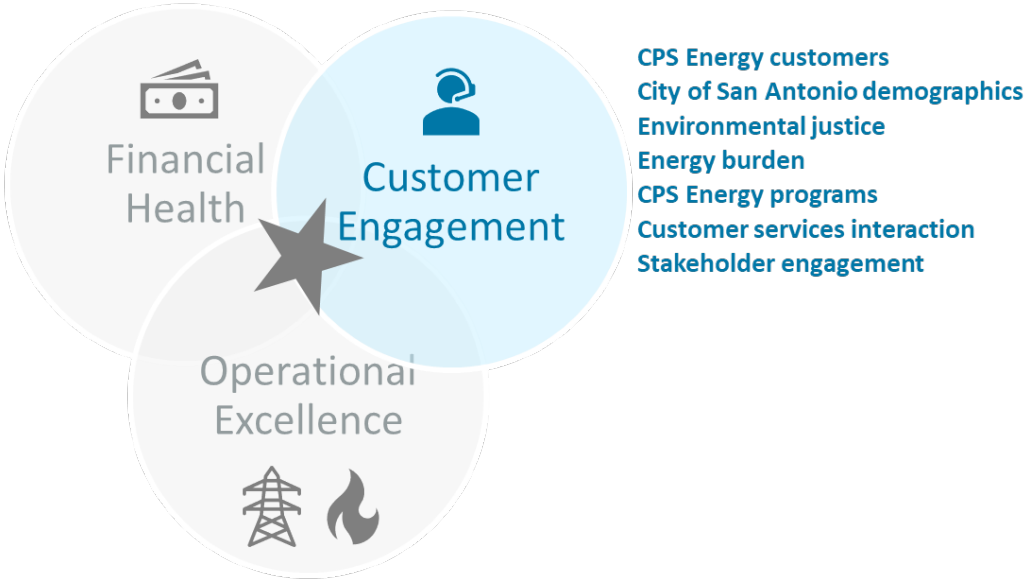

Figure 15. Customer engagement perspective of this review

69 *Ibid.*

70 January 31, 2022 Board Meeting for Posting slide 80 and 82. Available at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/January%2031%202022%20Board%20Meeting%20for%20Posting.pdf

B. CPS Energy customers

Customer overview

Daymark begins this portion of the operational review with an overview of the customer base served by CPS Energy. San Antonio and the San Antonio metropolitan area are experiencing significant growth in numbers of customers in all classes. The city is a target for technology firms to develop new facilities, aided by a relatively low cost of doing business and a talented labor pool. The economy is driving business and labor population growth that varies considerably from historic demographic and firmographic patterns. San Antonio's growth is concentrated in areas distinct from the older (in terms of both population age and infrastructure) sections of the city. In serving San Antonio, CPS Energy serves a large population of disadvantaged residential customers, including elderly and lower income customers.

The challenge has always been for CPS Energy, as with almost all utilities of any appreciable size, especially municipal utilities, to serve equitably the growth customers and the legacy customers, the prosperous and the disadvantaged, and an ethnically diverse population, all in a non-discriminatory manner.

Utilities have traditionally considered equity to mean targeting their programs and services to be uniform in nature and have wide availability. Equity had been measured at the meter. Today, more utilities are looking past the meter to define equity more broadly by considering differing customer circumstances—an approach that we see at CPS Energy, where many programs that consider individual customer circumstances have been implemented.

CPS Energy serves over 900,000 electric and approaching 400,000 natural gas customers. The municipal utility services customers within the city of San Antonio as well as customers in various other cities and towns within Bexar County. There are ten districts within the city of San Antonio, each with its own councilperson. In our review, we focused primarily on City of San Antonio (CoSA) customers and the ten San Antonio council districts.

Throughout the interviews that were conducted between Daymark and CPS Energy's customer engagement staff, CPS Energy emphasized the importance of its role in addressing local environmental and energy burden concerns in their service territory. The next two sections of this discussion examine how CPS Energy addresses these concerns.

Energy equity

Discussion

Energy equity is a term that may mean different things in different contexts. As it is used in this report, it refers to the idea that an entire population of customers should have equal access to reliable and affordable electricity and natural gas. The primary metric for this kind of energy equity is energy burden, which refers to the percentage of gross household income expended on energy costs. A multitude of factors can affect this, including the use of higher-cost fuels and the financial inability to upgrade homes to be more efficient. The American Council for an Energy-Efficient Economy (ACEEE) has recommended that energy costs should not exceed 6% of household income. In many areas of San Antonio, the energy burden percentage exceeds 25% and even trends upwards towards 100% for the lowest-income residential population.

The Brattle Group (Brattle) performed an analysis of CPS Energy's affordability and energy burden in 2021. Findings include that residential CPS customers, on average, experience a lower energy burden than average customers in Texas and the US (despite the fact that, on average, households in San Antonio are poorer than households in other major Texas cities), and energy burdens have been trending downwards since 2010.[71] These Brattle findings may indicate that CPS Energy programs targeted at low-income households have been effective at reducing energy burden; the utility should continue to explore programs and opportunities that reduce overall energy burden, especially for the lowest income customers. Figure 16, taken from the Brattle presentation, shows the average energy burden across Bexar County, with high concentrations in the center and southern regions of the county.[72]

[71] https://www.cpsenergy.com/content/dam/corporate/en/Documents/RAC/CPS%20Energy%20Burden%20(10-27-2021)_v2.pdf.

[72] *Ibid.,* pg. 26.

Average Energy Burden

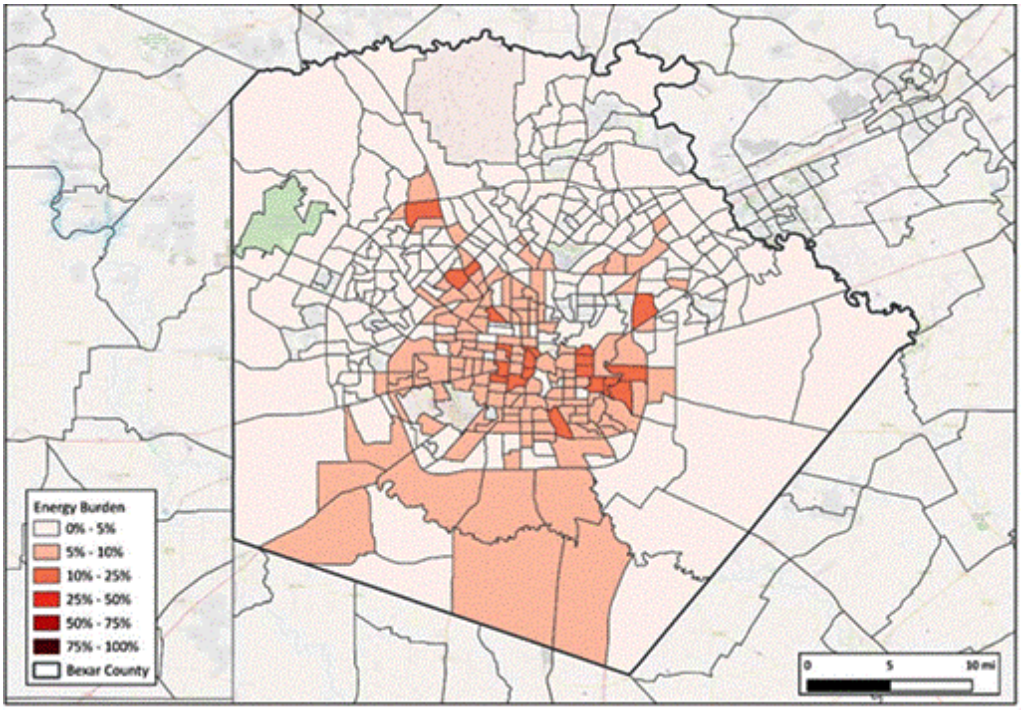

Figure 16. Map of average energy burden[73]

However, the following "Map of 1st Income Quintile Energy Burden" also from the Brattle presentation (see Figure 17), shows the energy burden of the 1st quintile, or lowest 20% of income, for the service area.[74] This indicates that among that population, there are significant portions with energy burden in excess of the ACEEE threshold, at 10-25% energy burden, and even areas in excess of 25%. These two figures show that uniform pricing, programs, and services across the residential population, a utility staple, are not appropriate for addressing energy burden.

73 *Ibid.*, pg. 26.

74 *Ibid.*

1st Income Quintile Energy Burden

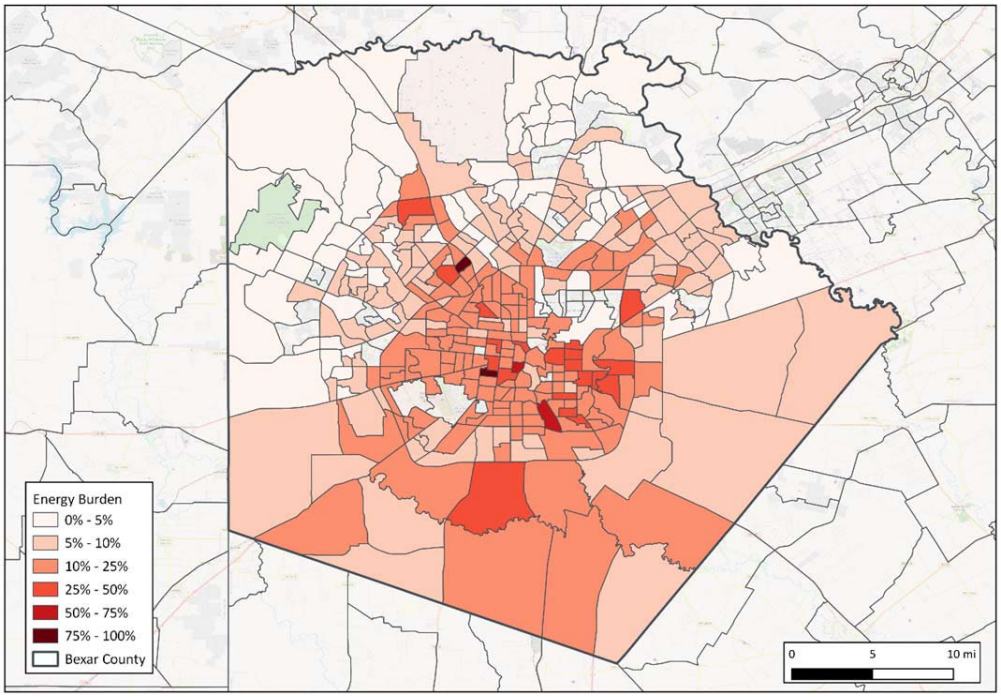

Figure 17. Map of 1st Income Quintile Energy Burden[75]

As discussed later in this Customer Engagement section, many programs at CPS Energy target low income, elderly, or other disadvantaged groups can reduce energy burden, even though their origins were not driven by energy burden as a specific driver.

CPS Energy does have a special pricing initiative, Affordability Discounts (ADP), advertised on its website. Qualification for this program is established through a gross monthly income threshold that varies with family size. Qualifying customers must have income less than 125% of federal poverty guidelines plus must meet any of the following criteria:

- Be 60 years old or older
- Have a disability
- Use life-sustaining medical equipment
- Have pre-school aged children or school children aged 18 and under

75 *Ibid.*

- Have extenuating circumstances as determined by CPS Energy or the City of San Antonio

The Affordability Discounts Program qualifies a combined electric and gas customer for an annual discount of just under $200. This pricing program is an example of how CPS Energy's approach to energy equity does not treat all customers the same, but instead clearly looks at the customer beyond the meter.

Observations – Energy equity

Observation VI-1. Brattle's 2021 analysis found that residential CPS customers, on average, experience a lower energy burden than the average customer in Texas and the US, and energy burdens have been trending downwards since 2010. This may be an indicator that CPS Energy programs targeted at low-income households have been effective at reducing energy burden.

Observation VI-2. Brattle's map analysis of San Antonio shows that uniform pricing, programs and services across the residential population, a utility staple, is not the remedy to address energy burden.

Observation VI-3. CPS Energy's programs to address San Antonio's low-income community create significant savings for their customers and demonstrate that CPS Energy perceives their customer as more than just a meter.

Recommendation – Energy Equity

Recommendation VI-1. CPS Energy should continue its stewardship, focusing on relieving energy burden through customer programs and rate design focused on the lowest 20% income strata of its customer base.

C. CPS Energy programs

Programs overview

Discussion

The staff and executives involved with the key aspects of Customer Engagement for CPS Energy are highly motivated, caring, and engaged individuals creating departments that function with high energy and passion for helping each customer. CPS Energy has a wide breadth of programs in place that target a broad range of their customer base, including programs for energy efficiency and renewables, demand response programs, financial assistance programs, and outreach initiatives. Figure 18, below, illustrates just how many programs are in place. These are separated into five major program categories: Step/FlexSTEP, Low-Income, Senior Citizens, Disabled Citizens & Critical Care, and Outreach. In the discussion that follows, we examine a number of these programs in

detail. In general, what we observed is that CPS Energy's team is highly sensitive in responding to new customer needs presented to them, and they have developed an expansive array of programs that serve many customers. However, CPS Energy's prioritization of customer assistance and outreach programs is very reactive to outside guidance, including guidance from government officials and requests from community leadership. As a result, CPS Energy's efforts can be characterized as reactive, rather than as strategically designed and informed by the kind of in- depth customer analyses which is necessary to develop programs that are truly customer-driven.

Figure 18. CPS Energy Programs

Observations – Programs overview

Observation VI-4. The customer organization, in several departments, function with high energy and passion for helping each customer.

Observation VI-5. **CPS Energy's team is highly sensitive in responding to new customer needs presented to them.**

Observation VI-6. **Prioritization of customer and stakeholder engagement activities is more reactive than strategically customer driven.**

Observation VI-7. **Customer Service programs are expansive, touching many customers, in the area of energy efficiency, solar energy, customer assistance and customer outreach.**

Recommendation – Programs overview

Recommendation VI-2. Integrate the benefits of energy efficiency, customer sited renewables, environmental justice and energy burden programs into resource planning processes to determine right-size funding.

Save for Tomorrow Energy Plan (STEP) program

Discussion

The Save for Tomorrow Energy Plan (STEP) is a program that is based on detailed studies and economic analyses that consider customer energy usage, purchase habits, technology access, and needs. STEP was established in 2009 as an organized way to meet San Antonio's goal of saving 771 MW of electricity demand by 2020, with a maximum budget of $849 million.[76] As of 2019, STEP surpassed its original goal, reaching 1.4 TWh of electricity savings at a cost that was approximately 15% below budget. Additionally, the program was found to have added value to the community by adding approximately 680 jobs annually and provided over $553 million in net benefits.[77]

Also included in the STEP Program Review report is a heat map that illustrates cost effectiveness for each program within STEP, via the Utility Cost Test (UCT) ratio.[78] This heat map has been adapted and is included below as Table 8. It is important to note that the origin of CPS Energy's energy efficiency programs is in customer service—the program is not a product of integrated resource planning, where reductions in demand and energy needs are considered direct alternatives to new or existing generation and transmission resources.

The utility's recent resource planning exercise considered several metrics and cost considerations that go beyond the Utility Cost analysis of the Step Program components. These factors included environmental and socio-economic impacts. We found the

76 STEP Program Review, November 2019, pp. iv.

77 *Ibid.*

78 *Ibid.*

stakeholder involvement and multidimensional metrics for decision making used in the STEP program planning process to be among the best practices in the utility industry today.

Table 8. STEP Program Heat Map Results[79]

Category	Sector	Program	Average Cost-Effectiveness (Utility Cost Test Ratio)
Energy Efficiency	*Residential Energy Efficiency*	Residential Lighting	1.0
		Home Efficiency	2.0
		Residential HVAC	3.2
		Air Flow Performance	0.7
		New Home Construction	3.8
		Refrigerator Recycling	1.9
		Weatherization	0.7
		WashRight	0.8
		New Home Construction - Franklin	1.4
		Retail Channel Partnerships	2.5
		AC/Duct Tune up	1.0
		Energy Savings Through Schools	1.1
		Home Energy Assessments	0.8
		Multi-Family	1.8
		Cool Roof	1.5
		Residential Efficiency Total	***1.4***
	Commercial Energy Efficiency	Large Lighting	2.8
		Commercial HVAC	2.6
		Commercial New Construction	5.2
		Commercial Custom	3.3
		LED Street Lights	1.1
		Roof Coating	0.9
		Restaurant Equipment	0.0
		Lean Clean Energy	0.0
		Commercial Solutions	3.3
		Schools & Institutions	2.0
		Small Business Solutions	3.5
		Whole Building Optimization	0.8
		Commercial Efficiency Total	**2.9**
		Efficiency Total	***2.0***
Solar	*Residential Solar*	Community Solar	0.7
		Solar Host SA	0.4
		Solar Initiative	1.8
		Residential Solar Total	**1.8**
	Commercial Solar	Solar PV	1.7
		Commercial Solar Total	**1.7**
		Solar Total	***1.8***
Demand Response	*Residential Demand Response*	Smart Thermostat	2.5
		Home Manager	1.2
		Bring Your Own Thermostat	4.2
		Window AC DR	0.1
		Nest Direct Install	3.1
		Behavioral DR	2.7
		Residential DR Total	**2.1**
	Commercial Demand Response	Emergency DR	4.4
		Commercial DR	1.8
		Auto DR	1.3
		Commercial DR Total	**1.8**
		DR Total	***2.0***

[79] Table shows average UCT ration for FY2012-FY2019. Table is adapted from STEP Program Review, November 2019, Appendix E: Cost-Effectiveness Heat Maps, p.64 (available online at STEP Program Review, November 2019).

Any programs with a UCT above 1.0 are considered cost effective (per $1 invested in a program, that program results in $1 of benefit) and those below 1.0, in general, are considered cost prohibitive (i.e., they cost more to implement than they realize in benefits). It is often the case that programs targeted at low-to-medium income customers have comparatively low UCTs. For example, the CPS Energy Weatherization Program ("Casa Verde") has a UCT of 0.7; however, programs such as this may be vital to realize energy savings among target customer groups.[80] As of February 10, 2023, 30,000 homes throughout the community had been weatherized as a direct result of Casa Verde. CPS Energy estimates that the program saves participating customers ~$450 per year in energy costs.[81]

Some programs have a high UCT (for example, the residential New Home Construction program, which has an average UCT of 3.8). These high UCT programs can help to make valuable but more cost prohibitive programs more feasible. The overall UCT averages (from a period of 2012-2019) for the efficiency programs, solar programs, and demand response (DR) programs were 2.0, 1.8, and 2.0, respectively.

While many utilities and their regulators have endorsed the UCT as appropriate, some jurisdictions incorporate costs and benefits beyond the utility, referred to as externalities, including environmental impacts and the resulting cost impacts to society for mitigation and/or a monetary value assigned to health effects, water consumption, participating customer investment, and even the value of customer comfort.

The results of the UCT analysis indicate that STEP has been widely successful for CPS Energy. In February 2022, Brattle performed an assessment and benchmarking of the STEP Program, which also found that STEP is a beneficial and cost-effective approach to reducing electricity demand, providing cost savings to customers, and improving resiliency in the face of extreme weather events such as Winter Storm Uri.[82] Included in this assessment were the results of a survey of residential and business customers, which indicated that only 54% of residential and 50% of business customers were aware of the STEP program. Of the residential customers that do not participate in STEP, 72%

80 STEP Program Review, November 2019, pg. 64 (https://www.cpsenergy.com/content/dam/corporate/en/Documents/STEP%20Review%20Report_19-11-1.pdf)

81 News Release, February 10, 2023 (https://newsroom.cpsenergy.com/cps-energys-casa-verde-weatherization-program-celebrated-milestone/).

82 Assessment and Benchmarking of CPS Energy's STEP Program, February 2022 (https://www.cpsenergy.com/content/dam/corporate/en/Documents/FINAL_CPS_STEP_ProgramAssessment_FullReport(2-14-2022).pdf).

indicated that this was due to a lack of awareness of STEP programs.[83] It is unclear what would be found if the survey were replicated in 2023, but additional involvement by all customers will be necessary to continue to drive STEP forward.

The first phase of the STEP program was initially planned to conclude in 2020, but because of its success, the CPS Energy Board of Trustees and the City of San Antonio City Council ("City Council") extended STEP with a program called STEP Bridge in January 2020, with the goal of achieving an additional 75 MW of energy savings.[84] Going into 2021, after the impact of COVID-19, another year-long extension of the program was approved to gather additional feedback and input from stakeholders and the public. Most recently, in 2022, the Board and City Council approved funding of $350 million to continue STEP for 5 more years.[85] This includes "community solar and other solar offerings for more low-to-moderate income customers; energy storage; electric vehicle (EV) charging; educational curriculum to promote behavioral changes towards energy conservation; demand response in the form of technology like smart thermostats both in homes and businesses; and support for the commercial sector to become more efficient through traditional energy efficiency rebates and other new programs" to reach the program goals of 410 MW of energy demand reduction, 1% energy savings per year across the entire system, and 1.85 million tons of avoided carbon.[86]

As the STEP program has evolved, it has transformed into FlexSTEP, and CPS Energy has continually engaged with stakeholder groups and the public to consider recommendations and promote constructive dialogue.[87] As an example, CPS Energy frequently communicated with a nonprofit environmental group, the Sierra Club, throughout the first half of 2021 to gather more feedback and suggestions on STEP and the FlexSTEP RFP.[88]

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83 Assessment and Benchmarking of CPS Energy's STEP Program, February 2022, pg. 8 (https://www.cpsenergy.com/content/dam/corporate/en/Documents/FINAL_CPS_STEP_ProgramAssessment_FullReport(2-14-2022).pdf).

84 CPS Energy FlexSTEP RFP Page (https://www.cpsenergy.com/en/work-with-us/procurement-and-suppliers/flex-step-rfp.html).

85 News Release, February 10, 2023 (https://newsroom.cpsenergy.com/cps-energys-casa-verde-weatherization-program-celebrated-milestone/).

86 *Ibid.*

87 Stakeholder Engagement Webpage (https://www.cpsenergy.com/content/corporate/en/about-us/stakeholders.html).

88 Response to Greg Harman of Sierra Club, March 18, 2021 (https://www.cpsenergy.com/content/dam/corporate/en/Documents/Stakeholder/Response%20to%20Greg%20Harman-letter%20dated%20March%203%202021.pdf).

Overall, the STEP program has been successful. CPS Energy has set achievable goals for itself and ultimately realized those goals and extended the program multiple times. CPS Energy has also been receptive to stakeholder and customer feedback to improve the program and tracks various pieces of relevant data to evaluate their success and iterate as necessary.

Observations – STEP program

Observation VI-8. **STEP's design reflects a thorough analysis of customer needs, program delivery costs and benefits, and electric generation costs.**

Observation VI-9. **CPS Energy's recent resource planning exercise considered several metrics and cost considerations beyond the Utility Cost analysis of the STEP Program components, including addressing environmental and socio-economic impacts. This reflects industry best practice.**

Observation VI-10. **Based on the results of the Utility Cost Test (UCT) ratio, CPS Energy's STEP program demonstrates overall cost-effectiveness. CPS Energy has worked closely with a diverse set of stakeholders to address feedback provided on the STEP and FlexSTEP RFP.**

Observation VI-11. **Based on the results of the 2022 Brattle survey, there may be an opportunity increase awareness of STEP programs.**

Recommendation – STEP program

Recommendation VI-3. **Continue to ensure that there are plenty of programs within STEP that target LMI, senior citizen, and disabled citizen customers and target more outreach to these customers to increase enrollment; improve energy efficiency in households that otherwise may not have the ability to participate; and, as a result, lower these customers' bills.**

Energy assistance programs

Discussion

Most of the remaining programs CPS Energy has in place can be categorized as assistance programs. These include programs targeted at low-income, senior citizen, and disabled citizen customers. Table 9 below outlines the various programs in place and their respective intended customer segments.

Table 9. CPS Energy Assistance Programs

Category	Sector	Program
Financial Assistance	*Residential LMI*	Affordability Discount Program
		Residential Energy Assistance Program (REAP)
		ARPA Funds
		Budget Billing Program
		Due Date Extension
		Flexible Installment Plans
		CPS Energy Angels
	Residential Senior	Senior Citizen Billing Program
		Senior Citizen Late Fee Waiver
	Residential Disabled Citizens	Disabled Citizens Billing Program
		Critical Care Customer Program
		Burn Injury Discount Program

In general, Daymark observed that the assistance programs in place seem reasonable; however, it is unclear how exactly CPS Energy measures the success of these programs. In STEP, the cost effectiveness, budget, and stakeholder engagement assessments have been publicly reported. With the assistance programs, however, the cost effectiveness, budget per program, customer feedback and perception of the programs, and overall enrollment have not been clearly presented. During interviews with customer engagement staff, it was made clear that data related to their programs are being tracked. In fact, the impression was given that data was overwhelmingly abundant; however, the team has been struggling to use this information meaningfully because of the severe administrative burden that managing this amount of information causes—a problem that is intensified by CPS Energy customer-facing resources continually being directed by the Board and City Council to implement additional programs, to the point that previously-implemented programs cannot be evaluated for success--a pattern of being reactive to customer needs, rather than taking a more measured, strategic approach.

Observations – Energy assistance programs

Observation VI-12. Daymark has observed that the assistance programs in place are reasonable; however, it is not clear how exactly CPS Energy measures the success of these programs. Information on customer feedback, perception of the programs, and overall enrollment has not been clearly presented.

Observation VI-13. It is Daymark's perception that, while data is abundant, it is challenging for the team to implement the use of the data because of administrative burdens. This is a result of CPS Energy being reactive with customer-facing resources, ultimately reducing the team's ability to evaluate program success.

Recommendations – Energy assistance programs

Recommendation VI-4. CPS Energy should identify key pieces of data for each program that can inform its progress and success. By closing the resource gap to allow more data gathering and prioritization, CPS Energy could compare the many programs in place and ultimately evaluate program success in terms of delivering value to the direct customers and to the CPS Energy system. Better data tracking will allow cross program evaluation of the cost of implementing and running the programs, the number of customers enrolled in each program, change in customer involvement after an outreach event, the impact these programs have on arrearage, involvement per program per district, etc.

Recommendation VI-5. Energy Assistance programs should be given clear goals to track progress (e.g., reduce arrearage by some percent). From our observations, there are no goals in place that address enrollment, impact, customer satisfaction, etc. with relation to these programs. Further, customer perception of programs is not something publicly available or seemingly tracked through customer surveys. The impact of these programs can be improved with the implementation of clear goals and customer feedback to ensure that customer voices are taken into consideration.

Recommendation VI-6. Management, the Board, and the City Council should ensure that programs are being implemented with staff administrative capacity in mind, via informed conversations and communication. It is important to ensure that customer engagement staff are not administratively overburdened and can give adequate attention to the various already-existing programs, before implementing additional programs.

Recommendation VI-7. CPS Energy should ensure the community knows the extent of community assistance programs and benefits.

Outreach programs

Discussion

Table 10 outlines the various outreach efforts that the customer engagement team has been involved with over the past few years.

Table 10. CPS Energy Outreach Programs

Category	Sector	Effort
Outreach	*Residential General*	Community Events
		Neighborhood Visits / Block Walking
		Door Hangers
		Phone Calls
	Residential LMI	ARPA Events
		Utility Assistance Fairs

Through interviews with CPS Energy customer engagement staff, we observed that these outreach events can have a high administrative burden due to the request of the Board and City Council to indiscriminately apply outreach efforts across all districts and customer segments. This points to another opportunity to take a more strategic, rather than reactive, approach. Additionally, some outcomes of these outreach efforts were tracked and publicly reported, such as number of neighborhoods visited, number of door hangers hung, number of events, etc., while some were not.

We recommend that events that are primarily for the benefit of low-income customers be focused in areas of high energy burden and districts with high arrearage rates. Some presentations indicate that this is the case; however, interviews have suggested that this kind of targeting does not always occur. While there may be benefits to these kinds of outreach efforts in all areas of San Antonio, interviews with CPS Energy customer engagement staff indicate that this kind of a comprehensive approach is administratively burdensome and extremely time consuming. Targeting outreach efforts towards the customer groups that the programs are intended for can improve efficiency while allowing staff to give adequate attention to the other vital moving pieces of their department.

CPS Energy's programs are ripe for integration and optimization and could be coordinated with a comprehensive strategy to address energy equity goals.

Observations – Outreach programs

Observation VI-14. Through interviews with CPS Energy customer engagement staff, we observed that outreach events can have a high administrative burden due to the request of the Board and City Council to indiscriminately apply outreach efforts across all districts and customer segments.

Observation VI-15. CPS Energy has not had the staffing, data and tools to develop an understanding of evolving customer expectations for electric and natural gas service interruptions and, power quality and even resiliency, including how that varies within the service territories diverse demographic and firmographics.

Recommendations – Outreach programs

Recommendation VI-8. CPS Energy should invest in the resources necessary to connect the data of its billing system, customer surveys such as customer satisfaction, and program participation to enable analytics on customer needs to begin driving Company-wide operations.

Recommendation VI-9. CPS Energy needs to control ad hoc customer program requests and expectations for immediate implementation in order to strategically

optimize program prioritization based on the analytical determination of customer needs and value.

Recommendation VI-10. Events that are primarily for the benefit of low-income customers should be focused in areas of high energy burden and districts with high arrearage.

Recommendation VI-11. CPS Energy should implement a way to measure the success of their outreach efforts. This could take the form of analyzing how customer involvement/enrollment in programs changes after outreach events, or how customer satisfaction in these areas changes after outreach events.

D. Customer service

Call centers

Discussion

CPS Energy maintains customer service centers staffed with Energy Advisors to provide customers with timely and helpful responses to their queries. CPS Energy provided Daymark with statistics from the customer service centers from the period of February 2021 through September 2022, a total of twenty months. CPS Energy's data shows a range of call volumes, from a peak in February 2021 of approximately 800,000 calls to a low of 178,922 calls in January 2022. CPS Energy averages approximately 233,000 calls per month (excluding the February 2021 polar vortex month).

Calls are reported as being handled in four different ways. The primary method of handling calls by monthly volume is through the use of Interactive Voice Response (IVR). CPS remarks in the data that IVR are calls made to a customer service number that did not result in transfer to an Energy Advisor. About 47% of calls in a given month are handled via IVR. The next major method of handling customer calls is via Energy Advisors. Energy Advisors handle approximately 42% of all calls in a month. Finally, the High Call Volume Answering (HCVA) service and Abandoned Calls are third and fourth most utilized methods, averaging 5% and 3% respectively. The HCVA average excludes the February 2021 event, during which 74% of calls during that month were handled in the HCVA category.

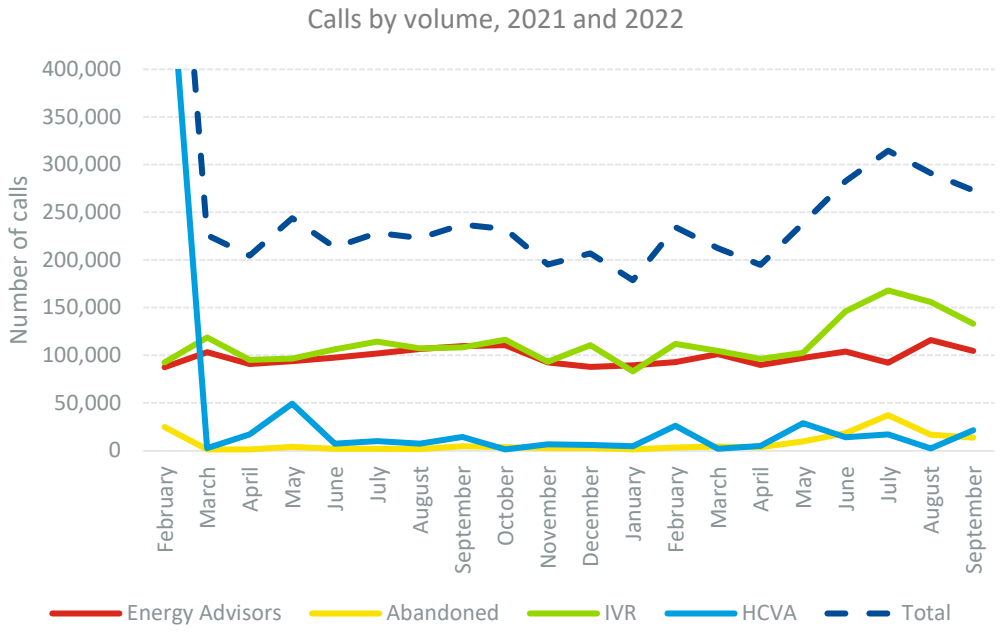

Figure 19. Calls by volume

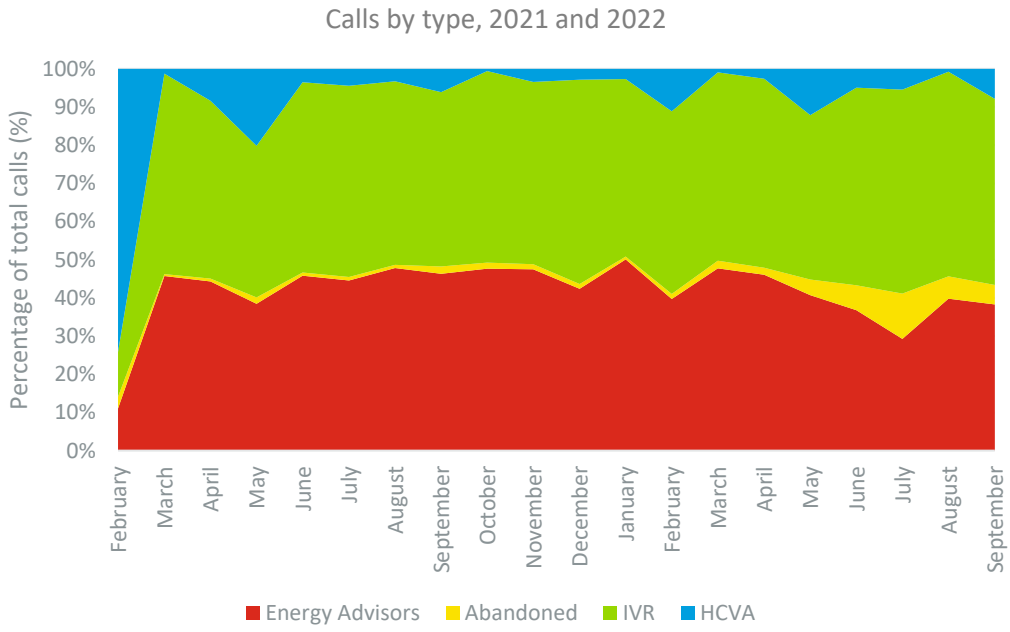

Figure 20. Calls by type

The data also demonstrates certain trends that may be negatively impacting customer satisfaction among CPS Energy constituents. For example, the "speed of answer," "average handling time," and "abandon rate" metrics provided are trending longer to answer and longer to handle, and potentially that combination is leading to higher abandon rates by customers. As one might expect, speed of answer and abandon rate are highly correlated.

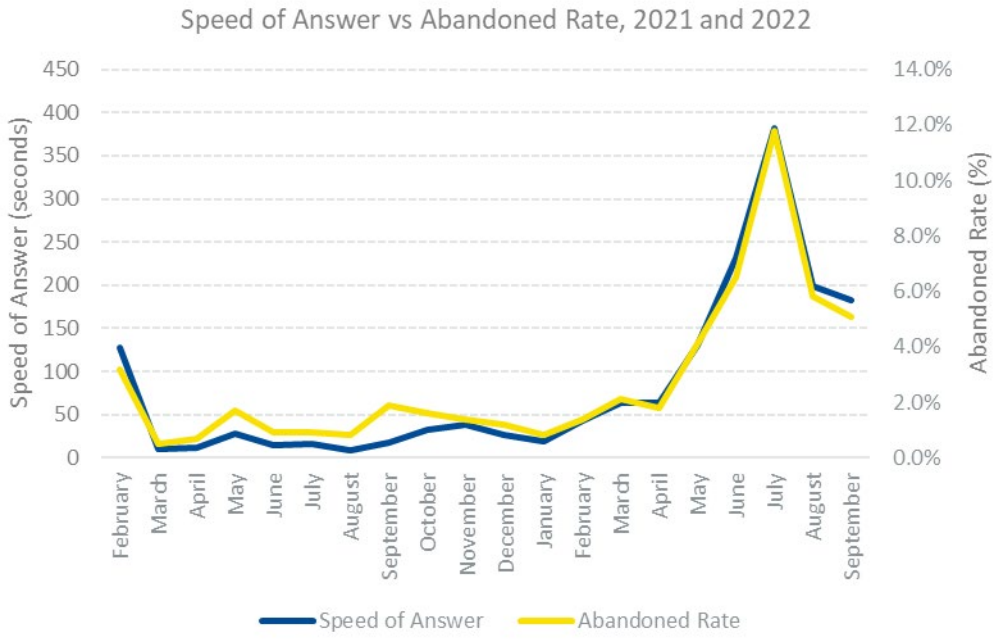

Figure 21. Speed of answer versus abandoned rate, 2021 and 2022

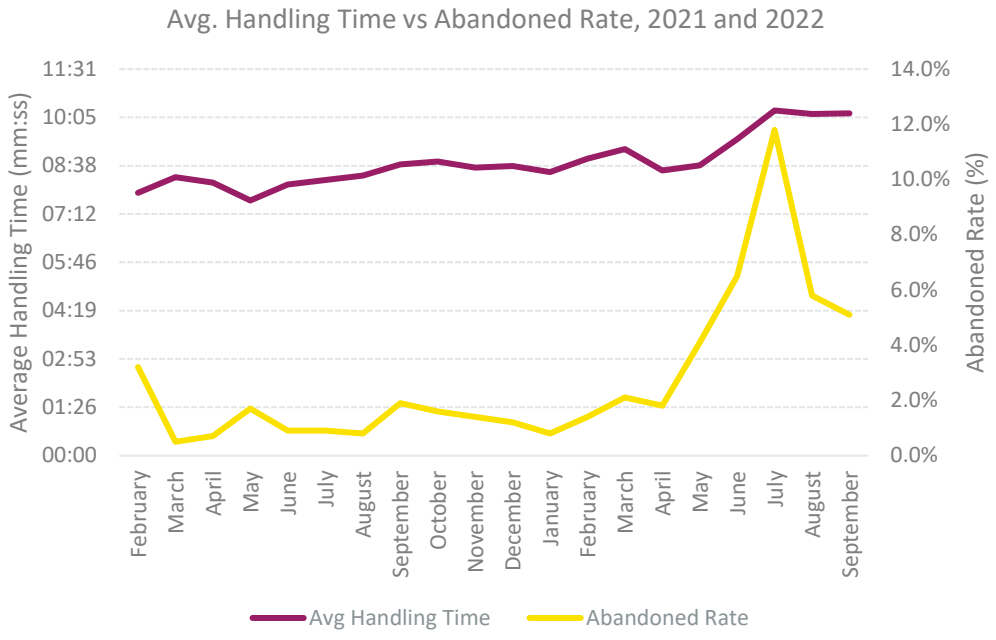

Figure 22. Average handling time versus abandoned rate, 2021 and 2022

Given the worsening of these metrics, CPS Energy's own "Service Level" metric fell from a high of 93% in August of 2021 down to a low of 25% in July 2022, before recovering to 45% in September 2022. Unsurprisingly, Service Level follows the Speed of Answer and Abandon Rate in an inverse relationship.

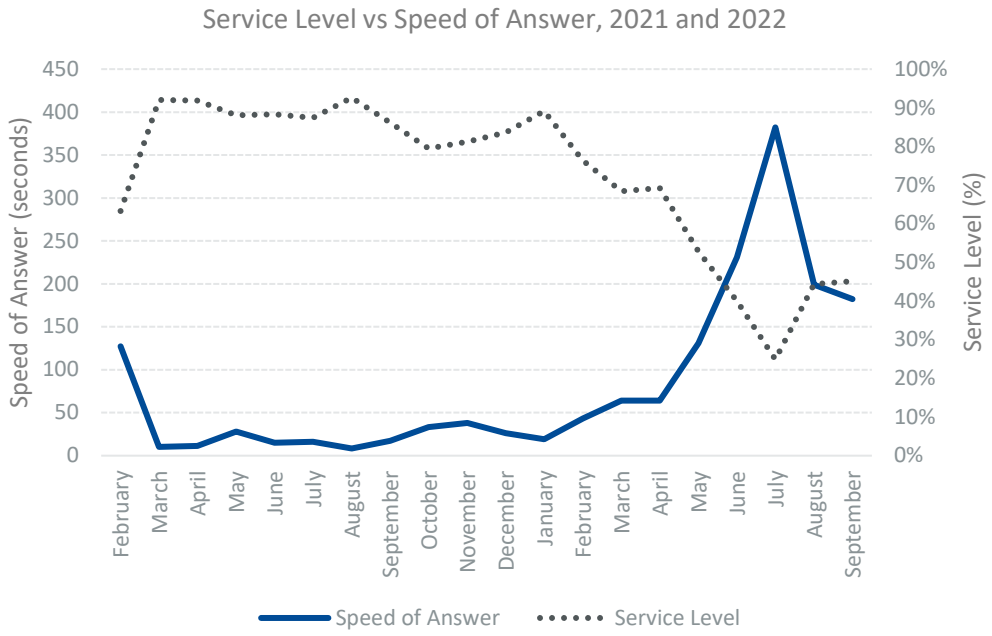

Figure 23. Service level versus speed to answer

Observations – Call centers

Observation VI-16. Calls are reported as being handled in four different ways. The primary method of handling calls by monthly volume is using Interactive Voice Response "IVR." The next major method of handling customer calls is via the Energy Advisors. Finally, the High Call Volume Answering (HCVA) service and Abandoned Calls are third and fourth most utilized methods.

Observation VI-17. The "speed of answer" and the "abandon rate" are very closely correlated. CPS Energy saw increases in both over the summer, and these metrics have not returned down to their previous levels.

Observation VI-18. CPS Energy's "Service Level" decreased from January to July 2022. "Service level" follows the "speed of answer" and the "abandon rate" in an inverse relationship.

Recommendations – Call Centers

Recommendation VI-12. CPS Energy should assess the impact and root cause of the increasing customer call center response times being experienced and plan for appropriate remedies.

Key Accounts

Discussion

The Key Accounts group provides a single point of contact for new accounts and large existing accounts. Customer assignments to the "key accounts" category are not based on meter, but rather on the overall usage of a customer across all that customer's accounts--a modern definition of customer, as opposed to the traditional equation of individual meters with individual customers. This CPS Energy approach is more consistent with how customers think of themselves. This group also includes the design of new services for commercial, institutional, and industrial customers. The group has an extremely large workload and utilizes several outside firms to design new customer service connections. The timetable to complete an individual customer's request for service is several months, resulting in an anecdotally noted certain degree of customer impatience. While it is not evident that any of this has caused any measurable economic harm or customer backlash, the CPS Energy timetable for new services has the potential to be harmful to the economic development of its service territory and to damage the city's business friendly persona.

Observations – Key Accounts

Observation VI-19. The Key Accounts group provides a single point of contact for new accounts and large existing accounts at the customer (not meter) level, providing evidence of CPS Energy's orientation towards perceiving their customers beyond the meter.

Observation VI-20. The timetable to complete an individual customer's request for service is several months, which could be harmful to economic development in its service territory.

Recommendation – Key Accounts

Recommendation VI-13. CPS Energy should study possible reengineering, including how to optimize staffing levels versus outside contractor utilization, to reduce its lead time requirements for new service requests.

E. Customer communications

Bill design

Discussion

As part of our review, Daymark reviewed the current format of the bill sent to customers. The CPS Energy customer bill is a simple documentation of customer usage, rates, and charges. The CPS Energy bill provides the minimum information on customer

energy usage that could help a customer gain perspective on their consumption, which is a bar chart of monthly consumption, comparing the current month to the prior twelve months. The only other information provided compares the current month's usage to the previous month. Information on energy usage can be instrumental in helping customers begin to manage their consumption. Many utilities provide several additional pieces of information that could help a customer consider their consumption, such as the following:

- Average daily temperature, which enables customers to assess whether the change from last year or last month was primarily due to increased/decreased heating or cooling requirements.
- Comparisons to other customers (high, average, and low usage) in the immediate area (likely similar dwellings) to allow customers to consider whether there may be an opportunity to conserve energy or increase energy efficiency.
- Targeted suggestions for how to identify potential inefficient equipment that may be in use or potential behavioral changes that could save energy.
- Suggestions on energy efficiency or customer assistance programs that may be appropriate.

In addition to the potential benefits of providing more information to customers about their own usage, there may be opportunities to provide additional contextual information on customer bills that would benefit CPS Energy's overall customer relationships. In our interview discussions with CPS Energy staff ranging from senior management to functional managers, there was a consensus that customers would appreciate CPS Energy more if they were more educated on how CPS Energy conducts its business and the challenges that are faced. Potentially, bills could be used to convey information regarding external factors affecting CPS Energy costs, such as the cost of fuel, ERCOT energy prices, system performance, the share of revenue that is paid to the City, or new clean energy projects entering service, which might help customers to understand changes in their bills and/or recognize benefits that CPS Energy provides.

Observations – Bill design

Observation VI-21. CPS Energy's current bill format is a very simple representation of customer usage, rates, and charges.

Recommendations – Bill design

Recommendation VI-14. **CPS Energy should develop a Bill Format Modernization initiative that begins with mining and analysis of customer data from the many programs and surveys routinely conducted.**

Recommendation VI-15. **If there are limits on the bill format capability due to current systems, the need should be identified as quickly as possible for incorporation into the ERP specifications.**

Recommendation VI-16. **In addition to information on customer energy usage, CPS Energy should consider providing information regarding external factors affecting CPS Energy costs, such as cost of fuel, ERCOT energy prices, system performance, share of revenue that is paid to the City, or new clean energy projects entering service.**

CPS Energy website

Daymark found that the CPS Energy website is easy to navigate and provides good communication with customers. Daymark did not pursue further investigation and has no recommendations in this area.

Observation – CPS Energy website

Observation VI-22. **Daymark found the CPS Energy website is easy to navigate and communicates well with customers.**

Social media

Discussion

One communication outlet that is increasingly important is social media. Providing a quick communication outlet to customers, stakeholders, and those in the service area, social media can be a daily touchpoint with customers for a utility. CPS Energy is active on all major social media platforms, including Twitter, Facebook, Instagram, and LinkedIn, as well as an additional platform called Newsroom. Each of the traditional social media platforms are used to inform customers and community groups about customer support programs, outages, meeting notices, energy conservation tips, etc. Additionally, CPS Energy uses the platforms to communicate directly with customers by responding to customer questions and concerns.

CPS Energy utilizes Newsroom, a unique platform to CPS Energy among comparable utilities, to communicate through a blog about CPS Energy-focused news releases and to share their ENGAGE Newsletter with the public. As distinct from the CPS Energy website, the Newsroom platform is customer centric in that it provides information on CPS

Energy in the community, opportunities for involvement, and outage reports and updates, as well as stories about CPS Energy employees, partners, and customers.

As illustrated below, CPS Energy excels in the social media market, with activity on more platforms than other, comparable utilities across Texas and the United States.[89] We have no recommendations in this area.

Table 11. Social media presence of CPS Energy and comparable utilities

Utility	Facebook	Instagram	LinkedIn	Twitter	YouTube	Newsroom
CPS Energy	✓	✓	✓	✓	✓	✓
Austin Energy	✓			✓	✓	
El Paso Electric	✓	✓	✓	✓	✓	
Lubbock Light and Power	✓			✓	✓	
Potomac Electric Power Company	✓	✓	✓	✓	✓	
Idaho Power Company	✓	✓	✓	✓	✓	

Observation – Social media

Observation VI-23. CPS Energy is active on all major social media platforms including Twitter, Facebook, Instagram, LinkedIn as well as an additional platform called Newsroom. When compared to peers, CPS Energy excels in the social media market, with activity on more platforms than other comparable utilities across Texas and the United States.

F. Customer satisfaction

Discussion

As noted previously in this report, the staff and executives involved with the key aspects of Customer Engagement for CPS Energy are highly motivated, caring, and engaged individuals. This sadly has not driven, nor is it an exclusive requisite for, high customer satisfaction.

[89] Austin Energy https://austinenergy.com/about; El Paso Electric https://www.epelectric.com/ ; Lubbock Light and Power https://lpandl.com/ ; Potomac Electric Power Company https://www.pepco.com/Pages/default.aspx ; Idaho Power Company https://www.idahopower.com/.

Figure 24. Customer satisfaction by customer class

Customer satisfaction consistently trended downwards in the period we reviewed, with the most severe downturn occurring among the residential class in Q3 of 2022. Despite that, residential customer satisfaction has bounced back in Q4, although not quite to previous levels.

Among the Residential classes, all metrics in the survey fall – or rise – in very correlated ways. Ranked among other questions, CPS Energy's corporate citizenship consistently measures highest (or near highest) among residential customers. Conversely, CPS Energy scores the worst at "working hard to control costs." The ordering of these metrics, particularly in the later few quarters, in which the survey provided further separation among the questions, shows that customers would generally say that CPS Energy is a well-intentioned company that not all customers perceive as being well-managed, and that some customers perceive as not focused on controlling costs. The strong correlation of these specific views on CPS by residential customers may suggest that these ratings may be being driven by other factors not readily identifiable with the questions or survey design.

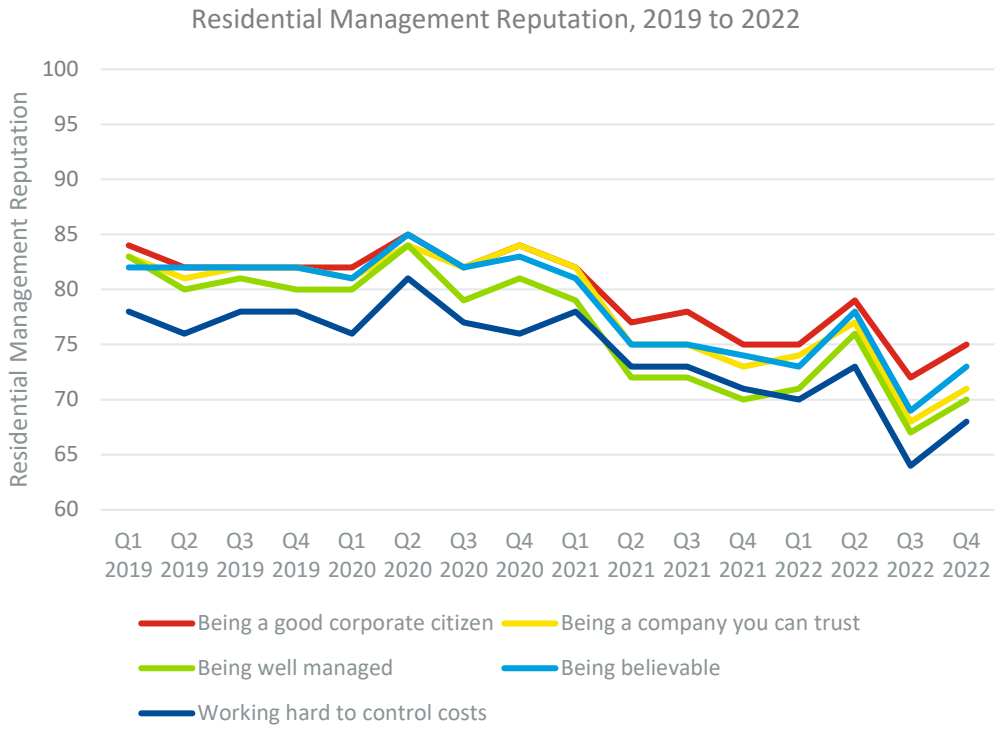

Figure 25. Residential management reputation

Daymark requested the specific questions asked during the customer satisfaction survey and received the script/programming used by the survey. The survey includes questions about whether a customer has contacted a CPS Energy call center and follow-up questions about how the customer would rate that interaction. However, questions that connect customer "touches," such as a call to a customer service center, and the customer's subsequent satisfaction with that call - and their satisfaction with CPS as a whole – are otherwise absent from these surveys. There exists in this survey a two-question section on programs offered by CPS: the first question boils down to, "Have you heard of specific programs or services?" and the second question is, "Which programs or services have you heard of?" Under the current survey construction, it is impossible to determine what programs increase satisfaction, and, for programs that do increase customer satisfaction, to what degree. Without understanding this information, CPS Energy struggles to grasp which programs are adding value from the customer perspective, and thus cannot know how to strategically prioritize their resources. During discussions with CPS Energy staff, staff indicated that data exists to be able to determine the correlation between program success and customer satisfaction; however,

calculating this correlation is an unmanageable manual process. CPS Energy staff has indicated that the new ERP will address the current shortfalls in measuring drivers of customer satisfaction.

Survey design can and should be constantly reviewed. Daymark has seen numerous other customer satisfaction surveys performed by other utilities that include metrics such as satisfaction by contact type (participation in program/service, call center, field rep, etc.), reason for contact, repeat interactions by customer, and other metrics that Daymark has not yet seen from CPS.

Observations – Customer satisfaction

Observation VI-24. **CPS Energy's staff and executives involved with the key aspects of Customer Engagement for CPS Energy are highly motivated, caring, and engaged individuals; however, this has not driven, nor is it an exclusive requisite for, high customer satisfaction.**

Observation VI-25. **Customer satisfaction has been consistently trending downwards, with the most severe downturn occurring among the residential class in Q3 of 2022. Despite that, residential customer satisfaction has bounced back in Q4, although not quite to the previous levels.**

Observation VI-26. **Customer satisfaction information is not linked to other data within the utility to explain changes and plan actions that will increase customer ratings for CPS Energy**

Observation VI-27. **Resourcing has not allowed for system or people upgrades to create, save, and analyze meaningful customer data which, in turn, makes it impossible to be strategically customer driven.**

Recommendations – Customer satisfaction

Recommendation VI-17. **Establish a three to five-year plan for the customer engagement budget, staffing, and improved data gathering and focused analytics.**

Recommendation VI-18. **Commit to ERP specifications to support the tasks necessary to improve customer data gathering, storage, and analytics.**

Recommendation VI-19. **Daymark suggests that CPS Energy begin collecting customer satisfaction data at all points of contact and maintain this data in CRM software that is manageable, easy to use, and automatically matches customer satisfaction to billing data for verification.**

Recommendation VI-20. **CPS Energy should design surveys with the intent of measuring trust in a specific way and evaluating how customers' expectations and impressions of the company impact their perception and trust. The surveys need to be integrated with other customer data to enable CPS Energy to utilize the information to become customer driven.**

G. Stakeholder engagement

Stakeholder overview

CPS Energy focuses on Community Partnership and Growth as part of the strategic objectives in *Vision 2027* and aims to work with customers, local officials, and community groups to align on community initiatives and support San Antonio's economic growth[90] CPS Energy works with several stakeholder engagement committees to drive its actions and strategies, including long term resource plans: the Rate Advisory Committee, the Municipal Utilities Committee, and the Citizens Advisory Committee. CPS Energy stakeholder groups include, but are not limited to, customers of all classes; government agencies and officials including ERCOT; Bexar County and the City of San Antonio; local community representatives; the committees listed above; and the media. Each of these stakeholder groups has distinct priorities for their involvement with CPS Energy.

- The Rate Advisory Committee is intended to provide input and perspectives to CPS executives and the Board on rate structures and potential rate increases. This mandate was expanded into resource planning, and the Rate Advisory Committee recently developed recommendations for the CPS Energy Board related to CPS Energy's supply portfolio planning.
- The Municipal Utilities Committee, or MUC, oversees San Antonio's Water System and CPS Energy. Unlike the City Council, this committee specifically is charged with program coordination efforts, including the implementation of programs and policies.
- The Citizens Advisory Committee is focused on providing "a customer perspective on utility-related projects and programs" and creates a personal interface between CPS Energy's customers and the utility itself.

Activities undertaken by CPS Energy to address each stakeholder group include communication plans, discussion meetings, engagement with PUC and ERCOT efforts in the form of participation in regulatory proceedings and protocol reviews, community

[90] CPS Energy Vision 2027.pdf, slide 11. Available at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Vision-2027-An-Evolving-Utility-Final .pdf.

town hall meetings, hands-on emergency support in the community during outages, and attending to relevant media requests.

Rate Advisory Committee

Discussion

CPS Energy's Rate Advisory Committee (RAC) is intended to provide input and perspectives to CPS Energy executives and the Board on rate structure and potential rate increases. According to CPS Energy's website, the RAC is made up of 21 members – 11 appointed by the Board of Trustees and 10 appointed by the City Council.[91] Daymark attended the September 15, 2022, meeting of the RAC virtually via You Tube. The meeting revolved around consultants to CPS Energy for the Generation Planning process, a vital input to the overall ratemaking proceedings. During the observation of this proceeding, Daymark noted that, although the RAC members may come in with varying levels of familiarity with the utility industry, the members of the RAC are by and large highly invested in their commitment and responsibility to CPS Energy and their fellow customers.

Observations – Rate Advisory Committee

Observation VI-28. RAC members may have varying levels of familiarity with the utility industry but are largely invested in their commitment to CPS Energy and their fellow customers.

Observation VI-29. CPS Energy has fully legitimized the role of stakeholder input and review within resource planning decision making and is planning to repeat that in discussions of changes in rate design.

Recommendations – Rate Advisory Committee

Recommendation VI-21. CPS Energy should ensure a collaborative stepwise approach to engaging the RAC members in evaluating changes and modernization of its rate design, to ensure all members have the necessary information to participate fully.

Municipal Utilities Committee

Discussion

The City of San Antonio's Municipal Utilities Committee, or MUC, oversees San Antonio's Water System and CPS Energy. Unlike the City Council, this committee specifically is charged with program coordination and implementation efforts. MUC is made up of four

[91] https://www.cpsenergy.com/en/about-us/who-we-are/rac-rate-advisory-committee.html.

members of the City Council. MUC was formed after Winter Storm Uri to improve transparency between CPS Energy and the City Council, with the objective of reducing the potential impact of future extreme weather events on the San Antonio community. MUC meets every month and requests updates from CPS Energy on active programs or initiatives. Based on Daymark's review, MUC members perceive themselves to be in a communicative role to share information they hear from their constituents rather than in a directive role.

Daymark's review included interviews with MUC's four council members. Although the members expressed varying views on a range of topics, they were unanimous in their view that communication with the community is improving, but it also continues to need improvement. The members noted that there has been a positive improvement in the communication between CPS Energy and the City of San Antonio because of the new leadership and increased engagement with residents through flyers and knocking on doors. Despite these efforts, members of the MUC shared that the number of people CPS Energy is engaged with is lower than where they would like it to be; however, based on Daymarks previous analysis of communication, Daymark notes that CPS Energy is making great efforts to engage with the community on several different platforms.

The importance of affordability and recognition of the energy burden for a growing population of residents facing economic distress was also stressed by all the members. Members shared how their constituents are facing challenges in paying their outstanding bills and how inquiries about bills have become a more common from their districts, identifying affordability as of crucial concern to the San Antonio community. However, the MUC also acknowledged the need for CPS Energy to reach financial sustainability by reducing the number of uncollected bills.

Daymark has no recommendations related to the MUC.

Observations – Municipal Utilities Committee

Observation VI-30. **MUC members perspectives vary, but MUC members all stated that communication with the community is improving but it also continues to need improvement.**

Observation VI-31. **Despite the MUC members perception that communication needs to increase, Daymark has identified that CPS Energy is communicating across all platforms in a way that surpasses CPS Energy's peer utilities.**

Observation VI-32. **MUC members shared in CPS Energy's concerns that increased uncollectible bills are a threat to financial sustainability and affordability.**

Citizens Advisory Committee

Discussion

CPS Energy's Citizens Advisory Committee (CAC) is focused on providing "a customer perspective on utility-related projects and programs" and creates a personal interface between CPS Energy's customers and the utility itself. The CAC is a 15-member committee whose mission is stated as follows: "To Support CPS Energy's essential elements of success by acting as an interface between CPS Energy and its customers; to help tell the CPS Energy story often and well; to understand performance measures and to challenge CPS Energy to 'think outside the box.'"[92] Members of the CAC are appointed by the CPS Energy Board of Trustees with input from the City Council and the CAC itself. CAC members serve three 2-year terms, and the committee meets on a monthly basis.[93]

Daymark has no specific observations or recommendations relative to the CAC.

Legislation

Discussion

CPS Energy's legislative relations efforts include outreach to 14 elected officials in the state legislature, 7 congressional members in DC, and various regulatory teams whose decisions impact CPS Energy and its customers. The activities in these bodies result in an ongoing stream of legislative and regulatory initiatives for CPS to review and, if necessary, develop an engagement strategy for. When a new issue is introduced, it is discussed internally and then prioritized and addressed through an internal process, beginning with Legislative Regulatory and Policy Meetings (LRPs) that are conducted to educate and inform specific internal subject matter experts on legislative activities relevant to their expertise and solicit comments regarding the impact on CPS Energy and necessary next steps.

While detailed discussions as part of the LRPs are important to ensure participation, given the vast number of legislative and regulatory activities that could require involvement, relevant materials are reviewed and presented based on individual judgement, which may vary depending on the specific subject area expertise of different individuals. The natural progression of personnel within a firm has the potential to alter

92 https://www.cpsenergy.com/content/dam/corporate/en/Documents/CAC-Meetings/CAC%20Meeting%20Agenda%20January%2011%202023.pdf

93 https://www.cpsenergy.com/en/about-us/who-we-are/citizens-advisory-committee.html

the areas of expertise within the group that reviews and prioritizes regulatory and legislative action.

In 2022, the Committee on Emergency Preparedness (CEP) provided several recommendations to CPS, including communication improvements for stakeholders.[94]

Observation - Legislation

Observation VI-33. The existing ad hoc nature of discussions and variability in personnel review creates the potential for gaps in understanding and judgement related to when involvement in specific government relations is important, meaningful to CPS Energy, or could help to achieve company-wide goals.

Recommendation - Legislation

Recommendation VI-22. CPS Energy should prioritize the documentation and preservation of the processes and procedures for addressing legislative activities.

Customer and stakeholder input

Discussion

During multiple conversations with CPS Energy executive staff, Daymark was assured that they have extensive data on interactions with customers and stakeholders. Daymark has not seen granular data of the type that CPS Energy staff discussed during interviews. During follow-up conversations, CPS Energy staff clarified that, while the data may indeed exist, it does not exist in a format that is readily accessible, readily comparable, and/or matched to customer billing or program participation data, and therefore the data is ultimately not actionable to improve overall customer experiences.

CPS Energy executives informed Daymark that, as part of their customer experience and customer satisfaction survey, customers were asked if they took part in various programs. One of the key points CPS Energy brought up is that this data is self-identifying and ultimately not verified against actual enrollment in the billing system data. To do so manually would take a large effort for each individual customer.

Furthermore, CPS Energy staff mentioned on multiple occasions that new programs or initiatives are constantly being provided to the Customer Engagement organizations, with little ever coming off their plates. These new programs are rarely if ever

[94] January 31 2022 Board Meeting for Posting – slide 8. Available at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/January%2031%202022%20Board%20Meeting%20for%20Posting.pdf. In response, CPS has allocated $93 million in FY2024 to address the entirety of CEP's recommendations and identified several areas of improvement focused on legislative and policy activities

accompanied by new staffing additions, leaving the highly motivated and engaged staffers stretched ever thinner across programs, with little time to implement the necessary support systems to make them truly effective. Ultimately, Daymark believes, based on the results of interviews and data requests (in some cases based on the absence of data), that the underlying structure and software needed to make the connection between customer data, stakeholder input, and customer satisfaction is not adequate.

Fundamentally, this is a problem of realizing adequate rates of return on CPS Energy's investments in programs. If a program is implemented, but there is no structure to understand the impact of the program or how to maximize the impact of those it is intended to reach, then CPS Energy is not investing in an optimal manner.

Ideally, new computer systems may make better analysis possible. In the interim, more weight should be given to CPS Energy Customer Engagement personnel's opinion on program implementation – these individuals implementation and customer base experience may equip them to provide valuable advice on the best way to implement new programs.

Observations – Customer and stakeholder input

Observation VI-34. While customer data may indeed exist, it does not exist in a format that is readily accessible, readily comparable, and/or matched to customer billing or program participation data, and therefore ultimately not actionable to improve overall customer experiences.

Observation VI-35. Daymark believes, based on interviews and data requests (in some cases, based on lack of data), that the underlying structure and software needed to make the connection between customer data, stakeholder input, and customer satisfaction is not adequate.

VII. ERP TRANSITION

A. Introduction

Throughout our interviews with CPS Energy staff, we heard frequently about the deficiencies of the current computer systems and the technology transition CPS Energy is pursuing, including an Enterprise Resource Planning (ERP) system and a new SCADA system. In this section, we review CPS Energy's plans for the ERP transition. The SCADA system was discussed above in the "Operations" section of this report.

The ERP system manages "day-to-day business activities" of CPS, including the following:[95]

- Customer account management
- Human resources
- Finance
- Procurement/purchase orders
- Supply chain
- Asset tracking
- Numerous other operational functions (e.g., work order management)

The current core SAP software providing the above functions is more than 22 years old, and the limitations of the system as it currently exists were highlighted during our review in a number of contexts:

- Several accompanying systems have been developed to address the functional limitations of the current SAP system. For example, according to an interview with CPS staff, there are seven separate systems for asset management, each in a different part of the CPS Energy organization. These many accompanying systems create opportunities for data duplication and manual intensive processes that increase risk for error.
- Accounts payable software is described as "antiquated," and staff note they must work closely with vendors to have a smooth payment process.
- In the area of construction, work management is currently highly fractured—a highly manual process utilizing paper timesheets, with data kept on different

[95] CPS Energy, August 30, 2021 Board meeting posted materials, Agenda Item 6B. Available at https://www.cpsenergy.com/content/dam/corporate/en/Documents/Trustees/August%2030%202021%20Regular%20Board%20Meeting%20for%20Posting%20to%20Website.pdf

spreadsheets within the different districts. This creates challenges for contractor management.

- Customer program outcomes and customer satisfaction data is available but, with current computer systems, it is not possible to conduct an analysis of the data that could provide insights into the best ways to increase program outcomes and customer satisfaction.
- Despite CPS Energy's Advanced Metering Infrastructure (AMI) hardware, the utility warns that the ability to implement significant changes like residential and commercial time of use billing may be delayed by the need to transition to a new billing system.
- For Human Resources, software is limiting the ability to offer competitive benefits—for example, the system is rigid about when it accrues vacation time—so if you are hired at the wrong time of year, you may only get one week of vacation in your first twelve months of work.
- As discussed in the Audit section of this report, the recent external review of CPS Energy's audit division suggested that it should utilize Computer Assisted Auditing Techniques to improve its audit efficiency—the Audit division concurred but noted that fragmented data across the organization currently significantly limits their ability to implement this recommendation.
- In the area of procurement, the system has not kept up with the growing complexity of contract requirements for things like cyber security and insurance. As a result, according to CPS staff, a contracting process that used to take 30 days now on average takes 6 months.
- The upcoming end of life of CPS Energy's current SAP system will mean that it will at some point no longer receive updates, including security updates. The latest report to the Board states that the SAP would be "at the end of standard support" beginning in 2027.

Current project status

CPS Energy's transition to a new ERP system is working to address current IT software limitations. CPS is currently in "Phase 1," the "Assessment and Planning" phase of the ERP project, and in the last rate case secured $48 million to fund this work through FY2024.

To date, working with PricewaterhouseCoopers and McKinsey & Company (McKinsey), CPS Energy has completed a needs assessment process that included 187 workshop sessions and identified 1,199 functional requirements for a new ERP. McKinsey

completed a "Digital Strategy" study that, based on our interviews with CPS Energy staff, we understand is aimed at identifying ways to address "pain points" prior to full ERP implementation and to help de-risk the implementation itself.

An RFP for ERP software platforms was issued on January 11, 2023, with proposals due March 2, 2023, and a planned contract start slated for the Fall of 2023. A subsequent process is planned to select an implementation partner, with that selection intended to be in place in FY 2025. Project completion is currently planned for January 2028.

Based on Daymark's review, we support CPS Energy's transition to a new ERP system and believe that CPS has taken and/or is planning many positive steps to manage risk; however, for this kind of project, risk continues to be a central concern. In the discussion that follows, Daymark provides additional discussion of potential risks and some recommendations for continuing CPS Energy's risk management efforts.

B. Discussion

Planned project budget

CPS Energy has prepared an initial estimate of total ERP project costs (not including the $48 million allocated to date), which they expect to fall in a range from approximately $178 million to $249 million (based on an analysis by PricewaterhouseCoopers), and which includes costs associated with additional CPS Energy staff costs to support the project. CPS Energy anticipates including some portion of this amount in the next rate request, since the expectation is that the City will approve rates that allow CPS to fund the project two years at a time.

CPS Energy staff resources

The CPS Energy ERP replacement project will clearly demand significant support from CPS Energy's business and technology excellence division, but it will also require a significant investment of time from other departments. The ERP team must be actively engaged in providing subject matter expertise to ensure the final software meets their business needs and will likely also be needed for tasks associated with transitioning data and system testing.

Within CPS Energy, divisions are beginning to plan for this support. Shared services, which anticipates that a significant part of the ERP project will relate to their work, is developing a proposal to manage the resource need, including a matrix team structure, including understudies and succession candidates for key roles.

Many CPS Energy employees will charge part of their time to the project, while continuing to work on other duties. It is clearly CPS Energy's intention to hire new staff as part of the ERP project, both in the IT division and in some cases to backfill work in business units, but it is not clear to Daymark that plans for new hiring are intended to fully offset ERP demands on staff time.

Scope of ERP transition

Although a long list of potential functional areas for the ERP has been identified and included in the RFP, the final definition of project scope has not yet occurred and will not occur until after receipt of responses to the RFP.

Risk and mitigation strategy

Any large-scale software replacement project carries risk, and the CPS Energy managers we spoke with were aware that the ERP replacement is a high-risk project. In the case of the ERP, CPS will be replacing systems that touch very public and key business functions, including customer billing and payroll, so any failures upon roll-out have the potential to impact many customers and employees and to be highly visible to the public.[96]

In our review of CPS Energy's written materials and interviews with CPS Energy management, we identified the following specific elements in the CPS Energy plan and/or workforce that will help to mitigate ERP replacement risk:

- Work with McKinsey that includes a focus on de-risking the ERP project. Daymark is not familiar with the details of this engagement.
- Plans to engage an Independent Verification and Validation (IV&V) partner to provide an independent view of whether the software developed meets CPS Energy's requirements.
- An Executive Steering Committee, to include the CEO and other top CPS Energy executives to oversee the project.
- An understanding expressed by several of the top management staff we spoke to that, whenever possible, it is preferable to utilize an off-the-shelf software

[96] Other utilities have experienced very public struggles with ERP implementations that target only some of the areas contemplated by CPS Energy. In the early 2010's, for example, LADWP launched a new customer billing system that issued erroneous customer bills (up to 40 times the normal amount, in some cases). Results included overwhelmed call centers, hundreds of millions of dollars in additional past-due bills, and eroded customer trust. (https://ens.lacity.org/opa/importantdoc/opaimportantdoc324996853_07012015.pdf) Similarly, a National Grid payroll system implemented in 2011 had serious problems which drove the cost of the system up to almost $1 billion. (https://www.utilitydive.com/news/national-grid-software-debacle-will-cost-1b/317736/).

approach, since customization drives up cost, extends timelines, and increases risk. Several of those we interviewed referred to over-customization as a key problem with the current SAP system.

- An understanding, expressed by several of the top management staff we spoke to, of the importance of significant, ongoing engagement of high-level strategic staff to support system development. Amidst the demands of other important work, it can be tempting to delegate work on system development; however, continued engagement by higher-level decisionmakers is crucial to project success.
- Designated business advisory leads and business process leads in each business unit.
- The current interim chief information officer has experience transitioning IT systems in previous roles.

At the same time, it is difficult, and perhaps impossible, to fully mitigate all risk in a project of this size. The following aspects of the proposed ERP transformation have the potential to add to its inherent risk:

- The potential scope of the project is very large. An attempt to pursue a replacement of the ERP in all the areas identified at once would likely put extremely large demands on CPS Energy staff to support parallel and interdependent systems. However, we note that CPS Energy is not at this point committed to taking on the full scope in a single timeframe. CPS Energy expects additional clarity on the possibility of breaking the project into smaller chunks once the results of the current RFP are known and system dependencies are better understood.
- The expiration of support for the current system has the potential to create pressure to roll out a new system before it is ready. While on the one hand, it may be beneficial to an IT project to have a time constraint that keeps the organization focused, a hard deadline can increase risk if it forces premature roll-out of a new system. As noted above, “standard support” for the current system is scheduled to end in 2027, a timeline that leaves no room for delay, given that the current schedule calls for completion of system roll out in January 2028. Our interviews with CPS staff suggest that it may be possible, if necessary, to negotiate extended support of the legacy system.
- CPS Energy’s Chief Information Officer recently left the company. This is a key leadership role for the ERP project, and choosing the right replacement will be important to project success.
- CPS Energy management and staff will need to find a way to maintain focus on the ERP project while also pursuing other demanding projects related to CPS

Energy's portfolio transition and CPS Energy's new, accelerated pace of rate requests.

- The project will need continued support from both the Trustees and from the San Antonio City Council, as the expectation is that funding for the project will be made available only two years at a time.

Observations – ERP transition

Observation VII-1. The current ERP system is more than 22 years old, and there are several limitations that it presents to managing day to day activities across business units.

Observation VII-2. There is concern that the original vendor will stop supporting CPS Energy's current SAP system in 2027, which would mean that it would no longer receive updates, including security updates.

Observation VII-3. The cost of the ERP transition is not included in the recent rate increase. CPS Energy anticipates including some subset of the total ERP amount in the next rate request to the City, since the expectation is that the City will approve rates that allow CPS to fund the project two years at a time.

Observation VII-4. The CPS Energy ERP transition project will clearly demand significant support from CPS Energy's business and technology excellence division, but it will also require a significant investment of time from other departments.

Observation VII-5. The potential scope of the project is very large. An attempt to pursue a transition to an ERP system in all of the areas identified at once would likely put extremely large demands on CPS Energy staff to support parallel and interdependent projects. However, the final definition of project scope has not yet occurred and will not occur until after receipt of responses to the RFP.

Observation VII-6. The project will need continued support from both the Board and from the San Antonio City Council, as the expectation is that funding for the project will be made available only two years at a time.

Recommendations – ERP transition

Daymark recognizes the need for this project and its importance to CPS Energy and its customers. Daymark is an energy consulting firm, not a technology consulting firm; accordingly, our recommendations are limited and not comprehensive. There are likely additional actions that CPS Energy can and should take to minimize risk. However, we do make the following baseline recommendations:

Recommendation VII-1.Before executing a contract with a software vendor, CPS Energy should identify a de-risking strategy for the project, including considering the possibility of "chunking" or phasing the project, and should present this analysis to the Board along with its request for contract approval.

Recommendation VII-2.CPS Energy's de-risking strategy should include a plan for maintenance of the legacy system in case the new system cannot be rolled out on schedule.

Recommendation VII-3.In selecting a new CIO, experience in managing complex IT system replacement projects should be a key consideration.

Recommendation VII-4.Communication from CPS Energy to the Board and the City Council should be clear about the complexity, risk, and importance of this transition. The Board (and, to a lesser extent, the City Council) can play an important role in this project in working with CPS Energy to minimize any external pressure for unnecessary system customization and to ensure that CPS Energy plans for the possibility of delay, and that the system is only rolled out when it is fully tested and ready.

APPENDIX A. OBSERVATIONS AND RECOMMENDATIONS

Financial health observations

Observation IV-1. CPS Energy's more proactive approach to financial planning, including plans to request regular rate increases, is a positive change and is needed to support CPS Energy's lean operations.

Observation IV-2. Over the next decade, in addition to the rate increases identified, several other factors could impact customer bills, including ERP transition costs, costs associated with the power supply transition, and possible additional costs associated with Winter Storm Uri.

Observation IV-3. CPS Energy is in a stable financial position, with a debt capitalization ratio comparable to other large public utilities.

Observation IV-4. CPS Energy's electric rates and residential bills are competitive with those of other Texas utilities.

Observation IV-5. CPS Energy's past-due receivables rose to above $200 million in FY 2023, causing an increase in bad debt expense that would be financially unsustainable for CPS without rate increases if it persisted.

Observation IV-6. CPS Energy management and the CPS Board are closely focused on the problem of past-due receivables and undertaking significant efforts to get customers on payment plans and reduce the total value past-due receivables.

Observation IV-7. CPS Energy's prioritization buckets may not adequately capture the complexity of potential trade-offs between buckets and risks that may be associated with extended neglect of items in the lowest-priority bucket.

Observation IV-8. On an annual budgeting basis, CPS Energy management has limited flexibility to respond to new budget needs.

Observation IV-9. Information included in the Board presentation asking for high-level budget approval only includes information on how the budget will impact Key Financial Metrics, not performance in relation to any other metrics.

Observation IV-10. Monthly Enterprise Performance updates presented to the Board are rich sources of financial information that keep the Board well informed of CPS Energy's financial status throughout the year.

Observation IV-11. CPS Energy's initial forecasts of rate increase amounts, including its 5.5% forecasts for 2025 and 2027, may be low estimates, since they include only well-understood costs known at the time. Other costs, such as ERP transition costs that have been defined since that initial forecast may raise final rate request amounts.

Observation IV-12. CPS Energy analyzed multiple scenarios as part of its recent supply portfolio planning process.

Observation IV-13. There is an opportunity for CPS Energy to use stochastic or scenario analysis more comprehensively to analyze potential future financial scenarios and the potential cumulative customer bill impacts of new initiatives, considered together.

Observation IV-14. CPS Energy's current rate design's fuel cost factor is an important source of financial stability to the utility; other rate design elements, such as reduced per kWh charges for higher usage levels, have been abandoned by many other utilities.

Observation IV-15. Although a range of customer programs to support demand response are offered, CPS Energy does not offer any rates that are tied to time of use.

Observation IV-16. Allocated cost of service studies suggest that, at least to some extent, commercial customers may be making payments that are above their proportional cost to serve. Daymark does not know if this observation extends to industrial customers.

Observation IV-17. IT system limitations may constrain the rate structures that it is possible for CPS Energy to implement in the near term.

Observation IV-18. Through the risk register managed by the Enterprise Risk Management group, CPS Energy has developed a central tracking mechanism for risks associated with current operating initiatives; it may be possible to leverage this mechanism as a means of identifying and tracking larger cross-organization risks; however, Daymark was not able to assess the extent to which this is currently happening.

Observation IV-19. Enterprise Risk Management and Business Development functions are organized within a single business unit. There does not seem to be a clear business rationale for this organizational structure, and it could introduce risks of distraction for the risk management function.

Observation IV-20. CPS Energy's internal audit division received the highest possible rating in a recent external review.

Observation IV-21. Additional efficiencies for the Internal Audit division may be possible after implementation of the new ERP system.

Observation IV-22. The dual-reporting structure of the internal audit division provides important balance to the oversight of this department.

Observation IV-23. Not all audit work is conducted or overseen by the Internal Audit Division; accordingly, the Internal Audit annual audit plan is not a complete representation of audit activity at CPS Energy.

Observation IV-24. A recurring focus of CPS Energy internal audits is management of vendors and contracts, and audits have identified a number of ways to strengthen internal controls in this area.

Financial health recommendations

Recommendation IV-1. While continuing to manage for affordability and price competitiveness, CPS Energy should execute its plans to maintain its financial position and meet increasing customer needs by requesting rate increases as needed to support expanded staffing levels and needed investment.

Recommendation IV-2. Daymark recommends that the value of past-due receivables be included among CPS Energy's Tier 1 financial metrics.

Recommendation IV-3. CPS Energy and its Trustees should continue their efforts to reduce past-due receivables. If necessary, growth in past-due receivables and resulting bad debt expenses should be considered in future rate increases.

Recommendation IV-4. CPS Energy should review its framework for prioritizing expenses. Specifically, it should review the prioritization buckets presented in its Budget Plan document and consider: (1) providing clarification around what kinds of Board/public commitments should receive non-negotiable priority, and (2) whether the prioritization process is in danger of resulting in persistent neglect of Bucket 3 items, which could have cumulative significant negative impact.

Recommendation IV-5. CPS should include projections of all Tier 1 metrics, not just financial metrics, in the annual budget approval presentation to the Board.

While we do not recommend that the Board become overly involved in internal management discussions that occur before the final budget is presented, we suggest that the Board be informed of any critical tradeoffs embedded in the final budget that they are being asked to approve.

Recommendation IV-6. CPS Energy should work with the Board to develop a medium- and long-term strategic financial planning process, separate from budgeting and the development of rate requests. The focus of the strategic plan should be on estimating the impact of current decisions on potential bill impacts 5-10 years in the future and should use scenarios or stochastic analysis to assess the risk of unacceptable outcomes. The goal is to allow CPS Energy to craft effective mitigation strategies sufficiently in advance to minimize the potential for undesirable consequences.

Recommendation IV-7. Any actions taken by the RAC to modify rate design should be evaluated in combination with the results of the updated cost of service study that was recently completed, in accordance with best practices in utility rate design, while addressing energy equity or burden.

Recommendation IV-8. The RAC may wish to consider whether a phased rate plan, with conservative short-term changes and more innovative longer-term changes, is appropriate. Daymark supports CPS Energy's caution in raising the issue of potential constraints on the rate changes that should be considered in conjunction with the ERP transformation.

Recommendation IV-9. While respecting the technology constraints discussed above, the RAC should consider whether there are innovative approaches that might be adopted in future, such as such as time of use rates or even "real time" varying rates, that may have the potential to incentivize behavior that could produce meaningful savings for CPS and its customers.

Recommendation IV-10. CPS Energy should examine whether it is maximizing the opportunity to use the current risk register central risk clearinghouse to identify cross-organizational risks that can best be managed at a level above that of individual business units.

Recommendation IV-11. CPS Energy should review the current joint ERM/Business Development organization to determine whether there is a danger that the immediacy of business development needs may distract from the longer-term benefits of risk management, resulting in a lack of focus on the smaller risk side of the unit.

Recommendation IV-12. The "audit project coverage" matrix developed by Internal Auditing as part of its audit planning process should be expanded to include all CPS Energy audit activity, in order to make it easier to identify areas that may not be adequately covered.

Recommendation IV-13. Daymark recommends that oversight of contractors and vendors, an area in which the Audit Division seems to have identified a number of risks, continues to be an area of focus, given that outside services represents more than half of CPS Energy's non-fuel O&M budget.

Operational excellence observations

Observation V-1. Operationally, CPS Energy achieved largely satisfactory reliability-based outcomes over the period reviewed.

Observation V-2. CPS Energy's performance on industry-standard reliability indices has been good over the past several years, exhibiting top-quartile reliability over the observed period with the exception of SAIFI w MED.

Observation V-3. CPS Energy's high-level approach to prioritization of allocating budget to both regulatory-driven and customer expansion projects and then adjusting remaining program budgets as necessary is sensible and necessary to support the goals of the organization.

Observation V-4. Daymark observed inconsistency within the level of detail offered for system upgrade projects within the 2021 EDS Long Range Plan across different programs.

Observation V-5. There have been some information technology frictions hampering crews' abilities to timely address work orders opened as a result of CPS Energy's circuit condition data collection. CPS Energy intends to address the IT gap in their ERP implementation.

Observation V-6. CPS Energy has laid out a solid groundwork for being able to achieve the benefits of grid modernization, including AMI, but CPS Energy has encountered an AMI network latency which has precluded some operational usages of the AMI technology.

Observation V-7. CPS Energy is at a critical juncture regarding its operational technology platforms, currently relying on aging technology platforms for the operation of its electric system, but with a major initiative underway to implement next-generation platforms.

Observation V-8. CPS Energy has begun implementing FLISR and VVO schemes on a number of its circuits, with a reasonable budget for additional rollout.

Observation V-9. Cost information has begun to be developed for the OT/SCADA set of investments. However, the project breakdown does not yet contain quantifiable and measurable goals.

Observation V-10. CPS Energy's platform initiative materials have contemplated a large cost component related to "People"; however, we did not observe in the available materials sensitivities or a detailed discussion of a breakdown of resource needs to support major project phases, such as training, process revision, and data validation.

Observation V-11. CPS Energy teams were largely aware of the performance deficiencies which were evinced by Winter Storm Uri, improvement in these dimensions has been a high priority, and several concrete corrective actions have been completed.

Observation V-12. Resource availability was identified as a key ongoing challenge in responding to major weather events.

Observation V-13. CPS Energy currently utilizes a significant degree of contracted labor for both engineering and operational workloads within the electrical organizations.

Observation V-14. CPS Energy in its 2022 Generation Planning process has identified a comprehensive list of planning objectives which were used to understand impacts of different portfolio approaches.

Observation V-15. The generation planning process documents reviewed did not include specific treatment of transmission sensitivities. Transmission is being considered in the resource procurement process through congestion analyses.

Observation V-16. CPS Energy has a team which follows electric market policy and which is responsible for coordinating strategic discussions with functional groups.

Because of the rapid pace of change in the state's electricity market and CPS Energy's planned portfolio shift, we expect the strategic implications of these market issues to carry increased importance.

Observation V-17. CPS Energy has been an industry leader in recent periods in responding to gas leaks in a timely manner. The organization tracks this response as a Tier 2 metric.

Observation V-18. The interface between the Gas Solutions organization and groups within Energy Supply and Market Operations is critical to the reliable delivery of natural gas to customers. Employees in both organizations are aware of this dependency and work sufficiently to meet customers' needs, but documentation reviewed largely did not reflect these lines of communication.

Observation V-19. The Gas Solutions organization has expectations of sizing up its workforce in the near term, in part to meet demands of new customer growth. Hiring managers have thus far encountered some difficulty in attracting the necessary skilled labor in a tight laor market.

Observation V-20. The Gas Solutions organization has not been mandated to enact any specific Railroad Commission requirements pertaining to critical facilities. Nonetheless, CPS Energy has made necessary weatherization upgrades and checks in line with the Commission's requirements.

Observation V-21. CPS Energy is at or near the top in gas service affordability, compared to thirteen other peer utilities surveyed.

Observation V-22. CPS Energy has experienced a trend over the past several years of an increasing number of known system leaks to be addressed. This has been attributed to an improved leak detection program, but, whatever the reason for this increase, meeting the increase leak workload represents an important area for Gas Solutions strategic planning in upcoming periods.

Operational excellence recommendations

Recommendation V-1. We recommend that CPS Energy clearly communicate how strategy is being adjusted based on ongoing circuit-level data collection within the Reliability and Power Quality Quarterly Report ("Reliability Report"). The reporting should explain how observations of trends are used to inform spending areas and other strategies such that the Reliability Report transparently represents how cost-effective reliability investment is being made.

Recommendation V-2. Ensure that projects in the long-range plan beyond a threshold size contain adequate detail regarding scope, justification, benefits, and alternatives. Further, the organization should ensure that an objective prioritization approach is in place which ensures highest-value projects are being pursued within a given budget cycle.

Recommendation V-3. Management should track the evolution of the volume of open construction work orders and consider remedies if indications are such that the volume is having a negative effect on system performance or customer experience. The new ERP was identified as a potential facilitator of improved work order processes; the organization must manage timelines and expectations in areas such as this where the ERP is expected to provide a long-term solution.

Recommendation V-4. CPS Energy should seek to better leverage the AMI investment ahead of the OT/SCADA investments coming down the pipeline.

Recommendation V-5. The benefits that AMI was expected to deliver at the time of the investment decision, as well as any potential emerging uses, should be carefully tracked and assessed Resources may need to be dedicated to effectively leverage the wide-ranging use cases, but the decision to do so must be based on a criterion of value to customers.

Recommendation V-6. CPS Energy should ensure that there is a methodology in place for understanding at the project selection stage the expected benefits for each of these investments and measurement of the performance of circuits with the technology to ensure that the continued investment is accretive to customers.

Recommendation V-7. CPS Energy should ensure that it has ranking processes in place to determine which circuits would benefit most from deployment of new technologies and should track performance against these criteria.

Recommendation V-8. As the OT/SCADA implementation matures, CPS should identify what benefits justify the investment and set up tracking such that they can be monitored.

Recommendation V-9. The organization should perform sensitivities regarding the "People" costs within any cost-benefit analyses developed.

Recommendation V-10. CPS Energy should develop a response plan which pertains specifically to service restoration coordination, and which aligns with industry best practices. For example, a sample table of contents is provided in Appendix C.

Recommendation V-11. CPS Energy should refine the process by which information flows from the meteorological groups to operations management, such as the frequency of update and how risks are outlined, such that crew mobilization can be responsive to the current outlook.

Recommendation V-12. CPS Energy should ensure that benefits of an expanded internal workforce to storm restoration are incorporated into the internal/outsourcing analysis discussed in the "Workforce" section.

Recommendation V-13. CPS Energy should review its mutual aid approach in conjunction with the recommended development of an outage restoration plan to ensure it is poised to take advantage of nearby resources ahead of storm events.

Recommendation V-14. CPS should clearly define its decision criteria pertaining to outsourcing relative to its short-term and long-term utilization.

Recommendation V-15. CPS should discuss outsourcing volumes in strategic discussions about workforce and labor budget, due to its role as an alternative for certain workflows.

Recommendation V-16. CPS should hold discussions with the necessary parties to outline approaches for increasing the pipeline of internal line worker talent. One consideration may be the length of the existing apprenticeship model.

Recommendation V-17. CPS should continue to utilize its new framework, which, through direct involvement of the RAC committee, integrates making tradeoffs and communicating benefits in future supply planning strategy.

Recommendation V-18. CPS should more explicitly analyze and formally communicate the transmission investment implications of its forthcoming supply decisions.

Recommendation V-19. CPS Energy should ensure that the policy teams have the resources to perform this important dissemination and that managers engaged

in resource transition related decisions are prioritizing the intake of updates, especially as they pertain to market design matters.

Recommendation V-20. CPS should outline how evolving market information will be used to augment the conclusions of the generation planning process.

Recommendation V-21. Recognizing the importance of continuous planning, we recommend that CPS Energy consider adopting all or aspects of an Integrated Resource Plan.

Recommendation V-22. Document procedures for coordination between Gas Solutions and Energy Supply and Market Operations

Recommendation V-23. CPS Energy should develop and/or partner with workforce organizations to create an in-house training program. (Example curriculum provided in Appendix D)

Recommendation V-24. CPS Energy should develop a written plan for winter season system management to enhance transfer of institutional knowledge and integrate winter operations. This plan would be in addition to maintaining CPS Energy's practice of meeting the RRC weatherization checks described above and maintaining the existing Curtailment Plan. The benefit of a winter season system management plan would be to: (1) memorialize procedures for coordination daily between the Gas Solutions and Energy Supply units, and (2) double as an opportunity to review criteria for gas supply decision making and provide an important training tool for new staff added to meet growth over time. Appendix E provides an example of a table of contents for a winter season system management plan.

Recommendation V-25. CPS Energy should develop a new Tier 1 metric to track gas leaks open for repair at the end of each year, with the goal of reducing know system leaks at year end to those that have been located and confirmed in the last 45 days of each year, helping to prevent the development of a leak repair backlog and reducing methane emissions.

Recommendation V-26. CPS Energy must normalize leak prone pipe surveys more evenly over the course of the survey cycle, target replacement based on leak performance, and consider segment leak survey inspection cycles over a shorter time period.

Recommendation V-27. CPS should investigate adding to Gas Solutions staff to address the leak repair and customer growth workload. This assessment should include consideration of potential savings if additional staff allow for reductions in contracted services and/or overtime.

Customer engagement observations

Observation VI-1. Brattle's 2021 analysis found that residential CPS customers, on average, experience a lower energy burden than the average customer in Texas and the US, and energy burdens have been trending downwards since 2010. This may be an indicator that CPS Energy programs targeted at low-income households have been effective at reducing energy burden.

Observation VI-2. Brattle's map analysis of San Antonio shows that uniform pricing, programs and services across the residential population, a utility staple, is not the remedy to address energy burden.

Observation VI-3. CPS Energy's programs to address San Antonio's low-income community create significant savings for their customers and demonstrate that CPS Energy perceives their customer as more than just a meter.

Observation VI-4. The customer organization, in several departments, function with high energy and passion for helping each customer.

Observation VI-5. CPS Energy's team is highly sensitive in responding to new customer needs presented to them.

Observation VI-6. Prioritization of customer and stakeholder engagement activities is more reactive than strategically customer driven.

Observation VI-7. Customer Service programs are expansive, touching many customers, in the area of energy efficiency, solar energy, customer assistance and customer outreach.

Observation VI-8. STEP's design reflects a thorough analysis of customer needs, program delivery costs and benefits, and electric generation costs.

Observation VI-9. CPS Energy's recent resource planning exercise considered several metrics and cost considerations beyond the Utility Cost analysis of the STEP Program components, including addressing environmental and socio-economic impacts. This reflects industry best practice.

Observation VI-10. Based on the results of the Utility Cost Test (UCT) ratio, CPS Energy's STEP program demonstrates overall cost-effectiveness. CPS Energy has worked closely with a diverse set of stakeholders to address feedback provided on the STEP and FlexSTEP RFP.

Observation VI-11. Based on the results of the 2022 Brattle survey, there may be an opportunity increase awareness of STEP programs.

Observation VI-12. Daymark has observed that the assistance programs in place are reasonable; however, it is not clear how exactly CPS Energy measures the success of these programs. Information on customer feedback, perception of the programs, and overall enrollment has not been clearly presented.

Observation VI-13. It is Daymark's perception that, while data is abundant, it is challenging for the team to implement the use of the data because of administrative burdens. This is a result of CPS Energy being reactive with customer-facing resources, ultimately reducing the team's ability to evaluate program success.

Observation VI-14. Through interviews with CPS Energy customer engagement staff, we observed that outreach events can have a high administrative burden due to the request of the Board and City Council to indiscriminately apply outreach efforts across all districts and customer segments.

Observation VI-15. CPS Energy has not had the staffing, data and tools to develop an understanding of evolving customer expectations for electric and natural gas service interruptions and, power quality and even resiliency, including how that varies within the service territories diverse demographic and firmographics.

Observation VI-16. Calls are reported as being handled in four different ways. The primary method of handling calls by monthly volume is using Interactive Voice Response "IVR." The next major method of handling customer calls is via the Energy Advisors. Finally, the High Cll Volume Answering (HCVA) service and Abandoned Calls are third and fourth most utilized methods.

Observation VI-17. The "speed of answer" and the "abandon rate" are very closely correlated. CPS Energy saw increases in both over the summer, and these metrics have not returned down to their previous levels.

Observation VI-18. CPS Energy's "Service Level" decreased from January to July 2022. "Service level" follows the "speed of answer" and the "abandon rate" in an inverse relationship.

Observation VI-19. The Key Accounts group provides a single point of contact for new accounts and large existing accounts at the customer (not meter) level, providing evidence of CPS Energy's orientation towards perceiving their customers beyond the meter.

Observation VI-20. The timetable to complete an individual customer's request for service is several months, which could be harmful to economic development in its service territory.

Observation VI-21. CPS Energy's current bill format is a very simple representation of customer usage, rates, and charges.

Observation VI-22. Daymark found the CPS Energy website is easy to navigate and communicates well with customers.

Observation VI-23. CPS Energy is active on all major social media platforms including Twitter, Facebook, Instagram, LinkedIn as well as an additional platform called Newsroom. When compared to peers, CPS Energy excels in the social media market, with activity on more platforms than other comparable utilities across Texas and the United States.

Observation VI-24. CPS Energy's staff and executives involved with the key aspects of Customer Engagement for CPS Energy are highly motivated, caring, and engaged individuals; however, this has not driven, nor is it an exclusive requisite for, high customer satisfaction.

Observation VI-25. Customer satisfaction has been consistently trending downwards, with the most severe downturn occurring among the residential class in Q3 of 2022. Despite that, residential customer satisfaction has bounced back in Q4, although not quite to the previous levels.

Observation VI-26. Customer satisfaction information is not linked to other data within the utility to explain changes and plan actions that will increase customer ratings for CPS Energy

Observation VI-27. Resourcing has not allowed for system or people upgrades to create, save, and analyze meaningful customer data which, in turn, makes it impossible to be strategically customer driven.

Observation VI-28. RAC members may have varying levels of familiarity with the utility industry but are largely invested in their commitment to CPS Energy and their fellow customers.

Observation VI-29. CPS Energy has fully legitimized the role of stakeholder input and review within resource planning decision making and is planning to repeat that in discussions of changes in rate design.

Observation VI-30. MUC members perspectives vary, but MUC members all stated that communication with the community is improving but it also continues to need improvement.

Observation VI-31. Despite the MUC members perception that communication needs to increase, Daymark has identified that CPS Energy is communicating across all platforms in a way that surpasses CPS Energy's peer utilities.

Observation VI-32. MUC members shared in CPS Energy's concerns that increased uncollectible bills are a threat to financial sustainability and affordability.

Observation VI-33. The existing ad hoc nature of discussions and variability in personnel review creates the potential for gaps in understanding and judgement related

to when involvement in specific government relations is important, meaningful to CPS Energy, or could help to achieve company-wide goals.

Observation VI-34. While customer data may indeed exist, it does not exist in a format that is readily accessible, readily comparable, and/or matched to customer billing or program participation data, and therefore ultimately not actionable to improve overall customer experiences.

Observation VI-35. Daymark believes, based on interviews and data requests (in some cases, based on lack of data), that the underlying structure and software needed to make the connection between customer data, stakeholder input, and customer satisfaction is not adequate.

Customer engagement recommendations

Recommendation VI-1. CPS Energy should continue its stewardship, focusing on relieving energy burden through customer programs and rate design focused on the lowest 20% income strata of its customer base.

Recommendation VI-2. Integrate the benefits of energy efficiency, customer sited renewables, environmental justice and energy burden programs into resource planning processes to determine right-size funding.

Recommendation VI-3. Continue to ensure that there are plenty of programs within STEP that target LMI, senior citizen, and disabled citizen customers and target more outreach to these customers to increase enrollment; improve energy efficiency in households that otherwise may not have the ability to participate; and, as a result, lower these customers' bills.

Recommendation VI-4. CPS Energy should identify key pieces of data for each program that can inform its progress and success. By closing the resource gap to allow more data gathering and prioritization, CPS Energy could compare the many programs in place and ultimately evaluate program success in terms of delivering value to the direct customers and to the CPS Energy system. Better data tracking will allow cross program evaluation of the cost of implementing and running the programs, the number of customers enrolled in each program, change in customer involvement after an outreach event, the impact these programs have on arrearage, involvement per program per district, etc.

Recommendation VI-5. Energy Assistance programs should be given clear goals to track progress (e.g., reduce arrearage by some percent). From our observations, there are no goals in place that address enrollment, impact, customer satisfaction, etc. with relation to these programs. Further, customer perception of programs is not something publicly available or seemingly tracked through customer surveys. The impact of these programs can be improved with the implementation of clear goals and customer feedback to ensure that customer voices are taken into consideration.

Recommendation VI-6. Management, the Board, and the City Council should ensure that programs are being implemented with staff administrative capacity in mind, via informed conversations and communication. It is important to ensure that customer engagement staff are not administratively overburdened and can give adequate attention to the various already-existing programs, before implementing additional programs.

Recommendation VI-7. CPS Energy should ensure the community knows the extent of community assistance programs and benefits.

Recommendation VI-8. CPS Energy should invest in the resources necessary to connect the data of its billing system, customer surveys such as customer satisfaction, and program participation to enable analytics on customer needs to begin driving Company-wide operations.

Recommendation VI-9. CPS Energy needs to control ad hoc customer program requests and expectations for immediate implementation in order to strategically optimize program prioritization based on the analytical determination of customer needs and value.

Recommendation VI-10. Events that are primarily for the benefit of low-income customers should be focused in areas of high energy burden and districts with high arrearage.

Recommendation VI-11. CPS Energy should implement a way to measure the success of their outreach efforts. This could take the form of analyzing how customer involvement/enrollment in programs changes after outreach events, or how customer satisfaction in these areas changes after outreach events.

Recommendation VI-12. CPS Energy should assess the impact and root cause of the increasing customer call center response times being experienced and plan for appropriate remedies.

Recommendation VI-13. CPS Energy should study possible reengineering, including how to optimize staffing levels versus outside contractor utilization, to reduce its lead time requirements for new service requests.

Recommendation VI-14. CPS Energy should develop a Bill Format Modernization initiative that begins with mining and analysis of customer data from the many programs and surveys routinely conducted.

Recommendation VI-15. If there are limits on the bill format capability due to current systems, the need should be identified as quickly as possible for incorporation into the ERP specifications.

Recommendation VI-16. In addition to information on customer energy usage, CPS Energy should consider providing information regarding external factors affecting CPS Energy costs, such as cost of fuel, ERCOT energy prices, system performance, share of revenue that is paid to the City, or new clean energy projects entering service.

Recommendation VI-17. Establish a three to five-year plan for the customer engagement budget, staffing, and improved data gathering and focused analytics.

Recommendation VI-18. Commit to ERP specifications to support the tasks necessary to improve customer data gathering, storage, and analytics.

Recommendation VI-19. Daymark suggests that CPS Energy begin collecting customer satisfaction data at all points of contact and maintain this data in CRM software that is manageable, easy to use, and automatically matches customer satisfaction to billing data for verification.

Recommendation VI-20. CPS Energy should design surveys with the intent of measuring trust in a specific way and evaluating how customers' expectations and impressions of the company impact their perception and trust. The surveys need to be integrated with other customer data to enable CPS Energy to utilize the information to become customer driven.

Recommendation VI-21. CPS Energy should ensure a collaborative stepwise approach to engaging the RAC members in evaluating changes and modernization of its rate design, to ensure all members have the necessary information to participate fully.

Recommendation VI-22. CPS Energy should prioritize the documentation and preservation of the processes and procedures for addressing legislative activities.

ERP transition observations

Observation VII-1. The current ERP system is more than 22 years old, and there are several limitations that it presents to managing day to day activities across business units.

Observation VII-2. There is concern that the original vendor will stop supporting CPS Energy's current SAP system in 2027, which would mean that it would no longer receive updates, including security updates.

Observation VII-3. The cost of the ERP transition is not included in the recent rate increase. CPS Energy anticipates including some subset of the total ERP amount in the next rate request to the City, since the expectation is that the City will approve rates that allow CPS to fund the project two years at a time.

Observation VII-4. The CPS Energy ERP transition project will clearly demand significant support from CPS Energy's business and technology excellence division, but it will also require a significant investment of time from other departments.

Observation VII-5. The potential scope of the project is very large. An attempt to pursue a transition to an ERP system in all of the areas identified at once would likely put extremely large demands on CPS Energy staff to support parallel and interdependent projects. However, the final definition of project scope has not yet occurred and will not occur until after receipt of responses to the RFP.

Observation VII-6. The project will need continued support from both the Board and from the San Antonio City Council, as the expectation is that funding for the project will be made available only two years at a time.

ERP transition recommendations

Recommendation VII-1. Before executing a contract with a software vendor, CPS Energy should identify a de-risking strategy for the project, including considering the possibility of "chunking" or phasing the project, and should present this analysis to the Board along with its request for contract approval.

Recommendation VII-2. CPS Energy's de-risking strategy should include a plan for maintenance of the legacy system in case the new system cannot be rolled out on schedule.

Recommendation VII-3. In selecting a new CIO, experience in managing complex IT system replacement projects should be a key consideration.

Recommendation VII-4. Communication from CPS Energy to the Board and the City Council should be clear about the complexity, risk, and importance of this transition. The Board (and, to a lesser extent, the City Council) can play an important role in this project in working with CPS Energy to minimize any

external pressure for unnecessary system customization and to ensure that CPS Energy plans for the possibility of delay, and that the system is only rolled out when it is fully tested and ready.

APPENDIX B. ELECTRIC DELIVERY SYSTEM REFERENCED SYSTEM UPGRADE PROJECT PLANS

Project Name: Pinn Rd - Replace XFM/SWG#3
Project #: S-0868 **Infrastructure Modernization**
Budget Date: Phased **Estimated Cost:** $3,025,000

Project Description: Install a new 138/13kV, 40 MVA power transformer to replace the 35 MVA, 13kV Allis Chalmers transformer installed in 1970 at the Pinn Road substation in position #3. Install new Out-Door, Walk-In Metalclad MV Switchgear in position #3 to replace the Allis Chalmers switchgear installed in 1971.

Project Justification: The transformer and switchgear at the South San substation has been identified as part of the Infrastructure Modernization capital replacement program based on the age of the equipment. This equipment has been in service since 1970/1971 and is at the end of its useful life. Replacing the equipment at this substation will improve the overall reliability of the system and provide for continued service to our customers for many years forward. This project also implements a newer technology of switchgear that allows CPS Energy to reduce the amount of spare parts on hand and reduces the frequency of required periodic maintenance.

Expected Benefits: Replacing the transformer and switchgear produces the following benefits:

- Avoids unexpected failure due to age and condition.
- Reduces the risk of transformer failure well into the future.
- Reduces maintenance expenses.
- Increases system reliability.
- Reduces risk of adjacent damages caused by an unexpected failure.
- Newer style of switchgear is a more robust operating mechanism.
- Standardizes equipment to reduce spare part and training costs.

Project Risks: The primary risk of not replacing the transformer and switchgear is the risk of unexpected failure resulting in unserved customer load, possible property damage and potential environmental contamination. If the equipment is replaced on a reactive basis, significant increases in cost due to unplanned replacement can occur.

This equipment has been in service since 1970/1971. Approximately 4 transformers and 33 switchgear breakers per year must be replaced to sustain a 50 year life cycle for transformers and a 40 year life cycle for switchgear breakers or an unmanageable number of replacements (asset wall) will develop over time. Failure can be catastrophic. The metalclad switchgear requires frequent maintenance to rainproof the switchgear. Replacement is recommended to minimize risk associated with this type of equipment.

Associated Projects:

E-0217	Pinn Road - Underground Infrastructure Modifications
E-0217	Pinn Road Replace UG Exit Cables

Annual Cost:

FY2023	$30,000
FY2024	$2,995,000

A.15 FLISR Program

Project Name: FLISR Program
Project #: E-0269 **System Growth**
Budget Date: Annual **Estimated Cost:** $3,750,000

Project Description: Fault location isolation and service restoration (FLISR), is an automation application that detects a fault on the distribution system, isolates the fault and quickly restores service to customers connected on unaffected portion of the feeder automatically or with system operator intervention.

Project Justification: FLISR will automatically detect faults and restore service to as many customers as possible following detection of a fault. Additionally, FLISR functions will assist in improving SAIDI and CAIDI reliability indices as well as improve feeder configurations.

Expected Benefits: FLISR improves reliability of the electric distribution system by isolating the part of the distribution circuit that experience a problem and quickly restores service to customers connected on unaffected portion of the feeder automatically or with system operator intervention. FLISR can reduce the time and effort field resources must spend to locate a fault and contains these events to fewer customers and shorter durations.

Project Risks: Poor circuit reliability is directly correlated to low customer satisfaction. Without FLISR custumer migth experience more power interruption and longer outage duration.

Annual Cost:

FY2023	$750,000
FY2024	$750,000
FY2025	$750,000
FY2026	$750,000
FY2027	$750,000

APPENDIX C. ELECTRIC OPERATIONS SAMPLE EMERGENCY RESPONSE PLAN TABLE OF CONTENTS

REDACTED

Massachusetts Electric Company and
Nantucket Electric Company
d/b/a National Grid
D.P.U. 22-ERP-09
May 13, 2022 ERP Filing
Exhibit 1
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National Grid Massachusetts Emergency Response Plan, effective 5/13/2022

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REDACTED

REDACTED

APPENDIX D. GAS OPERATIONS SAMPLE TRAINING CURRICULUM

[Please see following pages.]

Engineering Cohort Program

2022 Gas Program Overview & Timeline

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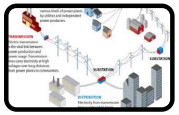
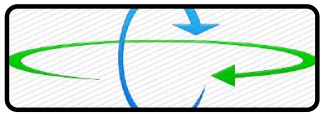




Core Orientation	Foundational Leadership / Technical Training	Rotational Assignments
▪ Business Area Presentations ▪ Basic Safety, and Ethics Training ▪ IT/BusApps ▪ Basic On-Boarding and Orientation **2 Weeks**	▪ Core Industry Training (eg GTI Gas Industry Program, NGA, etc) ▪ Integrated to Complement Rotational Assignments ▪ Combination of classroom and self study; ▪ Targeted courses based training and development curriculum; ▪ Classes developed and facilitated by Engineering SME's; ▪ Course development and deployment developed from existing Training and Development courses; customized to fit business needs. **3 Months**	▪ 4 to 6 rotations, ▪ Approximately one month or less ▪ Longer rotations based on core business locations (e.g.: Construction, Maintenance, Meter Services) ▪ Shorter rotations to include a variety of other gas departments (e.g.: I&R, Gas Control, Corrosion, LNG, Project Engineering, System Engineering, Major Project Management) ▪ Experience and contributions to the functional area ▪ Targeted learning objectives; team established ▪ Identify Rotational Leader/Mentor for each Mentee assigned to a specific area **6 Months**

Capstone Project — **2 Months Integrated Throughout the Duration of the Cohort Program**

2

Safety First and Always

Recruiting/Hiring Update

Info session with Gas Engineering panelists – # candidates in attendance

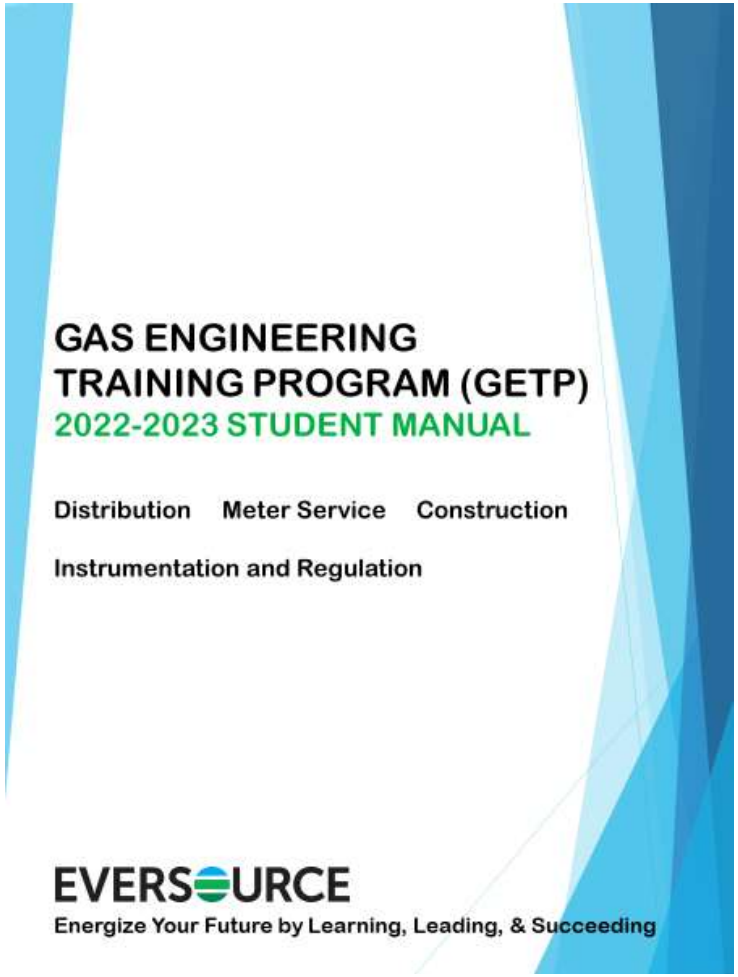
career fairs attended

interviews with # additional interviews scheduled

Goal for # offers extended by month/year

- Where located
- Mechanical, Civil, Electrical Engineering majors
- Partnerships with various organizations, schools (provide list here)
- Start date of program mm/dd/yy, see 12 month schedule below
- Planning to show these new hires how serious we are about creating a future for our talent at Eversource
- Detail about roles, Office space, computers, etc…day 1, PPE, Tyndale, ready to roll on day 1

2022 Cohort Program – Training and Development



2022 Cohort Program – Technical Training

- **The Technical Training portion**
  - Instruction Led Training (ILT) sessions.
    - Modelled after the supervisor program;
    - Includes self-study activities that directly support the ILT sessions;
    - On-the-job training tasks;
    - Knowledge checks to assess retention.
  - Self-guided learning
    - Options selected based on manager's input;
    - Scheduled by manager/cohort;
    - Introduces each cohort to resources, materials and information to gain further knowledge about the gas business

2022 Cohort Program – Technical Training

What to Expect

A Closer Look: Instructor-Led-Training (ILT) Self-Study Activities

A Closer Look: On-the-Job (OJT) Activities

A Closer Look: Self-Guided Activities

ILT Training and OJT Activities

- General Knowledge
  - Gas Basics
- Distribution
  - Corrosion
  - Leak Management
  - Damage Prevention
  - Pipe Joining
- Construction
  - Mains and Services
  - Tapping and Stopping (Cast Iron, Steel, Plastic)
  - Safety and Compliance
- Meter Service
  - Meters Overview
  - Pipefitting
- Instrument and Regulation
  - Overview
  - Critical Valve Inspection

2022 Cohort Program – Sample Self Guided Activities

Self-Guided Activities

In addition to the more formal training sessions and associated self-study activities, there are multiple resources available to help you discover and better understand the gas business and industry Resources are designated as required (R) or optional (O) participation or performance.

Eversource Business Software Products:

- Maximo (R)
- Gas EpochField (R)
- GIS (R)
- Docuware (R)
- DWG TrueView (R)
- IBM Notes (O)
- Primavera (O) – may be required by your manager
- SCADA (O) – may be required by your manager

General Knowledge Resources:

- The Eversource GOLD Program ®
- "Local Distribution Pipelines in Nontechnical Language" by Thomas Miesner (O)
- Eversource Developed PowerPoints:
  - Natural Gas 101 (R)
  - Basics of Flow Measurement Devices (O)
  - Odorization Operating Principles (O)
- Eversource ETV Channel Videos:
  - Joining Plastic Pipe – Electrofusion Coupling (R)
  - Hot Tapping Process (R)
  - Butt Fusion Process (R)
  - Locating underground leaks (R)
- Gas Distribution Self Study Course – (O)
- Gas Industry Vendor Sponsored Training/Information (O)
  - Fisher Regulator "Commercial Service Regulators - Principles of Operation"
  - Product Demonstration: Mueller NO-BLO® Line Stopping System
  - Product Demonstration: H-17650 Service Stop Tee
- Gas Industry Organization Sponsored Training and Presentations (O)
  - Learn about Natural Gas
  - Glossary of Terms
  - Accelerated Infrastructure Replacement
  - Natural Gas Safety
  - Learn about Liquid Natural Gas (LNG)
  - Natural Gas and the Environment

2022 Cohort Program – Focus Areas

FUNCTION	FOCUS AREAS
DISTRIBUTION	• Job Site Safety • Corrosion — Distribution Tasks • Corrosion — Dept. Observation (2 Days) • Leak Investigation • Leak Management — Dept. Observation (3 Days) • Damage Prevention — Dept. Observation (1 Week) • Critical Valve Inspection • Plastic Pipe Joining
CONSTRUCTION	• Service Installation & Replacement • Main Installation & Replacement • Cast Iron — Tie-Ins & Abandonments • Steel — Tie-Ins & Abandonments • Plastic — Tie Ins & Abandonments • Compliance & QA/QC — Dept. Observation (2 Days)
METER SERVICE	• Metering • Pipefitting
Instrumentation and Regulation	• Gate and Take Stations • District Regulator Stations • Odorant Testing • Valve Box Inspection • Critical Valve Inspection

2022 Cohort Program – Sample Distribution

DISTRUBUTION
Pipe Joining - Training

PIPE JOINING

ILT

- Joining Plastic Pipe, Manual Butt Fusion & Electrofusion
- Pipe Joining, Mechanical Fittings
- Tip Cards, Job Aids, Study Guides

SELF-STUDY ASSIGNMENT

OQ Study Guides (Approximately 20 minutes/study guide)

- PJ-01 Joining Metallic Pipe with Threaded / Flanged Fittings
- PJ-03 Joining Pipe: Mechanical Fittings (Bolt Style)
- PJ-04 Joining Pipe: Mechanical Fittings (Nut Follower/Stab/Other Style)
- PJ-05 Joining Plastic Pipe: Electrofusion Fittings
- PJ-06 Joining Plastic Pipe: Butt Fusion – Manual
- PJ-07 Joining Plastic Pipe: Butt Fusion – Hydraulic
- PJ-09 Installing & Tapping a Bolted Tapping Tee

General Knowledge Resources

- ETV Video: Electrofusion Coupling Joining Process
- ETV Video: Butt Fusion Process

Procedure Review

- OM-270-ADM Polyethylene Plastic Pipe Installation and Repair Practices
- OM-270 Polyethylene Plastic Pipe Installation and Repair Practices

LEARNING CENTRAL GSTP ASSESSMENT — PIPE JOINING

To access the Pipe Joining assessment, select this Learning Central link:
GSTP Assessment — Pipe Joining

2022 Cohort Program – Sample Distribution

DISTRUBUTION
Pipe Joining – OJT Tasks

OJT ACTIVITIES Plastic Pipe Joining	
Assignment Type	Details
Material You Can Reference	• OM-270-ADM Polyethylene Plastic Pipe Installation and Repair Practices • OM-270 Polyethylene Plastic Pipe Installation and Repair Practices
Processes or Tasks to Observe	• Crews Performing Plastic Pipe Joining • Pipe Fitting
Activities to Complete	• Take pictures of various joints observed in the field • Practice joining in the shop for PE Evaluation (hold sample for discussion with manager)
Topics to Discuss with Your Manager	• Visual Acceptance Criteria for Plastic Pipe Joints • What to Do When a Joiner Has a Failed Production Fusion

2022 Cohort Program – Rotational Assignments

Rotational Learning Objectives – Varying Lengths based on Hiring Manager Focus

- Rotational Assignments
  - **System Engineering (Asset Management, GIS & Records, Policy & Compliance, System Planning, Project Engineering, Project Management):**
  - **Planning, Scheduling and Resource Management (P&S, Project Controls, Project Management)**
  - **Construction**
  - **Maintenance**
  - **I&R**
  - **Various short rotations (Gas control, corrosion, meter services, LNG, Leak survey etc)**
- To the extent possible, Cohorts will complete relevant training prior to rotational assignment
- Each of the rotational assignment has targeted learning objectives

2022 Cohort Program – Next Steps

- Complete Initial Onboarding Agenda
- Integrate Onboarding, Technical Training, Professional Development and Rotational assignments into the Cohort Development Plan.
- Complete Schedule and Progress Tracker
- Complete Hiring Process – Target June 1.
- Establish Mentors, Rotational Mangers and Rotational Guides
  - Welcome your advice
- Develop Capstone Projects
- Implement the Program
- Start date July 11, 2022
  - Day 3 will be leadership introductions and department overviews

2022 Cohort Program – Next Steps

Thank- you & Questions

APPENDIX E. GAS OPERATIONS SAMPLE WINTER SEASON SYSTEM MANAGEMENT PLAN

[Please see following pages.]

Plan Structure Element	Description and Key Considerations
1 Plan Goal	-Ensure safe, reliable gas distribution service to customers during periods of high demand -Collect and compile cold weather proactively address operational issues, validate system models, identify need for immediate or scheduled maintenance and system improvements. -Improve organizational coordination. -Enhance operational knowledge across all personnel -Establish clear roles and responsibilities across the organization.
2 System Assessment	-Regulator capacity review and mitigation -Identify key monitoring points based on criticality or known/forecasted low pressure -List of winter set points by station -Review and update SCADA alarm settings -Maintain a log of maintenance activities and recommendations for system upgrades. -Ensure all pre-season system maintenance/upgrades are complete. -Perform post-winter operations organizational review to determine lessons learned and implement mitigation plans prior to the next season.
3 System Monitoring	-Perform pre-and post-winter reviews with all operational stakeholders; e.g. engineering, system planning, field operations, gas control, gas supply, supplier operations, large customer representatives, corporate communications. -Publish list of key regulator stations -Determine location and install temporary pressure monitoring gauges -Identify risks and mitigation plans from input across the organization. -Develop a temperature/volume profile to determine when additional flows into the systems will be necessary. -Field Engineering will monitor the forecast using the above weather station and initiate system monitoring when the low ambient temperature is forecasted to reach the following triggers: EXAMPLE:
4 Communications and Operations	-During abnormal operations take actions in accordance with the C*ompany Standards, Written Procedures, Curtailment Plan, and Emergency Response/ICS Plan* -Consider enhanced instructions for field personnel based on risk potential and critical system impacts. -Establish reporting procedures and data collection eg., roles and responsibilities, temperature, time, pressure observations, abnormal equipment operations, mitigation measures taken or required, report routing and storage. -Establish standard reporting forms, routing and storage locations. -Ensure all regulators are adjusted to operate within MAOP limits prior to winter operations season. -Conduct pre-monitoring planning meeting with all stakeholders at least 24-hours prior to forecasted winter event.
5 Key Contacts and Roles	-Maintain list of all stakeholder personnel with contact information, call-out requirements and assigned role.
6 Forms	Examples of standard forms, lists, tables, sources, instructions, routing information, etc.

Design Temperature = -23°F	Monitoring Temperatures (°F)
First Occurrence	20
First Occurrence	15
First Occurrence	10
First Occurrence	5 (Special notification 24 hours in advance to Kim Lambert)
Every Occurrence	0 or below

-Determine common Weather monitoring stations.