Chief Executive Officer and General Manager's Report and Recommendation on

Rates and Services

June 15, 2023 | Volume 1

Powering forward. Together.

SMUD®

Chief Executive Officer
& General Manager's Report
and Recommendation on

Rates and Services

Residential, Agricultural, Commercial and Lighting Rate Changes

June 15, 2023

A Sacramento Municipal Utility District Publication

Chief Executive Officer & General Manager’s Report and Recommendation on Rates and Services

June 15, 2023

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Table of Contents

List of Figures

List of Tables

Rate Requirements and Recommendations

Executive Summary

This Chief Executive Officer & General Manager's Report and Recommendation on Rates and Services (Report) explains staff's proposed changes to SMUD Rates, Rules and Regulations.

The electric utility industry continues to face substantial change in technology, business models, regulatory and cost pressures, while simultaneously striving to achieve ambitious climate goals. In 2021, the SMUD Board approved our 2030 Zero Carbon Plan, which is our road map to achieve zero carbon in our power supply by 2030, with broad air quality, health and inclusive economic and workforce development benefits. It's the most ambitious carbon reduction goal of any large utility in the United States. The 2030 Zero Carbon Plan creates a flexible pathway to a clean energy future that's anchored on our longstanding commitment to provide safe and reliable power with rates among the lowest in California. Importantly, the 2030 Zero Carbon Plan is inclusive to help ensure all communities benefit from decarbonization. We won't compromise on this commitment.

We've made significant progress on our 2030 Zero Carbon Plan, forging strong partnerships to deliver key projects, including electric vehicle charging hubs and the largest all-electric multi-family retrofit project in California. We've also positioned SMUD strongly to compete successfully for grant funding for clean energy projects. Together, these partnerships and grant opportunities fund clean energy projects, significantly reducing the impact to SMUD's rates.

The impacts of the current economy, near record inflation and tight energy markets have created challenges for everyone, through sharp increases in the cost of goods, services and energy prices.

Throughout the uncertainty of the COVID-19 pandemic and today in the post-pandemic era of higher costs, SMUD continues to take a risk-based approach to prioritize spending. Our disciplined cross-company approach to operational excellence has delivered significant operational savings that helps mitigate the impact of higher costs. However, SMUD is not immune from the significant, economy-wide cost pressures. The most significant costs putting upward pressure on our rates include:

- Factors impacting reliability:
    - New generation projects and higher commodity costs for California clean energy compliance requirements.
    - Infrastructure investments to maintain a reliable grid.
    - Wildfire prevention and mitigation.
    - Reliability for our generation facilities.
- Customer programs to support our 2030 Zero Carbon Plan.
- Inflation and increased operating costs, including materials, services and labor costs.

To balance keeping rates affordable while ensuring we meet strong financial metrics, SMUD staff is recommending four rate increases of 2.75%, one each in January 2024, May 2024, January 2025, and May 2025, which will apply to all customer classes. Even with these proposed rate increases, our rates will remain among the lowest in the state.

SMUD has worked diligently to keep the proposed rate increases as low as possible, while supporting the investments necessary to deliver on our commitments to our customers and community. Many utilities have increased their electric rates significantly across the state to align with these increasing costs and we continue to see surrounding utilities raising their electric rates. Across the country, consumers paid 14.3% more for electricity in 2022, on average, than in 2021[1].

SMUD recognizes that rate increases, however small, impact our customers. So before recommending a rate increase, we looked at our processes and operations to identify ways we can improve efficiency and save money. Over the last year, SMUD's Operational Excellence program delivered numerous savings, including refunding outstanding bonds at lower interest rates, the sale of our loan portfolio to a local bank which reduced SMUD labor costs, and recovered costs from the Department of Energy for our Rancho Seco Fuel Storage.

SMUD has also developed an integrated Grant Strategy Framework, which will best position us to secure sources of funding to deliver on our 2030 Zero Carbon Plan. We are focusing on eight main areas when pursuing grants – clean fuels, carbon capture, long duration energy storage, building electrification, transportation electrification, load flexibility, under resourced communities and climate emergency prevention. Since February 2022, we have pursued 23 state and federal grants, with 12 grants currently being delivered, enabling over $42 million in projects. Examples of grants received include grants focused on electric vehicle charging for underserved communities and multi-family housing, and for building resilient infrastructure and communities.

SMUD recognizes the needs of our under-resourced community, particularly those who qualify for our Energy Assistance Program Rate (EAPR). Our current EAPR discount is based on income level, using the Federal Poverty Level (FPL) as the guideline, allowing us to provide more assistance to customers who need it the most. Even with this structure, we recognize that our customers most in need, which fall in the range of 0-50% of FPL, are still struggling. We're proposing to use approximately $2 million of discretionary non-retail rate revenue to increase assistance to those customers.

Additionally, staff recommends updating the rate holidays to align with the Federal holidays, improving the Hydro Generation Adjustment rate schedule by adding a proposed Western Area Power Authority (WAPA) hydro generation component, modifying the Generator Standby Charge and other minor rate clean up items.

We invite our customers and the community to learn more about the rate proposals and share feedback. Public workshops will be held both in-person and virtually this summer to allow customers options for

[1] Source: Utility Dive via CPI data https://www.utilitydive.com/news/electricity-prices-inflation-consumer-price-index/640656/#:~:text=Dive%20Brief%3A&text=The%20price%20of%20residential%20electricity,by%20a%20penny%20in%202024.

how they would like to share their feedback and still feel safe. For more information, see the Workshops and Community participation section on page 22.

Board Strategic Direction

SMUD's Board established 19 Strategic Directions (SDs) to guide business decisions and SMUD's operations. The full description of all SDs can be found in the Strategic Direction section in this Report and at smud.org/StrategicDirection. The recommendations in this Report are primarily driven by the Board's Competitive Rates Strategic Direction 2 (SD-2). SD-2 includes the following objectives:

- Establish rate targets that are 18% below Pacific Gas and Electric (PG&E) system average rates and at least 10% below PG&E published rates for each customer class.
- Be competitive with other local utilities on a system average rate basis.
- Reflect the cost of energy when it is used or exported to the grid.
- Reduce consumption during periods of high system demand.
- Encourage energy efficiency, conservation and carbon reduction.
- Encourage cost-effective and environmentally beneficial Distributed Energy Resources (DERs) (examples include but are not limited to rooftop solar, battery storage and energy reduction applications).
- Minimize the rate of change in the transition from one rate design to another.
- Provide customers flexibility and choices.
- Be as simple and easy to understand as possible.
- Address the needs of people with low incomes and severe medical conditions.
- Equitably allocate costs across and within customer classes.

In addition to these rate design objectives, the proposed rate changes can help meet SMUD's financial targets and other strategic directions by:

- Maintaining cash coverage of all debt service payments (fixed charge ratio) of at least 1.50.
- Maintaining days cash on hand of at least 150 days.
- Maintaining access to credit markets.
- Maintaining SMUD's credit rating, which reduces borrowing costs and related rate increases.
- Striving to achieve our 2030 Zero Carbon Plan goal of eliminating greenhouse gas (GHG) emissions from our electricity production by 2030, while maintaining reliable and affordable service and partnering with our customers, communities and a wide-range of stakeholders.
- Meeting the Board's reliability targets while making funds available to increase efforts to support system upgrades and preventive and corrective maintenance of our existing

infrastructure, which is critical to the safe and reliable operation of the transmission and distribution systems.

- Providing SMUD with the resources to invest in safety, customer satisfaction, public trust and confidence.

A full list of SDs with their descriptions can be found in the section titled Strategic Direction later in this document.

Rate Increase Drivers

SMUD continues to face cost pressures for compliance and risk mitigation requirements, as well as technology and grid investments to support the safe and reliable operation of the grid. It's important that we balance keeping rates affordable while ensuring we maintain strong financial metrics, which are measures of financial health. SMUD's financial viability is imperative to be able to deliver on our vision and purpose, as set out in the Board's Strategic Directions.

Based on current forecasts, staff proposes a total of four 2.75% rate increases for 2024 and 2025 effective the dates shown in Table 1.

Table 1 – Proposed Rate Increase Percentages and Effective Dates

Effective Date	Proposed Rate Increase
January 1, 2024	2.75%
May 1, 2024	2.75%
January 1, 2025	2.75%
May 1, 2025	2.75%

These support our commitment to keep rate increases at or below the rate of inflation through 2030. These increases translate into approximately an average monthly bill increase for residential customers of $3.61 from the January 1, 2024 rate increase, an increase of $3.72 from the May 1, 2024 rate increase, an increase of $3.81 from the January 1, 2025 rate increase and an additional $3.92 in May 1, 2025 rate increase.

The rate increases are driven by increased costs. Our largest cost drivers are outlined below, with the amount of the expected cost increase. There are other areas of increasing costs, but these are the key contributors to the rate increase.

- **Reliability**: Maintaining our world-class reliability is critical to our success, therefore we continue to invest to ensure our grid stays reliable. Here are some key areas we're expecting to see cost increases to support our reliability.
    - **Commodity costs are increasing by $93 million** for our reliability and to meet new state Renewable Portfolio Standards requirements, of which $33 million is related to additional zero carbon commodities. SMUD is investing in clean energy resources like more wind, solar, geothermal, hydropower, battery storage and biogas to meet updated state requirements, keep the grid reliable and safe while also supporting SMUD's 2030 Zero Carbon Plan goals.

    - **Increased capital spending of $370 million**. Because we borrow for a portion of our capital spending, the rate impact is based on the additional interest costs of the borrowing. Borrowing helps keep rate increases lower because it spreads the purchase price over many years.
        - Spending for **new generation & storage capital projects,** such as our Solano 4 Wind Turbine project, several solar and storage projects and our long-duration energy storage projects, will help us meet our California Mandates for Renewable Portfolio Standards Compliance requirements.
        - **Substation and line capacity projects** to ensure our grid stays reliable.
    - **Wildfire and vegetation management is increasing by $10 million**. This spending is to prevent and mitigate wildfires. Wildfire risk in California continues to grow. We're also investing to improve our reliability and visibility into outage responses to severe winter storms.
    - **Reliability for our hydro facilities and thermal generation is increasing by $15 million.**
- **Customer programs to support our clean energy vision are increasing by $15 million**, including load flexibility and load management, transportation electrification, distributed energy resources and low-income electrification.
- **Inflationary impacts of $25 million** are increasing our Operations & Maintenance (O&M), Public Goods and Capital Spending. Due to inflationary pressures, we're continuing to see higher costs for many materials, services and labor that we use every day, and the impact it's had on global supply chains. Additionally, fuel commodity prices for our thermal generation have been increasing.

We continue to use a risk-based approach to prioritize spending for 2024 and 2025, while looking to find ways to offset higher costs and ensure that the required rate increases stay within general inflation. Additionally, we've launched operational excellence and prioritization initiatives that have resulted in a new approach to budgeting and prioritizing work, which will ensure that SMUD meets its financial targets, and uses a risk-based prioritization process to determine what to stop, start and continue. By focusing on Operational Excellence, staff works to identify small efforts that can deliver significant, sustainable savings and create permanent cost reductions and operational efficiencies. In the past, we've successfully created permanent cost reductions through Operational Excellence efforts and continue to double down on our efforts to achieve further cost savings. For example, we recently saved about $60 million from a combination of one-time and ongoing Operational Excellence efforts, including ongoing interest savings from refunding our bonds with lower interest rates, recovering costs from the Department of Energy for our Rancho Seco Fuel Storage, selling our loan portfolio to a local bank and reducing SMUD labor costs with no impact to loan customers and securing Federal grant funding for neighborhood electrification. These cost savings helped reduce the recommended rate increases.

We've also developed an integrated Grant Strategy Framework, which will best position us to secure sources of funding to deliver on our 2030 Zero Carbon Plan. SMUD is focusing on eight main areas when pursuing grants – clean fuels, carbon capture, long-duration energy storage, building electrification, transportation electrification, load flexibility, under-resourced communities, and climate emergency prevention. Since February 2022, we've pursued 23 state and federal grants, with 12 grants currently being delivered, enabling over $42 million in projects. Examples of grants received include grants focused on electric vehicle charging for under-resourced communities and multi-family housing and for building resilient infrastructure and communities.

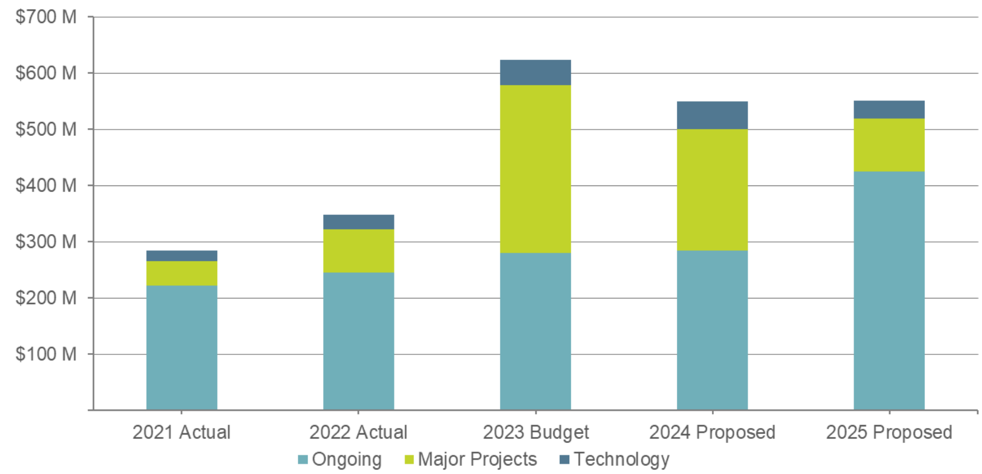
Utility operations are complex. SMUD is required to meet a wide-range of mandates, regulations and environmental, cybersecurity and wildfire prevention requirements, while ensuring reliability and safety. Moreover, as a community-owned, not-for-profit, SMUD adds new programs, services and initiatives each year to ensure we're meeting our customers' expectations and advancing our leadership position in the industry. Our goal is to absorb cost increases and new program costs within existing budgets wherever possible.

It's important to note that community-owned utilities, and specifically SMUD, are viewed positively by credit rating agencies. In addition to superior risk management, sustainable levels of debt issuance and prudent cash reserves, rating agencies cite the Board's willingness to act decisively and set rates necessary to ensure financial sustainability and meet targets and goals. While the independent ability to set rates has always been an advantage, Fitch and Moody's both recognized it as a factor that helps keep community-owned utilities' credit ratings relatively higher, which lowers borrowing costs and helps minimize overall rate increases. We estimate that our current credit rating of AA by S&P and Fitch saves SMUD customers approximately $400,000 annually for every $100 million borrowed over an A rating. This adds up to a significant amount over the life of a 20 to 30-year bond issuance. Our higher credit rating reduces letter of credit expenses and collateral posting requirements, gives us additional options for types of variable rate debt and helps to negotiate better power purchase agreement prices.

Capital Expenditure Forecast

In addition to upgrading the electric system, we continue to build additional renewables as well as grid infrastructure to ensure reliability, reduce carbon and meet customer needs. Major projects planned include two substations serving the downtown Sacramento load, improving capacity and reliability. We'll also add another wind generation facility to interconnect with our existing wind fleet at Collinsville in Solano County. Other key projects include expanding our solar and storage facilities and building a new Control Center. Ongoing projects include required maintenance overhauls on our natural gas-fired power plants to ensure reliable operation before being retooled or retired as part of the 2030 Zero Carbon Plan, improvements to hydro generation facilities, updating infrastructure such as replacing poles and underground cable and distribution system enhancements, such as substations, for load serving capability and wildfire related undergrounding. Load serving capability is the maximum load that can be served with all power generating facilities in service while meeting all applicable reliability standards. Figure 1 shows capital expenditures through 2025.

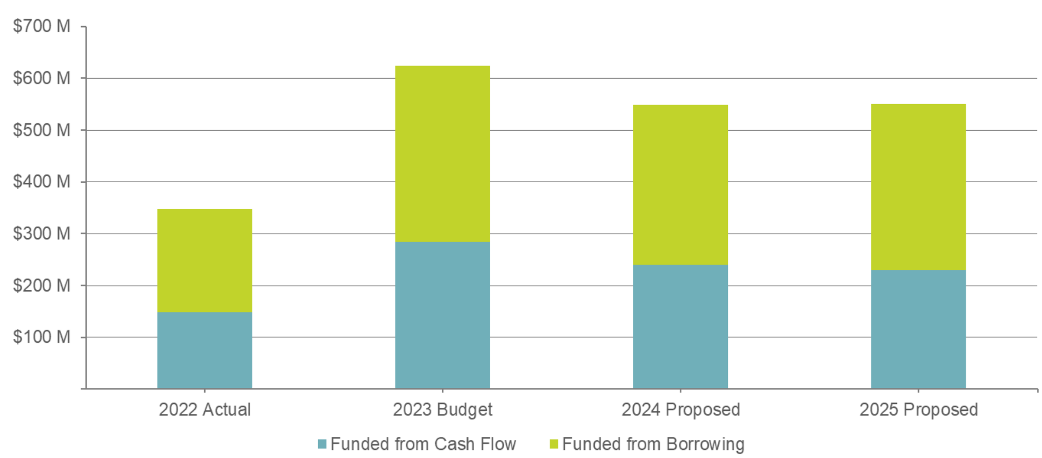
Figure 1 – Capital Expenditures 2021-2025 (Millions)



Capital Program Funding

SMUD funds its capital projects in two ways: through cash flow (customer revenue in excess of operating costs and debt service) and through new borrowing/debt. To help fund the capital program, we're forecasting a debt issuance in 2023. SMUD limits the term of any new debt with the economic life of the asset it is funding. To have sustainable access to credit markets at favorable rates, and to maintain our long-term financial health, we must balance the percentage of capital projects funded by debt and cash flow. Investments like technology and our vehicle fleet have relatively short lives and are typically funded with cash flow. Longer life assets, such as electric substations, are funded with a combination of cash flow and debt. We have local and regional projects needed to support the 2030 Zero Carbon Plan as well as our Renewables Portfolio Standard. Some of these projects include the Country Acres solar/battery storage project, Solano 4 Wind project, SMUD-ESS partnership with long-duration energy storage project, Coyote Creek solar/battery storage and Sloughhouse solar projects. These projects are funded through a combination of resources including power purchase agreements (PPA), debt and cash. Figure 2 shows the proposed amount of capital funding by cash flow and by borrowing.

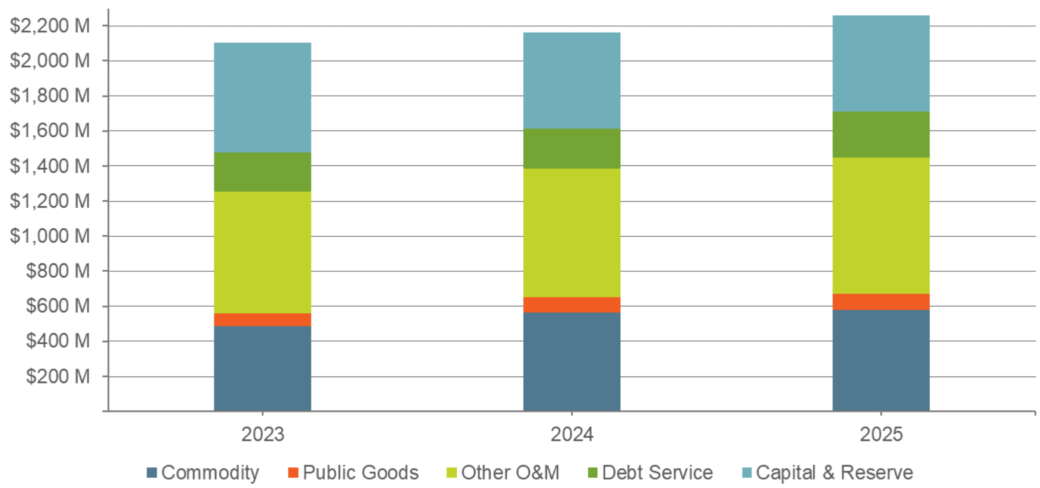
Figure 2 – Capital Program Funding (Millions)



SMUD's Operating Costs

One of our largest operating costs is power supply, which consists primarily of wholesale electricity purchases, the cost to procure transmission and the cost of fuel used to generate electricity to serve our customers. Debt service, which is 11% of total operating costs, is the cost of money borrowed to acquire and build the power plants and infrastructure needed to serve SMUD customers. Power supply and debt service together represent approximately one-third of total operating costs. As shown in Figure 3, Capital, O&M and Public Goods represent the remaining two-thirds of our operating costs.

Figure 3 – Cost Breakout (Millions)

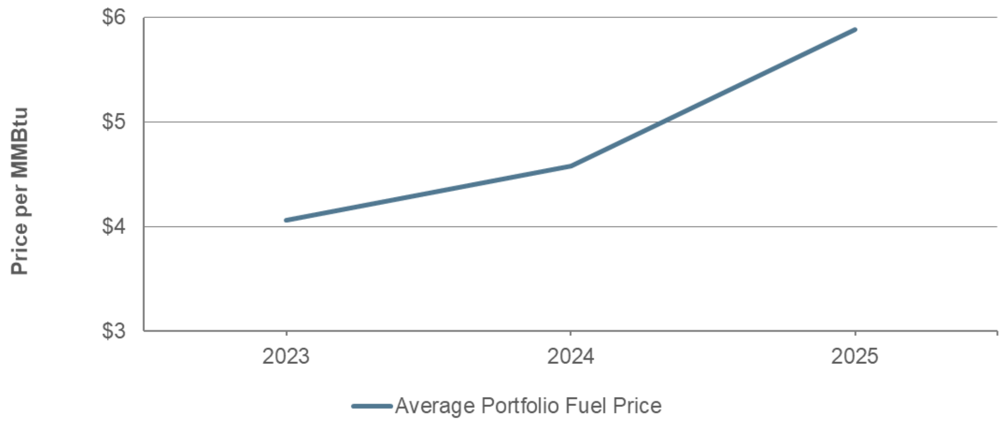


Power Supply Costs

In addition to being one of the largest parts of the operating budget, power supply costs have the most potential to change dramatically from year to year due to fluctuations in commodity prices, precipitation and weather. We've locked most of our renewable electricity purchase costs with multi-year, fixed-price power purchase agreements that are not impacted by short-term contracts in compliance with California's Renewables Portfolio Standard. We also hedge electricity and natural gas costs to reduce price volatility for customers.

Figure 4 shows the projected average cost of natural gas and biogas based on these multi-year fixed-price contracts and the forecasted price of natural gas market prices.

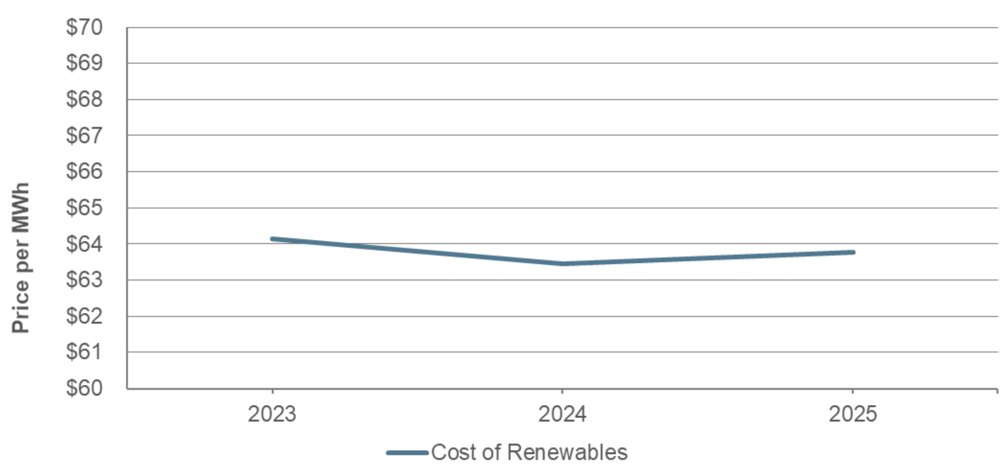
Figure 4 – Projected Fuel Cost (Natural Gas and Biogas)



Includes locked natural gas contracts, locked biogas contracts and forecasted natural gas market prices.

We also procure renewable energy, such as wind, solar, batteries, biomass and geothermal through long-term contracts in compliance with California's Renewables Portfolio Standard and our 2030 Zero Carbon Plan. These resources have historically been more costly than non-renewable energy sources, like natural gas.

Figure 5 – Projected Cost of SMUD's Renewable Resources



Includes wind, solar, biomass, small hydro, dairy digester and geothermal generation; excludes biogas.

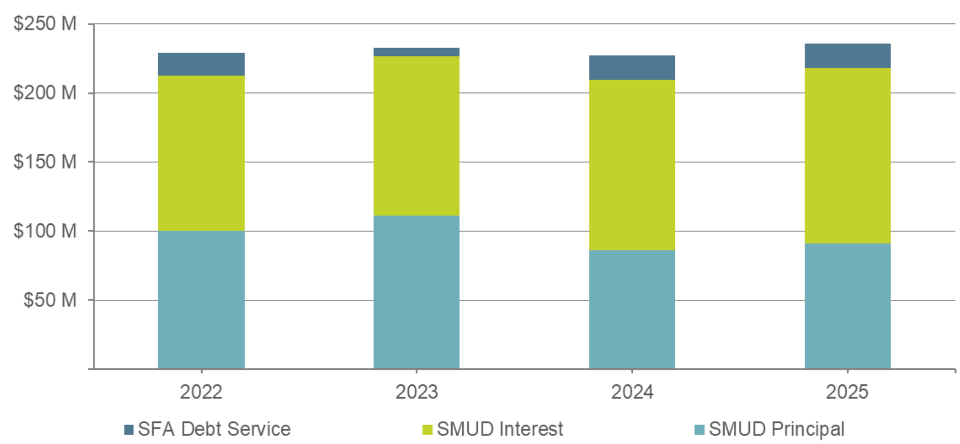
In an average year, we receive about 20% of our energy from hydroelectric generation, primarily from the Upper American River Project (UARP) and deliveries from the Western Area Power Administration (WAPA). The actual amount of hydroelectric energy received can vary from 8% to 35%, depending on reservoir levels and the amount of precipitation received during the water year. WAPA's generation is also influenced by WAPA's energy use for pumping, water deliveries for agriculture and flow requirements in the Sacramento-San Joaquin River Delta. These variations can have a major impact on the volume of energy we must buy from the market in any one year, which significantly impacts our power supply costs in any given year. The rate increases proposed in this Report are based on hydro generation from a normal water year.

We have a revenue smoothing mechanism that sets aside revenue generated in a wet year to pay for the extra power purchases needed in a dry year. This has helped insulate SMUD customers' bills from weather impacts, even during prolonged droughts. Additionally, staff is recommending adding the WAPA hydro generation to the Hydro Generation Adjustment (HGA) tariff to provide an additional smoothing mechanism. See Section "Modifications to the Hydro Generation Adjustment" for more details.

Debt Service

Our current rates generate sufficient annual cash flows to cover existing debt service (principal and interest) payments. However, due to projected increased capital expenditures as shown in Figure 2 – Capital Program Funding, we may need to increase debt levels and debt service payments to partially fund these investments, in addition to what's already forecasted in 2024. This increase may impact financial metrics and may also require future rate increases to maintain the fixed-charge coverage ratio – the ratio of annual cash flows to annual debt service payments. Maintaining a strong fixed-charge coverage ratio and sufficient days cash on hand helps ensure we continue to receive a good credit rating, which in turn helps keep costs low, minimizing overall costs and the need for rate increases.

Figure 6 – Bond Debt Service Payments (Millions)



SFA stands for SMUD Financing Authority.
The figures in the chart above do not include debt service relating to the commodity prepay transactions.

Table 2 shows the forecast of select financial and rate information for 2023 through 2025, including a forecast of new debt issuance and fixed charge ratio. We plan to a fixed-charge ratio of 1.7 and a minimum of 150 days cash on hand. The 1.7 fixed-charge ratio allows us to stay in compliance with bond requirements in the event of various weather and operating conditions or any unforeseen events. With the proposed rate increase and projected debt issuances, the 2025 projection ends with 151 days cash on hand.

Table 2 – Forecast of Selected Financial and Rate Information

	2023 Budget	2024 Projection**	2025 Projection**
Proposed January System Rate Change	*	2.75%	2.75%
Proposed May System Rate Change	*	2.75%	2.75%
Net Income ($M)	$131	$92	$68
Fixed Charge Ratio	2.08	1.92	1.73
Amount of Debt Issued ($M)	$340	$310	$320
Net Change in Debt ($M)	$227	$211	$201
Days Cash on Hand	151	159	151

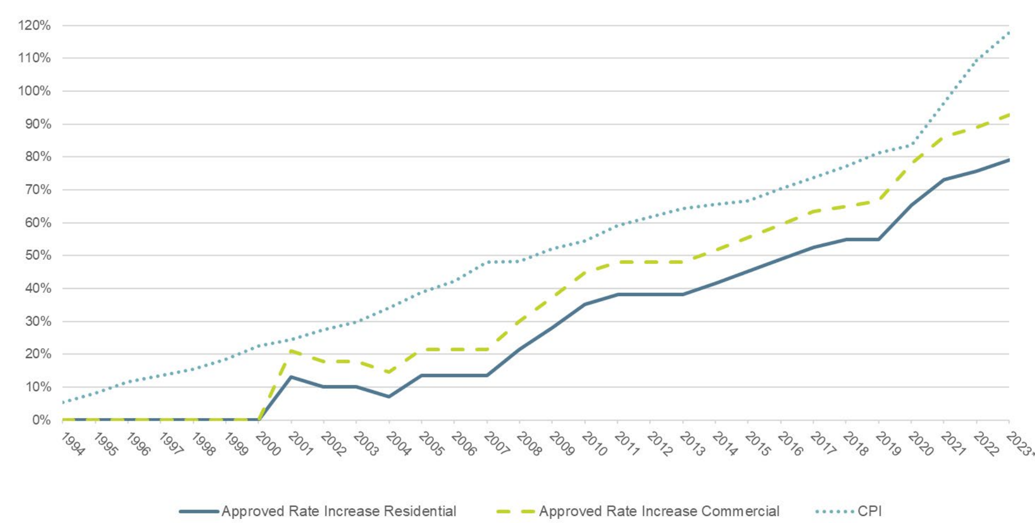
*2023 rate increase of 2.0% for all customers already adopted and not presented here.
**Projections for 2024 and 2025 includes four 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025, and May 1, 2025.

Competitive Position

Strategic Direction 2, Competitive Rates

SD-2 establishes guidelines for SMUD's rates compared to neighboring utilities. We've consistently met or exceeded SD-2 guidelines. For almost 30 years, our system average rate (revenue divided by kilowatt-hour (kWh) sold) has increased at or below the general rate of inflation, as measured by the Consumer Price Index (CPI), shown in Figure 7 As a result, electric service in the Sacramento area has remained affordable.

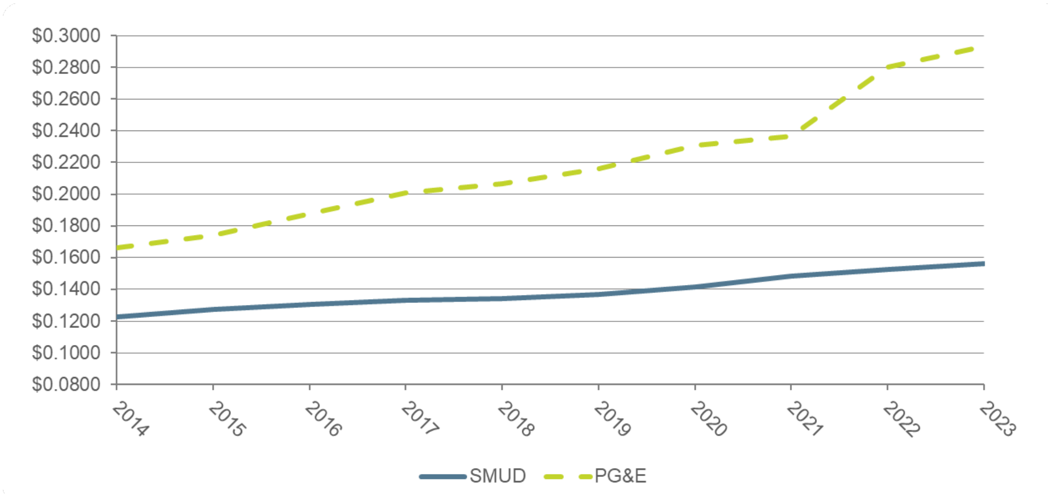
Figure 7 – Annual Rate Increase vs. Consumer Price Index



Source: SMUD's historical adopted rate increases for data through 2023. Historical CPI data from Bureau of Labor Statistics. *Forecasted CPI data for 2023 from IHS Markit.

The SMUD Board's SD-2 specifies that we will maintain its system average rate at a level that's at least 18% below that of PG&E. Our projected 2023 system average rate is 15.65 cents per kWh, which is 46.6 % lower than PG&E's projected system average rate for the same year. SMUD rates have been significantly below PG&E's rates for the more than a decade. Figure 8 shows the comparison of the last decade.

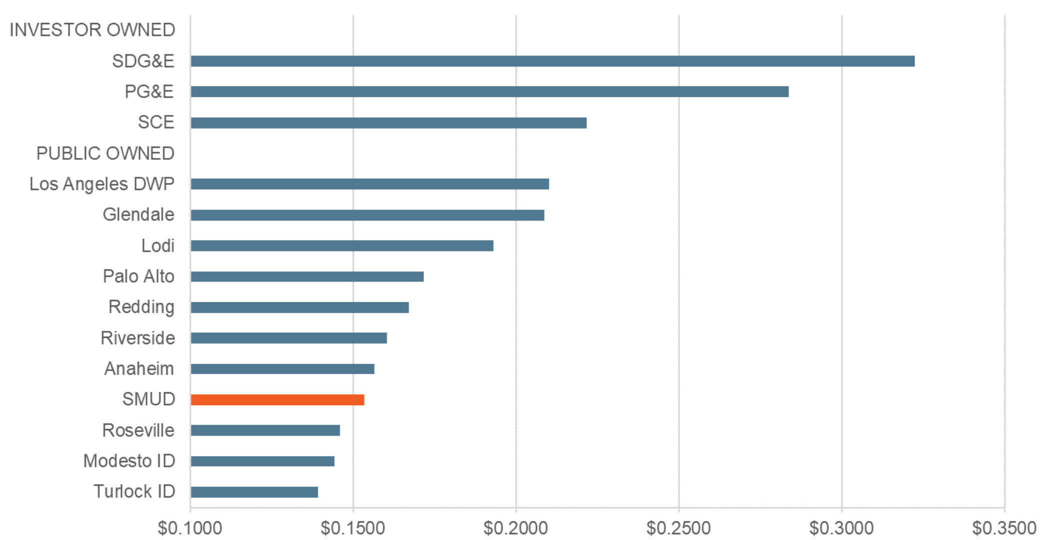
Figure 8 – SMUD vs. PG&E System Average Rates



Source: EIA 861 survey through 2021. 2022 rates from EIA 861M. 2023 rates from PG&E's Advice Letter 6946-E, dated 5/22/23 and SMUD's 2023 forecasted system rate.

In addition, SMUD rates are lower than those of most other California electric utilities. As shown in Figure 9, our 2022 system average rate was 31% to 52% lower than that of the three large California investor-owned utilities: PG&E, San Diego Gas & Electric (SDG&E) and Southern California Edison (SCE). Our rates are also lower than the system average rate for most of the state's publicly owned utilities.

Figure 9 – California Utilities System Average Rates ($/kWh)



Source: EIA 861M 2022 and self-reported data from utilities.

Table 3 shows that our 2023 average system rates are projected to be 46.6% lower than PG&E and most commercial rates are priced even lower. SD-2 also establishes a metric for competitive system rates that are 10% below PG&E for every major rate class. After the proposed rate increases in 2024 and 2025, and assuming PG&E's rates do not increase for the same years, SMUD rates would remain 43.9% and 40.8% lower than PG&E respectively.

Although not included in Table 3, PG&E did file its 2023 General Rate Case requesting additional rate increases for 2023, 2024 and 2025 of approximately 9.6%, 2.4% and 1.9% respectively.

Table 3 – SMUD vs. PG&E Comparison Class Average Rates ($/kWh)

Customer		Rate Categories		Average Annual Rate [1]		SMUD Difference Below PG&E		
Class	Description	PG&E	SMUD	PG&E	SMUD			
				2023	2023	2023	2024	2025
Residential	Standard	E-1	TOD	$ 0.3557	$ 0.1796	-49.5%	-47.2%	-44.2%
	Low-income	CARE [3]	EAPR EAPR/MED [3]	$ 0.2264	$ 0.1253	-44.6%	-41.8%	-37.9%
All Residential				**$ 0.2991**	**$ 0.1710**	**-42.8%**	**-40.0%**	**-36.4%**
Small Commercial [2]	≤ 20 kW	A-1	CITS-0	$ 0.3390	$ 0.1739	-48.7%	-46.3%	-43.1%
	21 - 299 kW	A-6	CITS-1	$ 0.3324	$ 0.1607	-51.7%	-49.3%	-46.4%
Medium Commercial [2]	300 - 499 kW	A-10	TOD-2	$ 0.3187	$ 0.1501	-52.9%	-50.5%	-47.6%
	500 - 999 kW	E-19	TOD-3	$ 0.2757	$ 0.1408	-48.9%	-46.4%	-43.3%
Large Commercial [2]	≥ 1 MW	E-20	TOD-4	$ 0.2185	$ 0.1203	-44.9%	-41.8%	-38.9%
Lighting	Traffic Signals	TC-1	TS	$ 0.3327	$ 0.1377	-58.6%	-56.6%	-54.0%
	Street Lighting	Various	SLS, NLGT	$ 0.4538	$ 0.1564	-65.5%	-64.4%	-63.0%
Agriculture	Ag & Pumping	AG	ASN/D, AON/D	$ 0.3093	$ 0.1525	-50.7%	-48.3%	-45.4%
System Average				**$ 0.2931**	**$ 0.1565**	**-46.6%**	**-43.9%**	**-40.8%**

SMUD revenue excludes pilot rates and Greenergy® program revenue. Revenue is based on 21-cycle forecasted monthly sales. The totals may not add up due to rounding.

1. Projected 2023 average prices for SMUD with 1/1/2023 rates. PG&E average prices in 2023 reflect rates effective 6/1/23, per Advice Letter 6946-E, dated 5/22/23.
2. SMUD commercial & industrial rates include WAPA credits.
3. CARE vs. EAPR includes EAPR and EAPRMED customers. There is no indication from PG&E that their CARE rates include customers who have a medical allowance only.

Workshops and Community Participation

We'll hold two public rate workshops and a final public hearing on the dates outlined below. At these meetings, staff will present details about the proposed rate changes and provide additional information on the expected impacts to customer bills.

We invite customers and the community at large to attend these public forums to learn more about the proposed changes, offer comments and ask questions. These forums will also provide valuable feedback for SMUD Board members, who will consider the proposed measures at the public hearing. The public hearing on August 30, 2023 will provide the last opportunity for public discussion before the SMUD Board vote on September 21, 2023.

During this rate process, we'll conduct an extensive public engagement and outreach process to share more details about the 2023 rate proposal with all customers. This includes communication with community groups and organizations to provide information about the proposals in the Report through various methods including, newsletter articles, videos and other channels to reach the organizations' members and constituents most effectively.

Customers and other interested parties may also provide input or ask questions by contacting us at 1-855-736-7655 or by email at ContactUs@smud.org.

Workshops and Public Hearing Schedule

In February 2023, the SMUD Board approved revisions to Meeting Procedures of the Board, determining that SMUD would begin in-person meetings in March 2023. With the understanding that some members of SMUD's community are still taking safety precautions due to ongoing concerns about COVID-19, we'll conduct all workshops in a hybrid format. Detailed information on the workshops will be posted on smud.org/RateInfo and is provided below:

Date & Time	Event	Location	Address
July 13, 2023, at 10 a.m.	Public Workshop	SMUD Headquarters Auditorium and Virtual meeting on ZoomGov/Granicus	6201 S Street, Sacramento
August 3, 2023, at 5:30 p.m.	Public Workshop	SMUD Headquarters Auditorium and Virtual meeting on ZoomGov/Granicus	6201 S Street, Sacramento
August 30, 2023, at 6:00 p.m.	Public Hearing	SMUD Headquarters Auditorium and Virtual meeting on ZoomGov/Granicus	6201 S Street, Sacramento

Revenue Requirement

Summary of Changes

This section explains the proposed rate revisions for 2024 and 2025. Staff proposes four 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025, and May 1, 2025. Table 4 shows the effect of the recommended changes for 2024 and Table 5 shows the effect of the recommended changes for 2025.

Table 4 – SMUD Forecasted Revenue after 2024 Proposed Rate Increases (Millions)*

Customer Class	2024 Baseline Revenue	2024 Forecast with Proposed Increase Jan. 1, 2024 2.75%	2024 Proposed Increase Percent Impact	2024 Forecast with Proposed Increase May 1, 2024 2.75%	2024 Proposed Increase Percent Impact
Residential	$ 830.22	$ 853.06	2.75%	$ 876.52	2.75%
Small Commercial < 300 kW	$ 423.71	$ 435.37	2.75%	$ 447.35	2.75%
Small Commercial 300 - 500 kW	$ 68.94	$ 70.83	2.75%	$ 72.78	2.75%
Medium Commercial 500 - 1,000 kW	$ 89.96	$ 92.44	2.75%	$ 94.98	2.75%
Large Commercial > 1,000 kW	$ 191.35	$ 196.61	2.75%	$ 202.02	2.75%
Agricultural	$ 12.06	$ 12.39	2.75%	$ 12.74	2.75%
Lighting	$ 5.12	$ 5.26	2.72%	$ 5.40	2.73%
Total Revenue	**$ 1,621.36**	**$ 1,665.96**	**2.75%**	**$ 1,711.80**	**2.75%**
EAPR & Medical Equipment Discounts**	**($30.47)**	**($30.54)**		**($30.61)**	

*Revenue based on 21-cycle month and excludes special contracts, pilot rates and lighting fees. Total Revenue may not add due to rounding. Total Revenue will not match the income statement due to forecasted revenue reflecting 12 months per rate increase, unbilled revenue and other factors.

**Subsidy numbers are an approximation.

Table 5 – SMUD Forecasted Revenue after 2025 Proposed Rate Increases (Millions)*

Customer Class	2025 Revenue Forecast	2025 Forecast with Proposed Increase Jan. 1, 2025 2.75%	2025 Proposed Increase Percent Impact	2025 Forecast with Proposed Increase May 1, 2025 2.75%	2025 Proposed Increase Percent Impact
Residential	$ 884.42	$ 908.73	2.75%	$ 933.74	2.75%
Small Commercial < 300 kW	$ 449.44	$ 461.83	2.75%	$ 474.55	2.75%
Small Commercial 300 - 500 kW	$ 72.20	$ 74.18	2.75%	$ 76.23	2.75%
Medium Commercial 500 - 1,000 kW	$ 95.17	$ 97.79	2.75%	$ 100.48	2.75%
Large Commercial > 1,000 kW	$ 205.81	$ 211.48	2.75%	$ 217.29	2.75%
Agricultural	$ 12.73	$ 13.08	2.75%	$ 13.44	2.75%
Lighting	$ 5.31	$ 5.46	2.76%	$ 5.61	2.79%
Total Revenue	**$ 1,725.08**	**$ 1,772.54**	**2.75%**	**$ 1,821.32**	**2.75%**

EAPR & Medical Equipment Discounts**	**($30.61)**	**($30.68)**		**($30.74)**	

* Revenue based on 21-cycle month and excludes special contracts, pilot rates and lighting fees. Total Revenue may not add due to rounding. Total Revenue will not match the income statement due to forecasted revenue reflecting 12 months per rate increase, unbilled revenue and other factors.
**Subsidy numbers are an approximation.

The remainder of this Report presents the detailed recommendations for rate changes and changes to SMUD's Rules and Regulations.

Changes to Residential Rates

Rate Increase for Residential Rates

Purpose

This proposal recommends four 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025 and May 1, 2025. The proposed rate increases will be applied to all rate components: the monthly System Infrastructure Fixed Charge (SIFC), as well as the energy and miscellaneous charges on customers' bills.

Customers on the income-qualified Energy Assistance Program Rate (EAPR) will continue to receive a discount, keeping electric service affordable for low-income customers. The discount formula and caps approved in prior rate actions will remain unchanged in 2024 and 2025, as shown in Table 6.

Table 6 – EAPR Maximum Monthly Discounts

Charge Component	Federal Poverty Level	Maximum Discount
SIFC Discount	All levels (0-200%)	$10
Additional Maximum Energy Discount	0-50%[1]	$60
	>50-100%	$32
	>100-150%	$10

1. Note that this GM Report also proposes an increased discount for the 0-50% level under the section titled Miscellaneous – Modification to Rate Schedule Energy Assistance Program.

Bill Impact

Bill impacts depend on how much electricity a customer uses each month, as well as when they use energy. Figures 10 & 11 show an overview of the distribution of bill impacts for standard rate customers in 2024 and 2025 if energy consumption remains the same. As a reference, a standard residential customer using 750 kWh per month on average, will see an average monthly bill impact of $3.61 from the January 1, 2024 rate increase, an increase of $3.72 from the May 1, 2024 rate increase, an increase of $3.81 from the January 1, 2025 rate increase, and an additional increase of $3.92 in the May 1, 2025 rate increase. On average, about 80% of customers will see monthly bill impacts of approximately $4.26 or less per rate increase in 2024 and $4.50 or less per rate increase in 2025.

Figure 10 – Rate Increase Monthly Bill Impacts for Standard Rate Customers (2024)

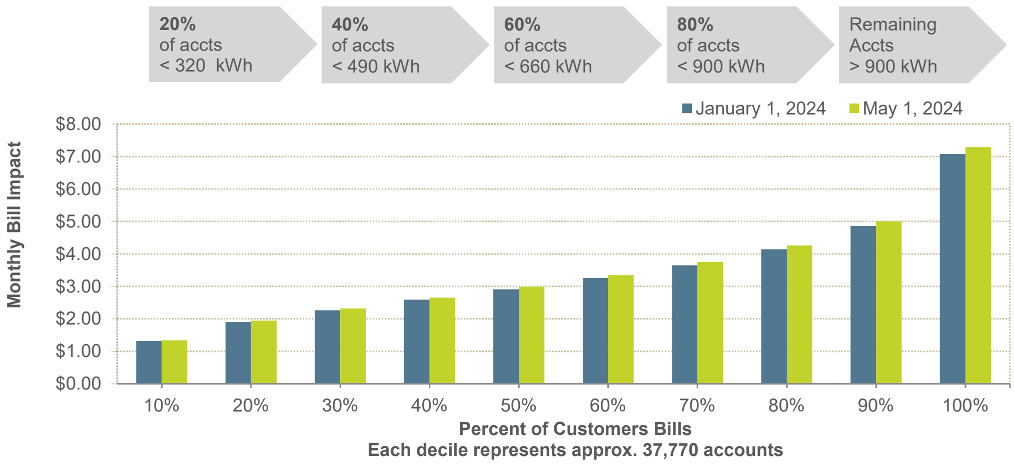
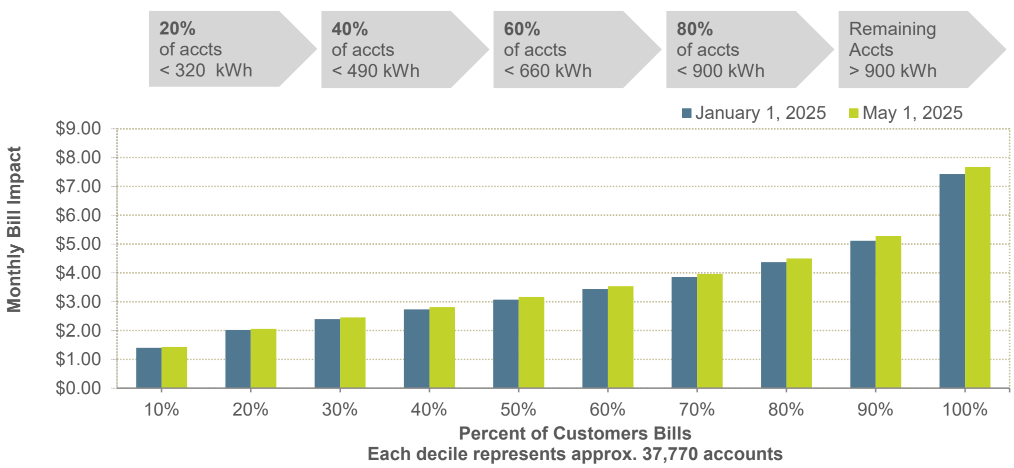


Figure 11 – Rate Increase Monthly Bill Impacts for Standard Rate Customers (2025)



Analysis based on stable population of standard customers using weather normalized data for calendar year 2022.

EAPR customers' bill impacts differ from standard rate customers, depending on their discount rate and energy usage. The EAPR rate discount is based on Federal Poverty Level (FPL), with more assistance to customers with household incomes below 100% FPL while continuing to provide some assistance to EAPR customers whose income falls between 100% to 200% FPL range. Figures 12 & 13 illustrate the bill impacts for EAPR customers by FPL. On average, EAPR customers will see an average monthly bill impact of $3.04 from the January 1, 2024 rate increase, an increase of $3.12 from the May 1, 2024 rate increase, an increase of $3.22 from the January 1, 2025 rate increase and an additional increase of $3.31 in the May 1, 2025 rate increase. Staff is recommending increasing the discount for those customers most in need, as described in the Miscellaneous Rate Changes section, which is not included in the bill impacts below.

Figure 12 – Rate Increase Monthly Bill Impacts for EAPR (2024)

January 1, 2024

Average Monthly Bill Impact: FPL	Avg kWh	
0-50%:	711	$3.03
50-100%:	616	$2.92
100-150%:	628	$3.09
150-200%:	646	$3.16
Average	***634***	***$3.04***

May 1, 2024

Average Monthly Bill Impact: FPL	Avg kWh	
0-50%:	711	$3.14
50-100%:	616	$3.00
100-150%:	628	$3.17
150-200%:	646	$3.25
Average	***634***	***$3.12***

Figure 13 – Rate Increase Monthly Bill Impacts for EAPR (2025)

January 1, 2025

Average Monthly Bill Impact: FPL	Avg kWh	
0-50%:	711	$3.25
50-100%:	616	$3.10
100-150%:	628	$3.25
150-200%:	646	$3.33
Average	***634***	***$3.22***

May 1, 2025

Average Monthly Bill Impact: FPL	Avg kWh	
0-50%:	711	$3.36
50-100%:	616	$3.19
100-150%:	628	$3.35
150-200%:	646	$3.43
Average	***634***	***$3.31***

Analysis based on stable population of EAPR customers using weather normalized data for calendar year 2022. Amounts may reflect minor rounding differences.

Figures 14 & 15 provide average bill impacts to customers on the Medical Equipment Discount Program (MED Rate). It's important to keep in mind that MED Rate customers tend to have higher average electricity usage due to the equipment in their home, so their bill impact is higher than for standard and EAPR customers. On average, MED Rate customers will see an average monthly bill impact of $3.79 from the January 1, 2024 rate increase, an increase of $3.90 from the May 1, 2024 rate increase, an increase of $4.00 from the January 1, 2025 rate increase, and an additional increase of $4.12 in the May 1, 2025 rate increase.

Figure 14 – Rate Increase Monthly Bill Impacts for MED (2024)

January 1, 2024

Average Monthly MED Bill Impact:

% of Population	Avg kWh	
0-25%	1,394	$5.99
26-50%	872	$4.04
51-75%	618	$3.07
76-100%	361	$2.05
Average	***813***	***$3.79***

May 1, 2024

Average Monthly MED Bill Impact:

% of Population	Avg kWh	
0-25%	1,394	$6.17
26-50%	872	$4.16
51-75%	618	$3.15
76-100%	361	$2.10
Average	***813***	***$3.90***

Figure 15 – Rate Increase Monthly Bill Impacts for MED (2025)

January 1, 2025

Average Monthly MED Bill Impact:

% of Population	Avg kWh	
0-25%	1,394	$6.30
26-50%	872	$4.26
51-75%	618	$3.24
76-100%	361	$2.17
Average	***813***	***$4.00***

May 1, 2025

Average Monthly MED Bill Impact:

% of Population	Avg kWh	
0-25%	1,394	$6.50
26-50%	872	$4.39
51-75%	618	$3.33
76-100%	361	$2.22
Average	***813***	***$4.12***

Analysis based on stable population of MED customers using weather normalized data for calendar year 2022. Amounts may reflect minor rounding differences.

Revenue Impact

The two rate increases in 2024 are forecasted to generate approximately $46 million in added revenues from all residential rate categories and the two rate increases in 2025 are forecasted to generate an approximate additional $49 million in added revenues from all residential rate categories.

Recommendation

Staff recommends adoption of four 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025 and May 1, 2025 for residential rates.

Revisions described above are detailed in the residential Rate Schedules included in Volume 2 of this Report.

Modifications to Rate Schedules R and R-TOD

Purpose

In 2017, the SMUD Board approved transitioning customers on the legacy residential rates to the standard rate starting in January 2023. The transition has been completed, so staff recommends removing all references to the legacy residential rates from Rate Schedules R and R-TOD, as they are no longer applicable. Removing the legacy residential rates also allows staff to consolidate the holidays into one tariff section in Rate Schedule R-TOD, which is consistent with other tariffs.

In September 2021, the SMUD Board approved the Critical Peak Pricing (CPP) rate to allow customers to be part of the solution to build a zero carbon future by incentivizing them to conserve energy during the times when the system is most stressed. Initially, staff believed there would be a need for two different rates; RTC1 for legacy Net Energy Metering (NEM) customers and RTC2 for Solar and Storage Rate (SSR) customers. During implementation of the CPP rate, it was determined that only one CPP rate, RTC1, is needed to apply the credits and discounts for CPP events. Participation in CPP does not impact the customer's legacy NEM status or SSR status. Therefore, staff recommends removing the rate category RTC2, as it is not needed.

In addition, we offer a voluntary SSR incentive program, called My Energy Optimizer, to help make battery storage units even smarter and allow customers to earn financial incentives by reducing energy usage during the hours when demand is highest and clean energy resources are scarce. There are three levels of participation under My Energy Optimizer: Starter, Partner and Partner+. Currently, participation in some of these incentives requires the enrollment in the CPP rate, but that is not the case for all participation levels. Staff recommends clarifying that the CPP rate is required only for customers participating in certain SSR incentive programs in the rate schedule.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, staff recommends removing Section I, Subsection B of Rate Schedule R.

Effective September 22, 2023, staff recommends removing Section II, Subsection B of Rate Schedule R.

Effective September 22, 2023, staff recommends removing Section I, Subsection A, Subsection 2 of Rate Schedule R-TOD.

Effective September 22, 2023, staff recommends modifying Section I, Subsection A, Subsection 3 of Rate Schedule R-TOD as follows:

> *This rate has five kilowatt-hour (kWh) prices, depending on the time-of-day and season as shown ~~below. Holidays are detailed~~ in Section V. Conditions of Service* ***along with the holidays****.*

Effective September 22, 2023, staff recommends consolidating and moving the time-of-day tables from Section I, Subsection A, Subsection 3 and Section I, Subsection C, Subsection 5 to Section V, Subsection A in Rate Schedule R-TOD.

Effective September 22, 2023, staff recommends removing Section I, Subsection B of Rate Schedule R-TOD.

Effective September 22, 2023, staff recommends modifying Section I, Subsection C of Rate Schedule R-TOD as follows:

> *Optional Critical Peak Pricing (CPP) Rate (rate categor**y**~~ies~~ RTC1~~ and RTC2~~)*

Effective September 22, 2023, staff recommends modifying Section I, Subsection C, Subsection 1 of Rate Schedule R-TOD as follows:

> *The CPP rate is available as of June 1, 2022 for customers who are participating in a qualifying program. Customers that have accepted a storage incentive under ~~the~~ **certain** Solar and Storage Rate incentive program**s** are required to enroll in this rate for a duration as determined by SMUD program rules posted on www.smud.org.*

Effective September 22, 2023, staff recommends modifying Section I, Subsection C, Subsection 5 of Rate Schedule R-TOD as follows:

> *This rate has five kilowatt-hour (kWh) prices, depending on the time-of-day and season as shown ~~below. Holidays are detailed~~ in Section V. Conditions of Service **along with the holidays**.*

Effective September 22, 2023, staff recommends removing Section II, Subsection B of Rate Schedule R-TOD.

Effective September 22, 2023, staff recommends modifying Section II, Subsection D of Rate Schedule R-TOD as follows:

> *Plug-In Electric Vehicle Credit (rate categories RT02~~,~~ ~~RT01~~ and~~,~~ RTC1 ~~and RTC2~~)*

Revisions described above are detailed in Rate Schedules R and R-TOD included in Volume 2 of this Report.

Modifications to the Three-Phase Charge

Purpose

The three-phase service option is open to customers located in areas where three-phase service is available. There is a Special Facilities fee charged in addition to the System Infrastructure Fixed Charge to cover the additional costs for providing this service to customers. It may not always be cost effective for developers to update the existing panels from three-phase to single-phase when renovating a commercial building for residential use. The tenants of the building would most likely not need three-phase service and applying the three-phase charge could significantly increase the individual tenant bills. Adding certain modifications to the language related to the residential three-phase rate option may allow for flexibility for multi-family residential buildings that have been converted from commercial facilities.

Staff recommends updating Rate Schedules R and R-TOD to state that the three-phase service option may be charged to cover the additional costs for providing the service to allow for flexibility under these circumstances.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, staff recommends modifying Section IV, Subsection J of Rate Schedule R as follows:

> *This option is open to customers located in areas where three-phase service is available. A Special Facilities fee ~~is~~ **may be** charged to cover the additional costs for providing this service. This charge is in addition to the SIFC.*

Effective September 22, 2023, staff recommends modifying Section IV, Subsection H of Rate Schedule R-TOD as follows:

> *This option applies to customers located in areas where three-phase service is available. A Special Facilities fee ~~is~~ **may be** charged to cover the additional costs for providing this service. This charge is in addition to the System Infrastructure Fixed Charge.*

Revisions described above are detailed in Rate Schedules R and R-TOD included in Volume 2 of this Report.

Changes to Commercial Rates

Rate Increase for Agricultural and Commercial & Industrial Rates

Purpose

The four proposed 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025 and May 1, 2025, will be applied equally to all rate components of SMUD's commercial & industrial and agricultural rates. These rate components include the following:

- Energy Charges;
- System Infrastructure Fixed Charge;
- Summer Peak Demand Charge;
- Site Infrastructure Charge;
- Maximum Demand Charge;
- Generator Standby Charge and
- Power Factor and Other Miscellaneous Charges.

Bill Impact

Actual bill impacts depend on the rate, how much electricity a customer uses each month, as well as when and how the customer uses energy. On average, SMUD's commercial and agricultural customers will see rate increases on their electric bills as follows: 2.75% rate increase on January 1, 2024, May 1, 2024, January 1, 2025 and May 1, 2025 for Agricultural and Commercial and Industrial rates. Average bill impacts are shown in Table 7 below.

Table 7 – Average Commercial and Agricultural Bill Impacts

Average Monthly Bill Impacts *						
Size	Average Monthly Bill	2.75% Rate Impact January 1, 2024	2.75% Rate Impact May 1, 2024	2.75% Rate Impact January 1, 2025	2.75% Rate Impact May 1, 2025	Total Bill Impact
Small Commercial (<20 kW) Example - Small Office, Strip Mall Store	$194.11	$5.34	$5.48	$5.64	$5.79	$22.25
Small Commercial (20-299 kW) Example - Restaurant, Bank	$3,121	$86	$88	$91	$93	$358
Medium Commercial (500-999 kW) Example - Large Retail, Hospital	$27,173	$747	$768	$789	$811	$3,115
Large Commercial (>1,000 kW) Example - Large Manufacturing	$103,221	$2,839	$2,917	$2,997	$3,079	$11,831
Agriculture (Ag & Pumping)	$445	$12	$13	$13	$13	$51

*Impacts shown for a full calendar year for each rate increase.

Revenue Impact

The two rate increases in 2024 are forecasted to generate approximately $44 million in added revenues from all commercial and agricultural classes and the two rate increases in 2025 are forecasted to generate an approximate additional $47 million in added revenues from all commercial and agricultural classes.

Recommendation

Staff recommends adoption of four 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025 and May 1, 2025 for all commercial and agricultural rates.

Revisions described above are detailed in Rate Schedules AG, CHP, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, DWS and GS-TDP included in Volume 2 of this Report.

Modifications to Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4

Purpose

During the 2019 Rate Process, SMUD's Board approved the restructure of the commercial rates to better align with the costs they are meant to reflect. All of the commercial accounts have been transitioned to the restructured rates. Therefore, staff recommends removing all sections, references, tables and rates related to the Legacy Commercial Rates and the transition to the restructured rates from Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4. Staff also recommends removing any references to the term "restructured," as these "restructured" rates are now the standard rates.

In addition, staff recommends making a minor change to Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 to reflect that the rates in the tariffs are standard rates as opposed to mandatory. This aligns with the residential tariff language and allows commercial customers to elect optional rates that may become available in the future.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, remove all sections, references to and prices for the metered Legacy Commercial Rates, and the transition to the new time-of-day rates in Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4.

Effective September 22, 2023, remove all sections and references to the term "restructured" in Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4.

Effective September 22, 2023, replace the term “mandatory” with the phrase, “includes the standard rates” in Section I of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4.

Revisions described above are detailed in Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 included in Volume 2 of this Report.

Changes to Street, Traffic and Lighting Rates

Rate Increase for Street/Traffic/Lighting Rates

Purpose

The four proposed 2.75% rate increases, one each on January 1, 2024, May 1, 2024, January 1, 2025 and May 1, 2025, will be applied to the SIFC, the Electricity and Switching Charge, the Electricity Usage Charge and Monthly Charges of the Lighting Schedules. The rate increases will not apply to monthly leasing and maintenance charges for street lighting lamps and fixtures. We review the street lighting fees annually and posts them separately on smud.org.

Bill Impact

On average, SMUD's street lighting, traffic lighting and night lighting customers will see rate increases on their annual bills of 2.75% in January 2024, 2.75% in May 2024, 2.75% in January 2025 and 2.75% in May 2025. Street lighting fees are not subject to the proposed rate increases, those are updated annually to reflect ongoing cost escalation.

Revenue Impact

The two rate increases in 2024 are forecasted to generate approximately $280,000 in added revenues from all lighting classes and the two rate increases in 2025 are forecasted to generate an additional $300,000 in added revenues from all lighting classes. As stated above, this increase does not apply to street lighting fees.

Recommendation

Staff recommends adoption of a 2.75% rate increase on January 1, 2024, 2.75% on May 1, 2024, 2.75% on January 1, 2025 and 2.75% on May 1, 2025, for street lighting, traffic lighting and night light rates.

Revisions described above are detailed in Rate Schedules NLGT, SLS, TC ILS and TSS included in Volume 2 of this Report.

Miscellaneous Rate Changes

Modifications to Rate Schedule Energy Assistance Program

Purpose

SMUD's Energy Assistance Program Rate (EAPR) helps keep electric service affordable for low-income customers by providing discounts on monthly electricity bills. In 2017, the SMUD Board approved a restructure to EAPR to better assist low-income customers with the greatest need. The current monthly discount, enrollments and annual income guidelines by household are shown in Table 8.

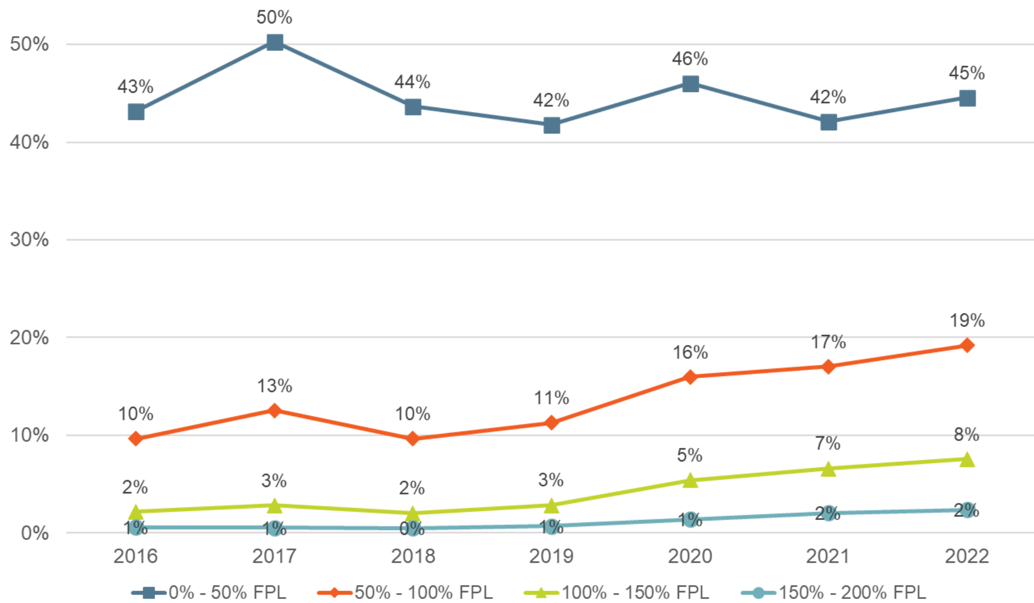
Table 8 – Current EAPR Discount and Federal Poverty Level Income Guidelines

	Current Enrollments		Annual Income Guidelines by Household Size[2]				
FPL[1] Guidelines	**Customer Count (approx.)**	**Monthly Discount[3]**	**1 Person**	**2 People**	**3 People**	**4 People**	**5 People**
0% - 50%	8,000	$70	$7,290	$9,860	$12,430	$15,000	$17,570
50% - 100%	34,000	$42	$14,580	$19,720	$24,860	$30,000	$35,140
100% - 150%	29,000	$20	$21,870	$29,580	$37,290	$45,000	$52,710
150% - 200%	22,000	$10	$29,160	$39,440	$49,720	$60,000	$70,280

1. Federal Poverty Level Income Guidelines.
2. The threshold is up to the amount listed.
3. The monthly discount listed for each FPL includes a $10 discount toward the System Infrastructure Fixed Charge (SIFC).

While the program has provided substantial benefits to low-income customer bills for years, multiple economic variables, such as inflation and rate increases, have had disproportionately negative impacts on EAPR customers, particularly those in the 0-50% Federal Poverty Level (FPL). Under the current EAPR structure, we target helping customers with the most unaffordable Electric Bill Burden (EBB), which is a ratio of the electric bill to the customer's income. An unaffordable EBB is defined as 8.7% or higher. In other words, customers with an unaffordable bill burden are spending 8.7% or more of their gross household monthly income directly on their monthly electricity bills. In 2022, roughly 8,000 EAPR customers qualified under the 0-50% FPL and approximately 45% of those customers had an unaffordable EBB, which is more than double the percentage for the next tier, 50-100% FPL, at 19% as shown in Figure 16.

Figure 16 – Percentage of EAPR Customers with Unaffordable EBB by FPL (2016-2022)



It's clear that those customers who qualify under the 0-50% FPL need the most assistance. They continue to be the largest percentage of customers with an unaffordable EBB due to economic factors and increases to their electric bills. Staff intends to help mitigate the bill impacts for those customers most in need.

Due to rate-making restrictions for rate subsidies, any increase in the rate discount must be funded by discretionary non- retail rate revenue dollars. Staff is proposing to establish and maintain an EAPR Stabilization Fund (ESF) to provide an additional discount to the electricity usage charge up to an established maximum discount (ESF Additional Discount). Under this proposal, on an annual basis, the Accountant will determine if available sources of discretionary non-retail rate revenue (e.g. late fees, wholesale commodity revenue, transmission sales, etc.) exist and verify those funds may be allocated toward the ESF Additional Discount. On an annual basis, the Accountant will establish the specific monthly ESF Additional Discount before the year the value is in effect, depending on available discretionary non-retail revenue.

Staff recommends setting the maximum ESF Additional Discount at up to $35 per month for customers with the highest needs, defined as customers with household incomes below the 50% FPL as seen in Table 9. The discounts for all other EAPR customers will remain the same.

Table 9 – Proposed Application of EAPR Stabilization Funds

Federal Poverty Level	ESF Additional Discount	New Total Discount
0-50%	$0-$35	$70-$105

The proposed change to utilize an ESF to apply an additional energy discount of up to $35 per month would reduce the amount of unaffordable EBB customers in the 0-50% FPL category to approximately 32%. The amount of ESF Additional Discount will be revised annually depending on availability of discretionary non-retail rate revenue funds, as well as EAPR enrollment in the 0-50% FPL category and could be at any amount between $0 and $35 per month. While we cannot reduce the electric bill burden to affordable levels for every EAPR customer, we're focusing on helping those who need it most.

Bill Impact

Customers receiving the ESF Additional Discount will receive an additional bill reduction of up to $35 per month. The Maximum Electricity Usage Discount and the ESF Additional Discount combined cannot exceed the customer electricity usage charges. The ESF Additional Discount does not apply to the SIFC, State energy surcharges, county and city taxes, hydro generation adjustment charges, optional services and programs and electric vehicle charging.

Revenue Impact

Staff estimates that the additional credit of up to $35 per month for customers under the 0-50% FPL category requires approximately $2 million per year of discretionary non-retail rate revenue. While the electricity discount is increasing with this proposal, not every customer will use the full ESF Additional Discount amount each month. The Accountant will identify which discretionary non-retail rate revenue will be transferred from revenue to the ESF.

Recommendation

Effective September 22, 2023, staff recommends modifying Section III of Rate Schedule EAPR as follows:

Eligible residential customers will receive a discount based on qualifying federal poverty level income guidelines. The EAPR discount will include ~~two components~~:

1. *A $10 System Infrastructure Fixed Charge discount per month; and*
2. *An additional discount is applied as a 100% reduction in the electricity usage cost per kilowatt hour up to the maximum discount according to the following income guidelines:*

Federal Poverty Level	*Maximum Electricity Usage Discount*
0-50%	*$60*
>50 to 100%	*$32*
>100 to 150%	*$10*
>150 to 200%	*$0*

3. ***For certain eligible residential EAPR customers per the table below, an EAPR Stabilization Fund (ESF) will be established and maintained to provide an additional discount applied as a reduction in the electricity usage cost per kilowatt hour up to the maximum discount. On an annual basis the Accountant will determine if available sources of discretionary non-retail rate revenue exist and apply those funds to cover up to***

the maximum ESF additional discount. The additional monthly discount amount will begin January 1, 2024 and will be determined prior to the year the value is in effect.

Federal Poverty Level	***ESF Additional Discount***
0-50%	***$0-$35***

Revisions described above are detailed in Rate Schedule EAPR included in Volume 2 of this Report.

Modifications to Rate Schedule Hydro Generation Adjustment

Purpose

SMUD owns and operates hydroelectric generation in the south fork of the American River, which is referred to as our Upper American River Project (UARP). Hydroelectric generation is highly impacted by precipitation levels, both rain and snow, generating more energy in years with above average precipitation, and less energy in dry years. The more hydroelectric energy that we can generate, the less energy and/or fuel we need to purchase on the open market. Market prices of power are typically higher than our cost of generating power in our hydroelectric facilities.

To reduce financial volatility from variances in precipitation, we established a Hydro Rate Stabilization Fund (HRSF) on May 15, 2008, by Board Resolution 08-05-11. In years with above- average precipitation, money is transferred into the HRSF, and in years with less precipitation, money is transferred out of the HRSF to help cover the cost of purchasing power and/or fuel on the open market to make up for the lower hydro production. If the HRSF balance reaches zero in an extended drought, a one-year Hydro Generation Adjustment (HGA) will be charged on customer bills to cover the increased cost of purchasing replacement power and/or fuel on the open market.

Measuring Station Update

Annual precipitation is currently measured at the Pacific House measuring station, which is then compared to the 50-year median (midpoint) inches of precipitation. However, the observers at Pacific House measuring station may not be able to continue reporting precipitation data in the future. Given the current circumstances at Pacific House, Fresh Pond has been identified as an alternative that appropriately reflects the precipitation received and hydrogeneration delivered in the UARP watershed.

Staff recommends changing the precipitation measuring station from Pacific House to Fresh Pond and altering the generation conversion from 30,000 MWh/inch to 28,000 MWh/inch to account for the change in geographical location resulting in an annual precipitation difference at Fresh Pond. These changes will allow a seamless transition to a measuring station with over 50-years of precipitation data. Further, adding language to Rate Schedule HGA to allow SMUD to find a replacement measuring location and adjust generation conversion number will provide flexibility to use the next best suitable option within the UARP water shed if there is a need in the future.

Western Area Power Administration (WAPA) Addition

SMUD has a contract with WAPA to receive a specified percentage of hydro generation each year from WAPA's Central Valley Project (CVP). Like the HRSF, SMUD has a WAPA Rate Stabilization Fund (WRSF) to help mitigate the financial impact of variations in the delivery amount of generation from WAPA. In years when WAPA is unable to provide the forecasted hydro generation, we must purchase replacement power and/or fuel on the open market. Money is then transferred out of the WRSF to cover the increased cost of the replacement power. Alternatively, when WAPA delivers more energy than forecasted, we can reduce how much power and/or fuel it needs to purchase. The money that's not spent due to the increased delivery from WAPA is then transferred into the WRSF to save for a future year.

Due to the prolonged drought that has reduced the balance of the WRSF, staff recommends adding the WAPA hydro generation mechanism to the HGA tariff. Doing so will prevent significant commodity budget impacts due to years with low energy deliveries from WAPA, which could lead to a rate increase for all SMUD customers. The HGA smooths out the impact of low and high water years, reduces the impact of water year fluctuations on rates and allows for shorter rate adjustment periods. Staff recommends that any revenue collected from customers through the WAPA HGA be deposited into the WRSF, reducing the need for any future WAPA HGA charges.

In addition, staff recommends re-ordering the subsections in Section II. Conditions, as well as including a minor wording change in Section VII. Application, with both changes intended to improve the clarity of the HGA rate schedule.

Bill Impact

The bill impact will vary depending on the amount of energy provided by WAPA and the balance of the WRSF.

Revenue Impact

Changing the measuring station from Pacific House to Fresh Pond, along with the corresponding change to the generation conversion to account for the difference in annual precipitation at Fresh Pond, is expected to result in a seamless transition with comparable precipitation data. Although slight variances in recorded precipitation amounts are expected, the precipitation totals will still be consistent and reflective of the UARP, resulting in only minor variances to annual transfers in and out of the HRSF.

The revenue impact will also vary depending on the amount of energy provided by WAPA and the balance of the WRSF.

Recommendation

Effective September 22, 2023, staff recommends modifying the measuring station and other related changes in the HGA tariff to continue reporting reliable and consistent precipitation data into the future. Table 10 shows the proposed changes that will be appear in the HGA tariff.

Table 10 – Proposed Measuring Station Changes and Other Impacted Items

Item	Current	Proposed
Measuring Station	The National Weather Service Pacific House Cooperative Observer	Fresh Pond Measuring Station
Measuring Station Replacement	Suitable replacement	Suitable replacement representative of the UARP watershed.
Precipitation Variance	N/A	If the measuring station changes, the number of years used to determine the median precipitation may vary depending on the volume of historical data available.
Generation Conversion Value	30,000 MWh/inch	28,000 MWh/inch
Generation Conversion Note	N/A	If the measuring station changes, the MWh per inch may vary.
AP Historical Data Comparison	50-year median	Median of up to a maximum of 50 years of data.
Calculation of Budget Effects	Simple average of actual NP15 prices as of April 1, and the second, third and fourth monthly forecast NP15 prices.	The monthly average of actual NP15 prices through April 1 and the monthly forecasted NP15 prices for the balance of the year.

Effective September 22, 2023, staff recommends modifying the current defined terms in the HGA tariff to indicate when they apply specifically to the SMUD hydro generation. Table 11 shows the updated defined terms that will be used in the HGA tariff.

Table 11 – Updated Defined Terms

Item	Current	Proposed
Budget Impact Definition	Budget Impact (BI)	SMUD Budget Impact (SBI)
HGA Definition	HGA	SMUD HGA

Effective September 22, 2023, staff recommends adding WAPA's CVP hydro generation to the HGA tariff. Table 12 describes the details that will be included in the rate schedule. Staff recommends starting the evaluation of energy delivery variances for the Water Year beginning April 1, 2023.

Table 12 – WAPA Additions to Rate Schedule HGA

Item	Proposed
Water Year	April 1 through March 31.
Forecasted Delivery	As provided by WAPA.
Actual Delivery	As identified by SMUD.
Market Cost of Energy	The average NP15 price for each month of the Water Year.
Energy Delivery Variance (EDV)	Forecasted delivery minus the actual delivery.
WAPA Budget Impact (WBI)	Energy Delivery Variance multiplied by the Market Cost of Energy, not to exceed 2% of budgeted annual gross retail revenue.
WAPA Rate Stabilization Fund (WRSF)	Reserve fund used to balance the budget impact of deliveries from WAPA, with money transferred into the fund in years with higher than forecast deliveries, and money transferred out of the fund in years with lower than forecast deliveries.
Maximum allowed balance of WAPA Rate Stabilization Fund	4% of budgeted annual gross retail revenue.
Calculated WRSF	WAPA Rate Stabilization Fund minus the WAPA Budget Impact.
If Calculated WRSF <0	The Accountant will transfer the remaining balance of the WRSF to Operating Revenues and the WAPA HGA will be set at: $-\frac{Calculated\ WRSF}{Budgeted\ annual\ retail\ kWh\ sales}$ Any funds collected through the WAPA HGA will be deposited into the WRSF.
If Calculated WRSF is ≥ 0 and ≤ 4% of budgeted annual gross retail revenue	The Accountant will transfer the positive WBI out of the WRSF and into Operating Revenues and transfer the negative WBI into the WRSF from Operating Revenues.
If Calculated WRSF is > 4% of budgeted annual gross retail revenue	The Accountant will transfer the negative WBI into the WRSF from Operating Revenues up to 4% of budgeted annual gross retail revenue. The Board may authorize the WAPA HGA or direct the funds for another purpose. At the Board's discretion, the WAPA HGA will be set at: $-\frac{(Calculated\ WRSF - 4\%\ of\ budgeted\ annual\ gross\ retail\ revenue)}{Budgeted\ annual\ retail\ kWh\ sales}$
HGA	The HGA will be comprised of the SMUD HGA and the WAPA HGA, to show one line item on the bill. HGA = SMUD HGA + WAPA HGA

Effective September 22, 2023, staff recommends modifying Section VII of Rate Schedule HGA as follows:

> *~~The HGA became effective July 1, 2008.~~ The HGA is recalculated for each Water Year and will be applied to* ***all****~~the~~ rate schedules May 1 until April 30 of the following year.*

Revisions described above are detailed in Rate Schedule HGA included in Volume 2 of this Report.

Modifications to Rate Schedule Campus Billing

Purpose

Staff recommends several changes to the Campus Billing tariff to improve clarity and reflect current practices, including removing all references to the Data Service Meter Rental fee, which is no longer used, updating the "Transmission – 69 kV or higher" service voltage to "Subtransmission – 69 kV or higher" to be consistent with the other rate schedules, replacing the term "grandfathered" with "legacy," and updating outdated references to staff titles.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, staff recommends modifying Section II, Subsection B of Rate Schedule CB as follows:

> *The customer must pay a Campus Meters Charge for all but the first meter. The Campus Meters Charge recovers costs for the meters, Current Transformer (CT), Potential Transformer (PT), meter testing, ~~data management services,~~ auxiliary metering equipment and additional billing services. The Campus Meters Charges vary by service voltage level. Information on the associated monthly charges is available on SMUD's website, www.smud.org, or will be furnished upon request. SMUD will review this information at least once per year and update as necessary for additional approved equipment, technology improvements and pricing changes.*

Effective September 22, 2023, staff recommends deleting Section II, Subsection C of Rate Schedule CB.

Effective September 22, 2023, staff recommends modifying Section II, Subsection D of Rate Schedule CB as follows:

> *Campus billing prices will be subject to any applicable changes to the Commercial & Industrial Time-of-Day rates* ***and*** *~~,~~ the Campus Meter Charges~~, and the Data Services Meter Rental Charge~~.*

Effective September 22, 2023, staff recommends modifying Section IV, Subsection E of Rate Schedule CB as follows:

> *1. ~~Transmission~~ **Subtransmission** – 69 kV or higher*
>
> *2. Primary – 12 kV or 21 kV*
>
> *3. Secondary – all voltages lower than 12 kV*

Effective September 22, 2023, staff recommends modifying the last paragraph in Section IV of Rate Schedule CB as follows:

> *Campus accounts created before January 1, 2014, are **considered legacy accounts** ~~grandfathered~~ under the prior rate option with regard to subsection K, and subsection L. If a ~~grandfathered~~ **legacy** account requests that additional meters be added to the campus, the addition will be allowed if the service is fed from a substation already part of the campus account.*

Effective September 22, 2023, staff recommends modifying Section V of Rate Schedule CB as follows:

> *A customer can request campus billing from a **SMUD Representative** ~~Energy Advisor~~. The **SMUD Representative** ~~Energy Advisor~~ will verify the customer's accounts meet the requirements and the eligibility for campus billing. If the **SMUD Representative** ~~Energy Advisor~~ determines the accounts are eligible the **SMUD Representative** ~~Energy Advisor~~ will provide a Request for Campus Billing Option form for the customer detailing the startup costs and the ongoing monthly costs. Once the Request form is returned with the customer's signature acknowledging the costs the **SMUD Representative** ~~Energy Advisor~~ will submit the request to Billing. Campus billing will start on the bill after all accounts have been **approved and** prepared for campus billing.*

Effective September 22, 2023, staff recommends modifying Section VII of Rate Schedule CB as follows:

> *The customer can elect to revert back to individual accounts at any time by contacting ~~Billing or~~ a~~n~~ **SMUD Representative** ~~Energy Advisor~~. All meters will be converted to single accounts and the corresponding current rates will be assigned based on usage and demand. It may take more than one billing cycle to change the campus account back to individual accounts.*

Revisions described above are detailed in Rate Schedule CB included in Volume 2 of this Report.

Modifications to Distribution Wheeling Service

Purpose

Generation resources that interconnect under the Distribution Wheeling Service (DWS) Rate Schedule are required to wheel their power across SMUD's distribution and transmission systems to another market or purchasing entity. Wheeling power through a utility's system means using the distribution and transmission system to move the generated power through the utility's territory without selling or using that power. SMUD, as the incumbent utility with native load service obligations, has first priority to use our distribution capacity to serve our own customer load, but the DWS Rate Schedule does not clearly state that. Staff recommends adding language in the DWS Rate Schedule clarifying that SMUD has the right to use available distribution capacity to serve its own customer load before providing capacity to third parties to wheel power across SMUD's distribution system.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, staff recommends updating Section I of Rate Schedule DWS as follows:

> *This Rate Schedule DWS is optional for customers requesting Distribution Wheeling Service. SMUD may, at its sole discretion, provide Distribution Wheeling Service to Independent Power Producers and Cogenerators, also referred to as Merchant Generators, within SMUD territory, who establish a need for this service. Wheeling service requests will be evaluated on a case by case basis and may be limited by availability of distribution system capacity.* ***SMUD, as the incumbent utility with native load service obligations, will determine the amount of excess distribution system capacity based on SMUD's forecasted customer loads. Any available distribution capacity in excess of SMUD's native load needs may be available to third parties requesting service under this Rate Schedule DWS.*** *This rate has been developed for wholesale power transactions and SMUD will not wheel non-SMUD power to its retail customers under this rate.*

Revisions described above are detailed in Rate Schedule DWS included in Volume 2 of this Report.

Modifications to Generator Standby Charge

Purpose

SMUD currently has the Generator Standby Service charge designed specifically for customers who install, interconnect and operate their own generating facility and equipment. However, the Generator Standby Service charge is waived for distributed generation that qualifies under Rate Schedules NEM1 and SSR. Staff recommends adding language clarifying that customers installing, interconnecting and operating equipment to self-supply 100% of their power needs as a microgrid without the intent to utilize SMUD service except for emergency backup power will be subject to the generator standby service charge.

We do not anticipate that this charge will apply to many customers because most customers require a portion of their electric service be provided by SMUD. Generally, customers that install distributed generation on their premises still receive energy from SMUD on a regular basis, even if their system technically can produce enough energy to serve all their energy needs on an annual basis. The waiver of the Generator Standby Service charge for customers under rate schedules NEM1 and SSR will remain unchanged.

Staff also recommends updating the name of the charge to the "Standby Service Charge" to accommodate the different types of technology that may be used by customers.

Bill Impact

Customers who interconnect and operate equipment and infrastructure to self-supply all their power needs, and use SMUD to only supply emergency backup power, will experience different bill impacts depending on the size of their electrical generation facility and the amount of backup power they purchase from SMUD, if any. These customers will be subject to all charges defined in their applicable rate schedules.

Revenue Impact

Modifying the language of the Standby Service Charge in the applicable rate schedules is not expected to have a material impact to SMUD's revenue.

Recommendation

Effective September 22, 2023, staff recommends updating Section V, Subsection D of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4 by removing the term "Generator" from all references to "Generator Standby Service".

Effective September 22, 2023, staff recommends updating Section V, Subsection D of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4 by adding the following sentence to the last paragraph:

> ***The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as microgrid service, where SMUD provides only backup electricity.***

Effective September 22, 2023, staff recommends updating Section IV, Subsection E of Rate Schedule R and Section IV, Subsection D of Rate Schedule R-TOD by removing the term "Generator" from all references to "Generator Standby Service".

Effective September 22, 2023, staff recommends updating Section IV, Subsection E of Rate Schedule R and Section IV, Subsection D of Rate Schedule R-TOD by adding the following sentence to the last paragraph:

> ***The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as microgrid service, where SMUD provides only backup electricity.***

Effective September 22, 2023, staff recommends updating Section IV, Subsection A of Rate Schedule AG by removing the term "Generator" from all references to "Generator Standby Service".

Effective September 22, 2023, staff recommends updating Section IV, Subsection A of Rate Schedule AG by adding the following sentence to the last paragraph:

> ***The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as microgrid service, where SMUD provides only backup electricity.***

Revisions described above are detailed in Rate Schedules AG, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, R, and R-TOD included in Volume 2 of this Report.

Modifications to Rate Holidays

Purpose

SMUD provides off-peak pricing for specific rate holidays as shown in the tariff sheets. The Federal government, as well as the State of California, have recently made changes to their recognized holidays. These changes have caused some confusion with SMUD customers regarding which holidays are considered rate holidays. Staff recommends aligning SMUD rate holidays with the current holidays established by Federal government to provide a better customer experience. This change will include removing Lincoln's Birthday and adding Juneteenth National Independence Day as a rate holiday. Also, because Indigenous Peoples' Day is observed annually on the same day as Columbus Day, staff recommends updating the nomenclature to show both holiday descriptions. Additionally, staff recommends modifying the text prior to the list of holidays in the commercial rate schedules to improve clarity.

Bill Impact

This change maintains the same number of rate holidays in a calendar year, however, because the holiday being removed occurs in the non-summer months, and the holiday being added occurs in the summer months when peak prices are higher, customers may benefit from this change. While customers overall may benefit from this change, individual customer bill impacts will vary upon usage.

Revenue Impact

With the proposed rate holiday changes, staff estimates SMUD may experience a revenue decrease of approximately $1.8 million due to the addition of the Juneteenth National Independence Day and an estimated revenue gain of approximately $125,000 from removing the Lincoln's birthday rate holiday. Staff estimates a net annual revenue reduction of approximately $1.7 million.

Recommendation

Effective September 22, 2023, staff recommends updating the holiday list in Rate Schedules AG Section V. Subsection D., CI-TOD1 Section VII. Subsection B., CI-TOD2 Section VII. Subsection B., CI-TOD3 Section VII. Subsection B., CI-TOD4 Section VII. Subsection B., GS-TDP Section V, Subsection D and R-TOD Section V, Subsection A to the following:

__Holiday__	*__Month__*	*__Date__*
New Year's Day	*January*	*1*
Martin Luther King Jr. Day	*January*	*Third Monday*
~~*Lincoln's Birthday*~~	~~*February*~~	~~*12*~~
Presidents Day	*February*	*Third Monday*
Memorial Day	*May*	*Last Monday*
__Juneteenth National Independence Day__	*__June__*	*__19__*
Independence Day	*July*	*4*
Labor Day	*September*	*First Monday*
__Indigenous Peoples' Day__/Columbus Day	*October*	*Second Monday*
Veterans Day	*November*	*11*
Thanksgiving Day	*November*	*Fourth Thursday*
Christmas Day	*December*	*25*

Effective September 22, 2023, staff recommends updating Section VII, Subsection B of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 as follows:

> ***The holidays recognized for the Time-of-Day*** *Billing* ***P***~~*p*~~*eriods* ***are as follows****:* ~~*shall apply during the following holidays*~~

Revisions described above are detailed in Rate Schedules AG, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, GS-TDP and R-TOD included in Volume 2 of this Report.

Modifications Related to Unauthorized Use

Purpose

Since the transition to digital communicating meters, we've been able to effectively use this technology to identify more instances of unauthorized use of electrical service. In the 2019 Rate Action, the Board approved using the Fixed Rate to bill for the collection of revenue associated with unauthorized use of residential electrical service, and language was added to Rate Schedule R to reflect that change. Staff recommends adding language to Rule and Regulation 10 to establish the method to bill for unauthorized use of non-residential service, simplifying the current process. Staff also recommends moving the language regarding unauthorized use of residential electrical service from Rate Schedule R to Rule and Regulation 10 and modifying the language slightly to allow time-of-day rates to be used if meter data is available. These changes will consolidate the methodologies for all customers in one location.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, staff recommends removing Section I, Subsection A, Subsection 8 of Rate Schedule R.

Effective September 22, 2023, staff recommends modifying Section IV of Rule 10 as follows:

> *Where SMUD determines that there has been unauthorized use of electrical service, SMUD may bill the customer for SMUD's estimate of such unauthorized use.* ~~*for the substantiated period of the infraction.*~~
>
> ***a. Residential Customers***
>
> ***The Fixed Rate (see Rate Schedule R) may be used for the collection of revenue associated with unauthorized use of residential electrical service regardless of the date(s) or time(s) in which the use occurred.***
>
> ***b. Non-Residential Customers***
>
> ***The applicable rate, including revenue associated with demand charges, electricity usage charges and power factor adjustment or waiver charges, will be used for the collection of revenue associated with unauthorized use of non-residential electrical service, in addition to the applicable System Infrastructure Fixed Charge as appropriate, regardless of the date(s) or time(s) in which the use occurred.***
>
> *Nothing in this rule shall be interpreted as limiting SMUD's right under any provisions of any applicable law.*

Revisions described above are detailed in Rate Schedule R and Rule and Regulation 10 included in Volume 2 of this Report.

Changes to Rules and Regulations

Rule 1 – Definitions

Purpose

SMUD's electric system is separated into two different categories – transmission and distribution. Our transmission system includes service voltage levels of 100kV or greater, and generator interconnection and wholesale transmission service is provided under SMUD's Open Access Transmission Tariff. Our distribution system includes service voltage levels below 100kV by which we serve retail load. While our retail rate schedules describe the separate distribution-level service voltages, there's no clear definition. Staff recommends adding a definition for distribution service to clearly identify what is considered part of SMUD's distribution system.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, add the following language to Rule and Regulation 1 in alphabetical order:

> ***Distribution System***
>
> ***The Distribution System consists of the three voltage classes available to customers, where SMUD provides service below 100 kV. This includes subtransmission service at a voltage level of 69 kV or as otherwise defined by SMUD, primary service at a voltage level of 12 kV or 21 kV, as well as secondary service at a voltage level below 12kV or at a level not otherwise defined as "primary" or "subtransmission".***

Revisions described above are detailed in Rule and Regulation 1 included in Volume 2 of this Report.

Rule 18 – Service to Premises and Use of Energy

Purpose

When the Rule and Regulation 18 language was originally written, there was only one rate option, and therefore it was not necessary to specifically call out a rate category used to bill customers with a master meter. However, now there are several rate options, requiring this to be updated. Staff recommends updating Rule and Regulation 18 by clarifying that tenants of mobile home parks will be charged the Master-Metered Multifamily Accommodation and Mobile Home Park (RSMM) rate.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 22, 2023, staff recommends modifying Section IV of Rule and Regulation 18 as follows:

1. *Mobile home parks for which submetering was permitted prior to August 1, 1971, and for which electric service is included in the facilities furnished to their tenants, may employ submetering equipment as a means of reselling SMUD electricity by retroactively adjusting rental charges for energy consumption, provided that the portion of such charges allocable to electricity* ***will be charged the RSMM rate*** *~~may not exceed the rates SMUD would charge if it served the tenants directly~~. Specifically, the mobile home park master-meter customer may resell electricity to their submetered tenants provided the following conditions are met:*

   a. *The tenants shall ~~not pay more than what SMUD would charge if the tenant is served directly by SMUD~~* ***be charged the RSMM rate.***

Revisions described above are detailed in Rule and Regulation 18 included in Volume 2 of this Report.

Detail of Rate Changes

Years 2024 and 2025 include proposed rate increases.

Residential Rates

Time-of-Day Rates

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
Residential Time-of-Day (5-8 p.m. Peak) Rate (RT02)						
System Infrastructure Fixed Charge	per month	$23.50	$24.15	$24.80	$25.50	$26.20
Non-Summer Peak	per kWh	$0.1547	$0.1590	$0.1633	$0.1678	$0.1724
Non-Summer Off-Peak	per kWh	$0.1120	$0.1151	$0.1183	$0.1215	$0.1248
Summer Peak	per kWh	$0.3279	$0.3369	$0.3462	$0.3557	$0.3655
Summer Mid-Peak	per kWh	$0.1864	$0.1914	$0.1967	$0.2021	$0.2077
Summer Off-Peak	per kWh	$0.1350	$0.1387	$0.1425	$0.1464	$0.1505
Electric Vehicle Credits[1]	per kWh	-$0.0150	-$0.0150	-$0.0150	-$0.0150	-$0.0150

[1] Credits apply to applicable time-based pricing periods between midnight and 6 a.m. under residential Time-of-Day Rates.

Fixed and Closed Rates

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
Residential Fixed Rate (RF01)						
System Infrastructure Fixed Charge	per month	$23.50	$24.15	$24.80	$25.50	$26.20
Non-Summer	per kWh	$0.1194	$0.1227	$0.1261	$0.1295	$0.1331
Summer	per kWh	$0.1907	$0.1959	$0.2013	$0.2069	$0.2126
Master-Metered Multifamily Accommodation and Mobile Home Park Energy Rate (RSMM) (Closed)						
System Infrastructure Fixed Charge	per month per unit	$23.50	$24.15	$24.80	$25.50	$26.20
Non-Summer	per kWh	$0.1324	$0.1360	$0.1398	$0.1436	$0.1476
Summer	per kWh	$0.1516	$0.1558	$0.1601	$0.1645	$0.1690

Miscellaneous Charges

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
Miscellaneous Residential Pricing						
Standby generation (Secondary level)	per kW	$7.713	$7.925	$8.143	$8.367	$8.597
Three-phase power	per month	$50.45	$51.85	$53.25	$54.75	$56.25

Agricultural Rates

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
Non-Demand ASN Rate (30 kW and below)						
System Infrastructure Fixed Charge	per month	$12.85	$13.20	$13.55	$13.95	$14.30
Winter kWh	per kWh	$0.1428	$0.1467	$0.1508	$0.1549	$0.1592
Summer kWh	per kWh	$0.1564	$0.1607	$0.1651	$0.1696	$0.1743
Demand ASD Rate (Over 30 kW)						
System Infrastructure Fixed Charge	per month	$29.80	$30.60	$31.45	$32.30	$33.20
Site Infrastructure Charge <= 30 kW	per kW	$0.000	$0.000	$0.000	$0.000	$0.000
Site Infrastructure Charge > 30 kW	per kW	$2.951	$3.032	$3.116	$3.201	$3.289
Winter First 8,750 kWh	per kWh	$0.1580	$0.1623	$0.1667	$0.1714	$0.1761
Winter Additional kWh	per kWh	$0.1240	$0.1275	$0.1310	$0.1346	$0.1382
Summer First 8,750 kWh	per kWh	$0.1514	$0.1556	$0.1599	$0.1643	$0.1688
Summer Additional kWh	per kWh	$0.1095	$0.1125	$0.1156	$0.1188	$0.1221
Non-Demand Time-of-Use AON Rate (30 kW and below)						
System Infrastructure Fixed Charge	per month	$17.25	$17.75	$18.25	$18.75	$19.25
Winter On-Peak	per kWh	$0.1641	$0.1686	$0.1732	$0.1780	$0.1829
Winter Off-Peak	per kWh	$0.1399	$0.1437	$0.1477	$0.1518	$0.1560
Summer On-Peak	per kWh	$0.2379	$0.2444	$0.2512	$0.2581	$0.2652
Summer Off-Peak	per kWh	$0.1279	$0.1314	$0.1350	$0.1387	$0.1425
Demand Time-of-Use AOD Rate (Over 30 kW)						
System Infrastructure Fixed Charge	per month	$103.80	$106.65	$109.60	$112.60	$115.70
Winter Site Infrastructure Charge	per kW	$2.940	$3.021	$3.104	$3.189	$3.277
Winter On-Peak	per kWh	$0.1634	$0.1679	$0.1725	$0.1773	$0.1821
Winter Off-Peak	per kWh	$0.1388	$0.1426	$0.1465	$0.1506	$0.1547
Summer Site Infrastructure Charge	per kW	$4.110	$4.223	$4.339	$4.458	$4.581
Summer On-Peak	per kWh	$0.2528	$0.2598	$0.2669	$0.2742	$0.2818
Summer Off-Peak	per kWh	$0.1348	$0.1385	$0.1423	$0.1462	$0.1502

Small Commercial & Industrial Rates (0-299 kW)

Legacy Commercial Rate

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
GFN: Service at Secondary Voltage Level						
System Infrastructure Fixed Charge	per month	$10.50	$10.80	$11.10	$11.40	$11.70
All	per kWh	$0.1539	$0.1581	$0.1624	$0.1669	$0.1715

Commercial & Industrial Rates

Season and Charge Component	Unit	Adopted	Proposed[1]						
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025	2026*	2027*	2028*
CITS-0: C&I Secondary 0-20 kW									
System Infrastructure Fixed Charge	per month	$35.15	$36.65	$37.65	$39.20	$40.30	$40.80	$41.35	$41.90
Maximum Demand Charge	per kW	$0.000	$0.713	$0.733	$1.505	$1.546	$2.320	$3.093	$3.866
Non-Summer Peak	per kWh	$0.1440	$0.1446	$0.1485	$0.1491	$0.1532	$0.1495	$0.1457	$0.1420
Non-Summer Off-Peak	per kWh	$0.1364	$0.1335	$0.1371	$0.1341	$0.1377	$0.1307	$0.1237	$0.1166
Non-Summer Off-Peak Saver	per kWh	$0.1323	$0.1276	$0.1311	$0.1261	$0.1295	$0.1208	$0.1118	$0.1029
Summer Peak	per kWh	$0.2554	$0.2718	$0.2792	$0.2968	$0.3049	$0.3151	$0.3251	$0.3354
Summer Off-Peak	per kWh	$0.1349	$0.1359	$0.1396	$0.1410	$0.1448	$0.1423	$0.1397	$0.1370
CITS-1: C&I Secondary 21-299 kW									
System Infrastructure Fixed Charge	per month	$158.30	$231.60	$237.95	$317.30	$326.05	$400.85	$474.00	$474.00
Site Infrastructure Charge	per kW	$7.568	$7.106	$7.302	$6.806	$6.993	$6.266	$5.539	$5.539
Summer Peak Demand Charge	per kW	$3.468	$5.351	$5.498	$7.525	$7.732	$9.670	$11.609	$11.609
Non-Summer Peak	per kWh	$0.1230	$0.1283	$0.1319	$0.1374	$0.1412	$0.1435	$0.1456	$0.1456
Non-Summer Off-Peak	per kWh	$0.1158	$0.1170	$0.1202	$0.1214	$0.1248	$0.1227	$0.1206	$0.1206
Non-Summer Off-Peak Saver	per kWh	$0.1030	$0.0971	$0.0998	$0.0932	$0.0958	$0.0862	$0.0770	$0.0770
Summer Peak	per kWh	$0.1983	$0.2056	$0.2113	$0.2192	$0.2252	$0.2273	$0.2293	$0.2293
Summer Off-Peak	per kWh	$0.1119	$0.1129	$0.1160	$0.1171	$0.1203	$0.1179	$0.1157	$0.1157

1. Adopted prices with proposed rate increases.

*Adopted prices with proposed rate increases for 2024 and 2025. These prices are subject to future rate increases.

Small Commercial & Industrial Rates (300-499 kW)

		Adopted	Proposed[1]						
Season and Charge Component	Unit	January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025	2026*	2027*	2028*
CITS-2: C&I Secondary 300-499 kW									
System Infrastructure Fixed Charge	per month	$428.35	$667.50	$685.85	$954.30	$980.55	$1,244.60	$1,508.75	$1,770.90
Site Infrastructure Charge	per kW	$4.597	$4.797	$4.929	$5.144	$5.286	$5.377	$5.458	$5.539
Summer Peak Demand Charge	per kW	$9.877	$10.254	$10.536	$10.950	$11.251	$11.367	$11.482	$11.609
Non-Summer Peak	per kWh	$0.1236	$0.1286	$0.1321	$0.1373	$0.1410	$0.1428	$0.1443	$0.1461
Non-Summer Off-Peak	per kWh	$0.1000	$0.1043	$0.1072	$0.1117	$0.1148	$0.1164	$0.1180	$0.1197
Non-Summer Off-Peak Saver	per kWh	$0.0990	$0.0959	$0.0985	$0.0947	$0.0973	$0.0905	$0.0838	$0.0770
Summer Peak	per kWh	$0.2195	$0.2246	$0.2308	$0.2362	$0.2427	$0.2416	$0.2405	$0.2394
Summer Off-Peak	per kWh	$0.1333	$0.1312	$0.1348	$0.1322	$0.1359	$0.1293	$0.1227	$0.1163
CITP-2: C&I Primary 300-499 kW									
System Infrastructure Fixed Charge	per month	$204.95	$256.80	$263.90	$322.50	$331.40	$331.40	$331.40	$331.40
Site Infrastructure Charge	per kW	$3.551	$3.436	$3.530	$3.392	$3.485	$3.485	$3.485	$3.485
Summer Peak Demand Charge	per kW	$9.401	$10.074	$10.351	$11.084	$11.389	$11.389	$11.389	$11.389
Non-Summer Peak	per kWh	$0.1249	$0.1370	$0.1407	$0.1556	$0.1598	$0.1598	$0.1598	$0.1598
Non-Summer Off-Peak	per kWh	$0.1033	$0.1156	$0.1188	$0.1340	$0.1377	$0.1377	$0.1377	$0.1377
Non-Summer Off-Peak Saver	per kWh	$0.0939	$0.0893	$0.0917	$0.0850	$0.0873	$0.0873	$0.0873	$0.0873
Summer Peak	per kWh	$0.2016	$0.1971	$0.2025	$0.1958	$0.2012	$0.2012	$0.2012	$0.2012
Summer Off-Peak	per kWh	$0.1277	$0.1233	$0.1267	$0.1207	$0.1240	$0.1240	$0.1240	$0.1240

1. Adopted prices with proposed rate increases.
*Adopted prices with proposed rate increases for 2024 and 2025. These prices are subject to future rate increases.

Medium Commercial & Industrial Rates (500-999 kW)

		Adopted	Proposed			
Season and Charge Component	Unit	January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
CITS-3: C&I Secondary 500-999 kW						
System Infrastructure Fixed Charge	per month	$781.65	$1,479.90	$1,520.60	$2,276.85	$2,339.50
Site Infrastructure Charge	per kW	$4.152	$4.692	$4.821	$5.391	$5.539
Summer Peak Demand Charge	per kW	$9.732	$10.350	$10.635	$11.298	$11.609
Non-Summer Peak	per kWh	$0.1225	$0.1275	$0.1310	$0.1367	$0.1405
Non-Summer Off-Peak	per kWh	$0.0992	$0.1045	$0.1074	$0.1129	$0.1160
Non-Summer Off-Peak Saver	per kWh	$0.0906	$0.0811	$0.0832	$0.0730	$0.0750
Summer Peak	per kWh	$0.2111	$0.2141	$0.2200	$0.2232	$0.2294
Summer Off-Peak	per kWh	$0.1212	$0.1138	$0.1170	$0.1088	$0.1118
CITP-3: C&I Primary 500-999 kW						
System Infrastructure Fixed Charge	per month	$297.30	$305.50	$313.90	$322.50	$331.40
Site Infrastructure Charge	per kW	$3.127	$3.213	$3.301	$3.392	$3.485
Summer Peak Demand Charge	per kW	$10.218	$10.499	$10.788	$11.084	$11.389
Non-Summer Peak	per kWh	$0.1314	$0.1350	$0.1387	$0.1425	$0.1465
Non-Summer Off-Peak	per kWh	$0.1141	$0.1172	$0.1205	$0.1238	$0.1272
Non-Summer Off-Peak Saver	per kWh	$0.0727	$0.0747	$0.0768	$0.0789	$0.0811
Summer Peak	per kWh	$0.2131	$0.2190	$0.2250	$0.2312	$0.2375
Summer Off-Peak	per kWh	$0.1084	$0.1114	$0.1144	$0.1176	$0.1208
CITT-3: C&I Subtransmission 500-999 kW						
System Infrastructure Fixed Charge	per month	$1,237.65	$1,271.70	$1,306.65	$1,342.60	$1,379.50
Site Infrastructure Charge	per kW	$3.427	$3.521	$3.618	$3.718	$3.820
Summer Peak Demand Charge	per kW	$9.960	$10.234	$10.515	$10.805	$11.102
Non-Summer Peak	per kWh	$0.1138	$0.1169	$0.1201	$0.1234	$0.1268
Non-Summer Off-Peak	per kWh	$0.0950	$0.0976	$0.1003	$0.1031	$0.1059
Non-Summer Off-Peak Saver	per kWh	$0.0618	$0.0635	$0.0652	$0.0670	$0.0689
Summer Peak	per kWh	$0.1913	$0.1966	$0.2020	$0.2075	$0.2132
Summer Off-Peak	per kWh	$0.0922	$0.0946	$0.0972	$0.0999	$0.1027

Large Commercial & Industrial Rates (1000+ kW)

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
CITS-4: C&I Secondary 1000+ kW						
System Infrastructure Fixed Charge	per month	$2,319.35	$3,592.75	$3,691.55	$3,793.10	$3,897.40
Site Infrastructure Charge	per kW	$4.876	$5.106	$5.246	$5.390	$5.539
Summer Peak Demand Charge	per kW	$6.937	$10.701	$10.996	$11.298	$11.609
Non-Summer Peak	per kWh	$0.1284	$0.1330	$0.1367	$0.1404	$0.1442
Non-Summer Off-Peak	per kWh	$0.1048	$0.1094	$0.1124	$0.1154	$0.1186
Non-Summer Off-Peak Saver	per kWh	$0.0833	$0.0705	$0.0724	$0.0744	$0.0765
Summer Peak	per kWh	$0.2048	$0.2182	$0.2242	$0.2304	$0.2367
Summer Off-Peak	per kWh	$0.1143	$0.1061	$0.1090	$0.1121	$0.1151
CITP-4: C&I Primary 1000+ kW						
System Infrastructure Fixed Charge	per month	$297.30	$305.50	$313.90	$322.50	$331.40
Site Infrastructure Charge	per kW	$4.400	$4.521	$4.645	$4.773	$4.904
Summer Peak Demand Charge	per kW	$10.218	$10.499	$10.788	$11.084	$11.389
Non-Summer Peak	per kWh	$0.1295	$0.1331	$0.1367	$0.1405	$0.1444
Non-Summer Off-Peak	per kWh	$0.1051	$0.1080	$0.1110	$0.1140	$0.1172
Non-Summer Off-Peak Saver	per kWh	$0.0679	$0.0697	$0.0716	$0.0737	$0.0757
Summer Peak	per kWh	$0.1997	$0.2052	$0.2108	$0.2166	$0.2226
Summer Off-Peak	per kWh	$0.1014	$0.1042	$0.1071	$0.1100	$0.1130
CITT-4: C&I Subtransmission 1000+ kW						
System Infrastructure Fixed Charge	per month	$1,178.85	$1,271.70	$1,306.65	$1,342.60	$1,379.50
Site Infrastructure Charge	per kW	$3.479	$3.521	$3.618	$3.718	$3.820
Summer Peak Demand Charge	per kW	$6.636	$10.234	$10.515	$10.805	$11.102
Non-Summer Peak	per kWh	$0.1228	$0.1295	$0.1330	$0.1367	$0.1404
Non-Summer Off-Peak	per kWh	$0.0998	$0.1058	$0.1087	$0.1117	$0.1148
Non-Summer Off-Peak Saver	per kWh	$0.0774	$0.0684	$0.0703	$0.0722	$0.0742
Summer Peak	per kWh	$0.1699	$0.1824	$0.1874	$0.1926	$0.1978
Summer Off-Peak	per kWh	$0.1050	$0.1014	$0.1042	$0.1071	$0.1100

Temperature Dependent Pricing Rate (TDP)

Season and Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
GDT-99: Service at Subtransmission Voltage Level (Closed)						
System Infrastructure Fixed Charge	per month	$334.10	$343.30	$352.75	$362.45	$372.40
Site Infrastructure Charge	per kW	$0.652	$0.670	$0.688	$0.707	$0.726
Winter On-Peak	per kWh	$0.1156	$0.1188	$0.1221	$0.1254	$0.1288
Winter Off-Peak	per kWh	$0.0826	$0.0849	$0.0872	$0.0896	$0.0921
Summer Super-Peak Demand Charge						
Heat Storm	per kW	$6.709	$6.893	$7.083	$7.278	$7.478
Extremely Hot	per kW	$6.305	$6.478	$6.657	$6.840	$7.028
Very Hot	per kW	$1.170	$1.202	$1.235	$1.269	$1.304
Mild to Hot	per kW	$0.000	$0.000	$0.000	$0.000	$0.000
Summer Super-Peak	per kWh	$0.1572	$0.1615	$0.1660	$0.1705	$0.1752
Summer On-Peak	per kWh	$0.1382	$0.1420	$0.1459	$0.1499	$0.1540
Summer Off-Peak	per kWh	$0.1039	$0.1068	$0.1097	$0.1127	$0.1158

Combined Heat & Power (CHP) Distributed Generation

Charge Component	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
Combined Heat & Power (CHP) Distributed Generation						
Reserved Capacity Charge						
Secondary	per kW	$7.423	$7.627	$7.837	$8.052	$8.274
Primary	per kW	$7.423	$7.627	$7.837	$8.052	$8.274
Subtransmission	per kW	$7.133	$7.329	$7.531	$7.738	$7.951

Distribution Wheeling Service

Voltage Level	Unit	Adopted	Proposed			
		January 1, 2023	January 1, 2024	May 1, 2024	January 1, 2025	May 1, 2025
12/21 kV	$/kW-month	$11.152	$11.459	$11.774	$12.098	$12.430
69 kV	$/kW-month	$1.737	$1.785	$1.834	$1.884	$1.936

Miscellaneous Commercial Charges

		Adopted	Proposed			
Charge Component	**Unit**	**January 1, 2023**	**January 1, 2024**	**May 1, 2024**	**January 1, 2025**	**May 1, 2025**
Power Factor Adjustment	per excess kVar x kWh	$0.0127	$0.0130	$0.0134	$0.0138	$0.0142
Power Factor Waiver	per excess kVar	$0.3372	$0.3465	$0.3560	$0.3658	$0.3759
Standby Charges for Customer Generation						
Secondary Voltage Service	per kW of contract capacity	$7.713	$7.925	$8.143	$8.367	$8.597
Primary Voltage Service		$6.129	$6.298	$6.471	$6.649	$6.832
Subtransmission Voltage Service		$3.096	$3.181	$3.269	$3.359	$3.451

Outdoor Street and Traffic Lighting Rates

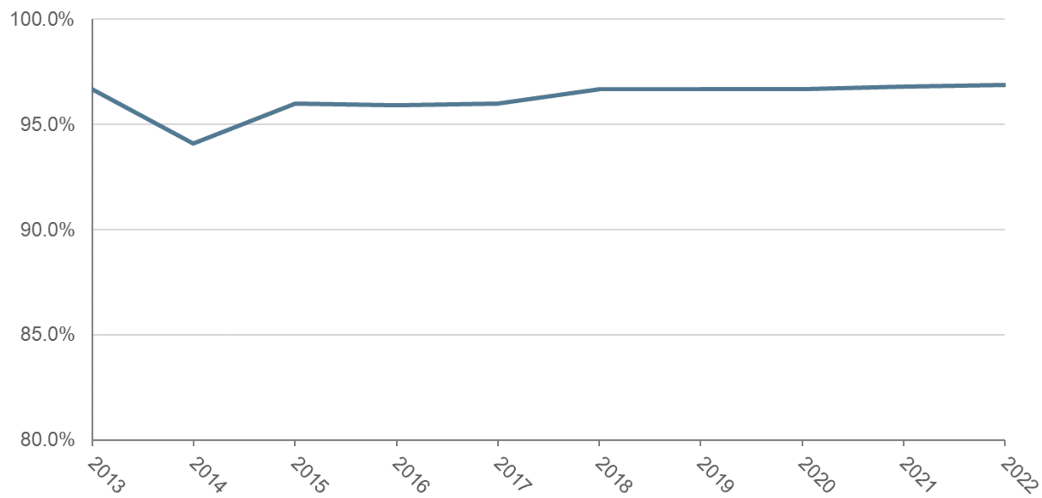
		Adopted	Proposed			
Charge Component	**Unit**	**January 1, 2023**	**January 1, 2024**	**May 1, 2024**	**January 1, 2025**	**May 1, 2025**
Metered Customer owned and maintained (COM_M)						
System Infrastructure Fixed Charge	per month	$10.70	$11.00	$11.30	$11.60	$11.95
Year-round energy charges	per kWh	$0.0925	$0.0950	$0.0976	$0.1003	$0.1031
Unmetered Streetlighting Rates						
Monthly charge (per rated wattage of lamp & ballast)						
NLGT Outdoor Lighting Service		$0.0308	$0.0316	$0.0325	$0.0334	$0.0343
Customer-owned and maintained (COM)		$0.0308	$0.0316	$0.0325	$0.0334	$0.0343
SMUD (District) owned and maintained (DOM)		$0.0308	$0.0316	$0.0325	$0.0334	$0.0343
Customer-owned SMUD (District) maintained (CODM)		$0.0308	$0.0316	$0.0325	$0.0334	$0.0343
TC ILS Traffic Control -- Intersection Lighting Service						
System Infrastructure Fixed Charge	per month	$6.36	$6.53	$6.71	$6.90	$7.09
Year-round energy charges	per kWh	$0.1161	$0.1194	$0.1226	$0.1259	$0.1294
TSS Traffic Signal Service SL_TSF (Closed)						
<70 watts	per unit	$4.61	$4.74	$4.87	$5.00	$5.14
> 70 watts	per lamp per watt	$0.0323	$0.0332	$0.0341	$0.0350	$0.0360
Minimum monthly charge		$4.61	$4.74	$4.87	$5.00	$5.14

Information on SMUD Performance

Customer Satisfaction

SMUD continues to earn high marks from customers for customer satisfaction. The following chart shows the percentage of customers who were satisfied or very satisfied in follow-up surveys we conducted with customers. These ongoing surveys are conducted after performing services including troubleshooting problems, new service connections and tree trimming, starting service, billing inquiries and outage communication. Customer satisfaction ratings have been 94.1% or higher for the past decade and came in at 96.8% in 2021 and 96.9% in 2022.

Figure 17 – Customer Satisfaction Survey Results



Since 2000, we've participated in the annual Electric Utility Residential Customer Satisfaction Study conducted by J.D. Power and Associates. This study ranks electric utilities from across the United States on a Customer Satisfaction Index and on six sub-components to the overall satisfaction index. We've ranked in the top three in the western region on the residential Customer Satisfaction Index since 2004 and top three in the west midsize region on the business Customer Satisfaction Index since 2010. Results of the 2022 surveys for residential and business are shown in Figures 18 and 19.

Figure 18 – J.D. Power 2022 Residential Satisfaction Index

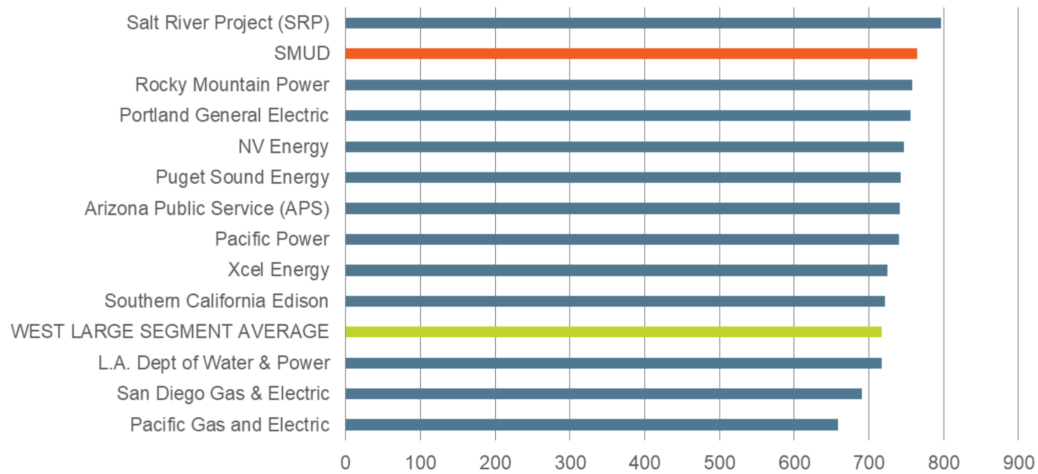
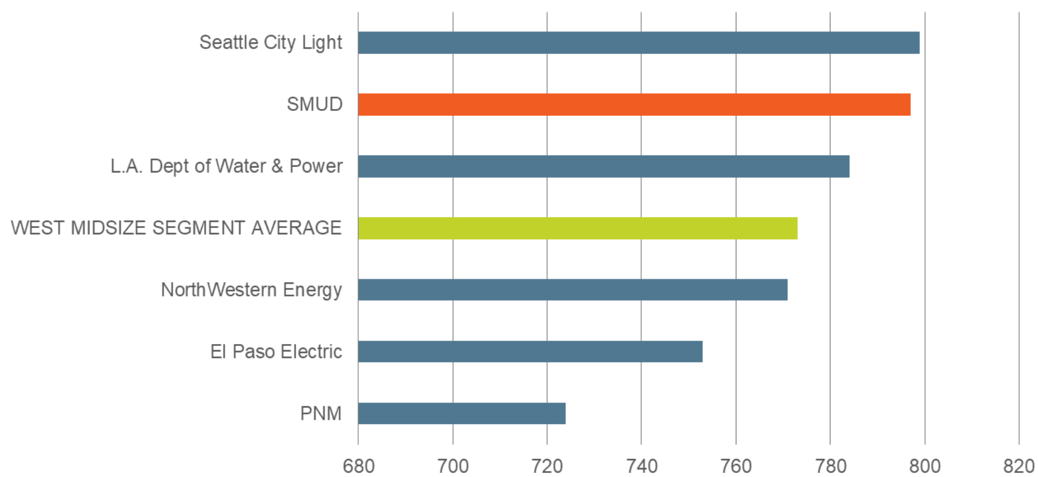


Figure 19 – J.D. Power 2022 Business Satisfaction Index



System Average Interruption

SMUD measures the overall reliability of the distribution system using the System Average Interruption Frequency Index (SAIFI) and the System Average Interruption Duration Index (SAIDI).

For SAIFI, SD-4 Reliability limits the average frequency of outages per customer to:

- With a major event: 0.99 to 1.33 average outages per customer per year.
- Excluding a major event: 0.85 to 1.14 average outages per customer per year.

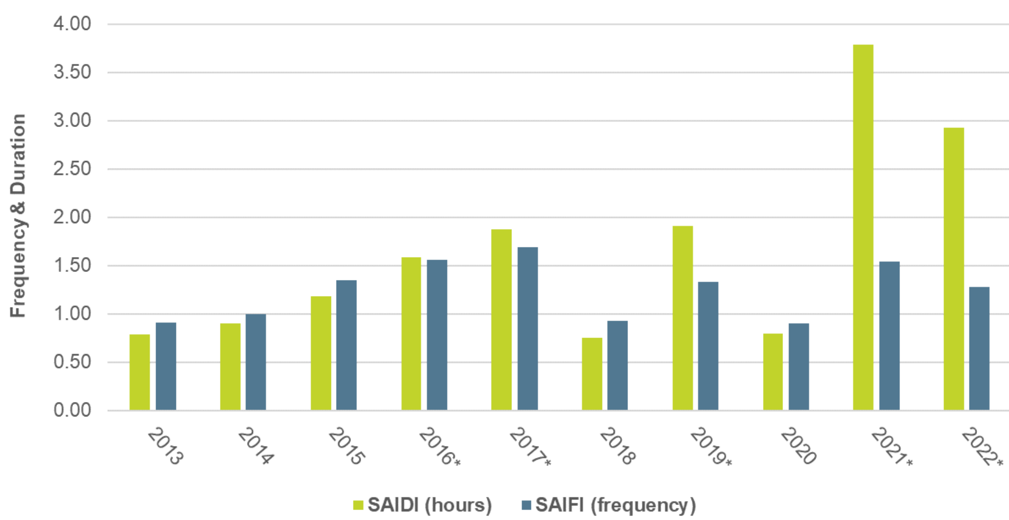
For SAIDI, SD-4 Reliability limits the average duration of outages per customer per year:

- For a major event, 67.5 to 93.3 minutes.
- Excluding a major event, 49.7 to 68.7 minutes.

Our system reliability for SAIDI and SAIFI with major events fell outside the acceptable range set by Board Policy SD-4 on Reliability for 2021, but standards for SAIDI and SAIFI excluding major events were met in 2021. In 2022, the system reliability standard for SAIDI with major events was not met. However, the system reliability standard was met for SAIDI and SAIFI without major events and was also met for SAIFI with major events in 2022.

In 2021, there were two qualifying major events, which fell on January 26-29 and December 13. In 2022 there was one qualifying major event on December 31. Annual system maintenance initiatives designed to enhance reliability include the Distribution Line Inspection Program, the Cable Replacement program and the Vegetation Management Program.

Figure 20 – SMUD Outage Duration and Frequency by Year

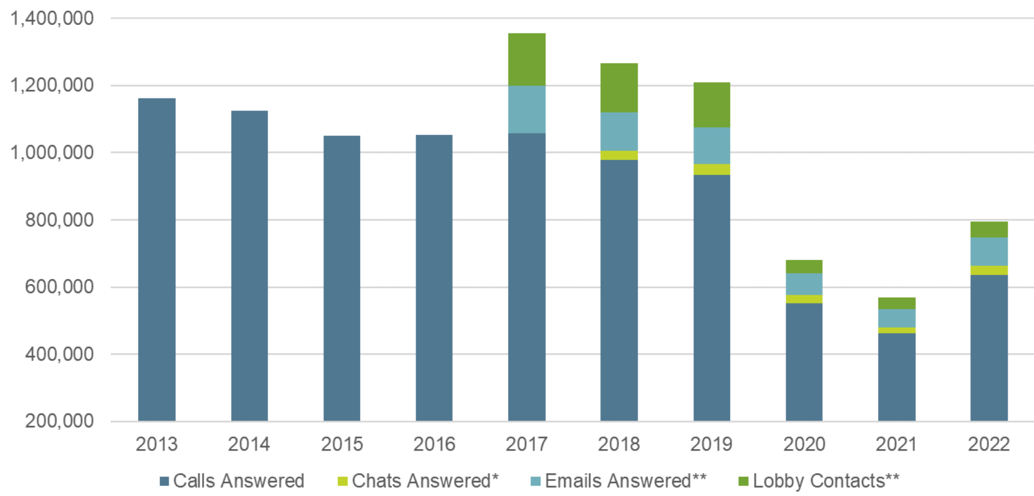


*Years with major events.

Customer Contacts

SMUD's Contact Center and Lobby continue to manage a high volume of customer contacts each year. In the past, we only tracked data on calls answered, and in 2016 we expanded tracking by including all emails answered and all lobby contacts. In addition, in 2017 we introduced an online chat feature on smud.org. 2018 was the first full year that online chat was available to customers. All the customer contact data from 2013 to 2022 can be seen in Figure 21. From 2013 to 2019, we had more than 1 million customer contacts per year including calls, chats, emails, faxes and lobby interactions. The total number of contacts dropped significantly in 2020 to 681,639 for all channels. This can be explained by our decision to suspend customer power shutoffs for non-payment and closing the SMUD lobby in mid-March of 2020 due to the impact of COVID-19. We resumed collections activities in the first quarter of 2022 and opened the lobby to customers in alignment with all safety protocols. Customer contacts increased back to 796,020 in 2022. Customers behind on payments have been encouraged to contact us to make payment arrangements or to inquire about energy assistance rates and other programs that could be beneficial.

Figure 21 – Customer Contacts Answered by Year



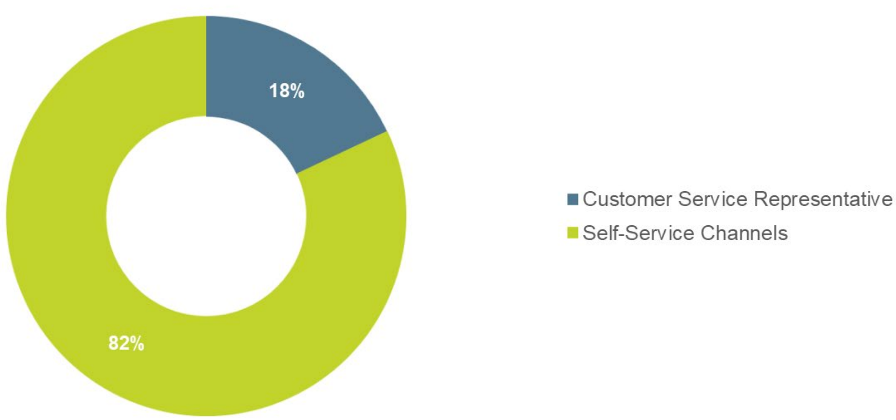
*2018 was the first full year that chat was available.
**2017 was the first full year tracking all emails answered and lobby contacts.

Other Customer Service Information

When customers need to make a payment, create an installment plan, move/transfer service and report an outage, they have the option to use our self-service options or they can go through a Customer Service Representative (CSR). If a CSR performs one of these transactions by phone, email, chat or lobby, it's counted as an assisted transaction. If the customer completes the transaction without the help of a CSR, it's counted as an unassisted transaction.

The use of SMUD's self-service channels continues to grow with 82% of primary transactions completed in a self-service channel in 2022. This number is up from 79% in 2020, which demonstrates the need to continue to invest in technology enhancements that promote and expand self-service options.

Figure 22 – Self-Service transactions vs. the CSR Channel in 2022



Environmental Assessment

1.0 Section 21080(b)(8) 21080(b)(8) of the California Public Resources Code and Section 15273 of the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Title 14, Sections 15000, et seq.) provide that CEQA does not apply to the establishment, modification, structuring, restructuring, or approval of rates, tolls, fares, and other charges by public agencies which the public agency finds are for the purpose of:

(1) Meeting operating expenses, including employee wage rates and fringe benefits;

(2) Purchasing or leasing supplies, equipment, or materials;

(3) Meeting financial reserve needs and requirements;

(4) Obtaining funds for capital projects necessary to maintain service within existing service areas; or

(5) Obtaining funds that are necessary to maintain such intra-city transfers as are authorized by city charter.

2.0 Section 15061(b) (3) of the CEQA Guidelines provides that where it can be said with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

3.0 The proposed actions to increase the residential, agricultural, commercial, and street/traffic/lighting rates, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

4.0 The proposed action to make modifications to Rate Schedules R and R-TOD, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

5.0 The proposed action to modify the three-phase charge application, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

6.0 The proposed action to remove references to legacy rates and other modifications to CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

7.0 The proposed action to modify Rate Schedule Hydro Generation Adjustment, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

8.0 The proposed action to modify Rate Schedule Campus Billing, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

9.0 The proposed action to modify Rate Schedule Distribution Wheeling Service, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

10.0 The proposed action to adopt an ESF Additional Discount for the 0-50% FPL low-income customers, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

11.0 The proposed action to update the applicability of the Generator Standby Charge (or Standby Service Charge), is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

12.0 The proposed action to update the Rate Holidays, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

13.0 The proposed action to modify Rule 10 to address unauthorized use of electrical service, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

14.0 The proposed action to modify Rule 1, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

15.0 The proposed action to modify Rule 18, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

SMUD Programs and Web Links

We have information on a variety programs and bill assistance options available to customers that can be found at the following links:

Rebates, Incentives and Financing

https://www.smud.org/Rebates

Calculate Energy Consumption

https://www.smud.org/MyEnergyUse

Learn About Energy Efficiency

https://www.smud.org/EnergyTips

Payment Assistance Programs

https://www.smud.org/FinancialAssistance

Business Solutions and Rebates

https://www.smud.org/Business

Energy Assistance Program Rate

https://www.smud.org/EAPR

Critical Peak Pricing

https://www.smud.org/CPP

Clean PowerCity

https://www.CleanPowerCity.org

Strategic Direction

Our Strategic Direction guides us in the decisions we make about SMUD's policies and operations. Our Board continually reviews and refines these guidelines to make sure we'll meet customers' energy needs, both now and in the future.

SD-1A

SMUD's purpose is to enhance the quality of life for our customers and community by providing reliable and affordable electricity, and leading the transition to a clean energy future.

SD-1B

SMUD's vision is to be a trusted and powerful partner in achieving an inclusive, zero carbon economy. SMUD will leverage its relationships to accelerate innovation, ensure energy affordability and reliability, protect the environment, eliminate greenhouse gas emissions, catalyze economic and workforce development, promote environmental justice and enhance community vitality for all.

SD-2

Maintaining competitive rates is a core value of SMUD.

Therefore:

a) The Board establishes a rate target of 18 percent below Pacific Gas & Electric Company's published rates on a system average basis. In addition, the Board establishes a rate target of at least 10 percent below PG&E's published rates for each customer class.

b) SMUD's rates shall be competitive with other local utilities on a system average basis.

c) In addition, SMUD's rates shall be designed to balance and achieve the following goals:

i) Reflect the cost of energy when it is used or exported to the SMUD grid;

ii) Reduce consumption during periods of high system demand;

iii) Encourage energy efficiency, conservation and carbon reduction;

iv) Encourage cost effective and environmentally beneficial Distributed Energy Resources (DERs) (examples of DERs include but are not limited to rooftop solar, battery storage, and energy reduction applications);

v) Minimize the rate of change in the transition from one rate design to another;

vi) Provide customers flexibility and choices;

vii) Be as simple and easy to understand as possible;

viii) Address the needs of people with low incomes and severe medical conditions; and

ix) Equitably allocate costs across and within customer classes.

SD-3

Maintaining access to credit is a core value of SMUD.

Therefore:

a) For SMUD's annual budgets, the Board establishes a minimum target of cash coverage of all debt service payments (fixed charge ratio) of 1.5 times.

b) When making resource decisions, SMUD shall weigh the impacts on long-term revenue requirements, debt, financial risk and flexibility.

c) SMUD's goal is to maintain at least an "A" rating with credit rating agencies.

SD-4

Meeting customer energy requirements is a core value of SMUD.

Therefore:

a) SMUD will assure all customer energy requirements are met. This will be accomplished through the use of: (i) its generation resources and purchase power portfolio 100 percent of the time; and (ii) its transmission assets to assure an overall availability of at least 99.99 percent.

b) SMUD will achieve distribution system reliability by:

Limiting the average frequency of outage per customer per year to:

- With major event: 0.99 – 1.33
- Excluding major event: 0.85 – 1.14

Limiting the average duration of outages per customer per year to:

- With major event: 67.5 – 93.3 minutes
- Excluding major event: 49.7 – 68.7 minutes

Ensuring that no individual circuits exceed these targets for more than two consecutive years. For circuits that exceed these targets for two consecutive years. For circuits that exceed these targets for two consecutive years, a remedial action plan will be issued and completed within eighteen months.

c) SMUD will maintain the electric system in good repair and make the necessary upgrades to maintain load serving capability and meet regulatory standards.

SD-5

Maintaining a high level of customer relations is a core value of SMUD. Additionally, the Board sets a customer satisfaction target of 95 percent with no individual component measured falling below 85 percent. In addition, the Board establishes an overall customer experience "value for what you pay" target of 70 percent by the end of 2025 and 80 percent by the end of 2030, with neither the average commercial customer score falling below 69 percent nor the average residential customer score falling below 65 percent in any year.

As part of this policy:

a) SMUD customers shall be treated in a respectful, dignified and civil manner.

b) SMUD shall communicate a procedure for customers who believe they have not received fair treatment from SMUD to be heard.

SD-6

Creating a safe environment for employees and the public is a core value of SMUD.

Through best practice methods and continuous improvement, SMUD will be recognized as a leader in employee safety while also assuring the safety of the public related to SMUD operations and facilities. SMUD commits to a proactive approach, including the active involvement of SMUD leadership, employees, contractors, and the community, as well as comprehensive monitoring of organizational and public safety performance.

Therefore, SMUD will continue to improve safety results to:

Workplace Safety

a) Reduce SMUD's injury severity incidents to 13 or less than by 2025, as measured by OSHA's Days Away Restricted Time (DART), a rate that demonstrates top quartile safety performance for similar size utilities using the Bureau of Labor Statistics (BLS) work-related safety data.

b) Provide timely, quality health care for injured employees that aids their recovery while maintaining positive financial performance of the workers' compensation program.

Contractor Safety

a) Support contractors to reduce and eliminate potential hazards for Serious Injuries and/or Fatality (SIF) when conducting high risk work.

Public Safety

a) Track and report injuries to the public related to SMUD operations or facilities.

b) Implement measures to protect the public from injuries related to SMUD operations or facilities.

SD-7

Environmental leadership is a core value of SMUD. In achieving this directive, SMUD will:

a) Conduct its business affairs and operations in a sustainable manner by continuously improving pollution prevention, minimizing environmental impacts, conserving resources, and promoting equity withing SMUD's diverse communities.

b) Provide leadership and innovation to improve air quality and reduce greenhouse gas emissions.

c) Promote the efficient use of energy by our customers.

d) Advance the electrification of vehicles, buildings and equipment.

e) Attract and build partnerships with customers, communities, policy makers, the private sector and other stakeholders.

SD-8

Developing and maintaining a high quality, diverse and inclusive workplace that engages and inspires employees to commit to SMUD's purpose, vision and values is a core value of SMUD.

SMUD is committed to diversity and inclusion and will foster and support a workplace that values employees representing a variety of backgrounds, including but not limited to, race, ethnicity, gender, gender identification and/or expression, sexual orientation and identification, national origin, age, physical abilities, veteran status, socio-economic status, life experiences, talents, and thinking styles.

Therefore:

a) SMUD shall attract and retain a highly qualified and diverse workforce.

b) SMUD shall promote inclusion and diversity and engage its workforce in activities that demonstrate and support inclusion and diversity across the organization.

c) SMUD shall engage its workforce in personal and professional development.

d) SMUD's percentage of engaged employees as measured through the Engagement Index shall exceed 80%.

e) SMUD shall use a broad mix of communication and outreach channels to ensure its recruitment activities reflect the diversity of the communities it serves.

d) SMUD shall maintain and communicate written policies that define procedures and expectations for staff and provide for effective handling of grievances.

f) Annually, and consistent with State and Federal law, the Board shall receive a report detailing the demographics and trends of the SMUD workforce, the available workforce, and the Sacramento region. The report shall also provide information on veterans as a part of SMUD's workforce.

SD-9

It is a core value of SMUD to provide its customers and community with a sustainable power supply using an integrated resource planning process.

A sustainable power supply is one that reduces SMUD's greenhouse gas (GHG) emissions to serve retail customer load to Zero by 2030. Zero GHG emissions will be achieved through investments in energy efficiency, clean distributed energy resources, renewables portfolio standard (RPS) eligible renewables, energy storage, large hydroelectric generation, clean and emissions free fuels, and new technologies and business models. Additionally, SMUD will continue pursuing GHG savings through vehicle, building and equipment electrification.

SMUD shall assure reliability of the system, minimize environmental impacts on land, habitat, water and air quality, and maintain competitive rates relative to other California electricity providers.

To guide SMUD in its resource evaluation and investment, the Board sets the following energy supply goal:

Year	Greenhouse Gas Emissions (metric tons)
2020	2,318,000
2030 - beyond	0

In keeping with this policy, SMUD shall also achieve the following:

a) Pursue energy efficiency and electrification to reduce carbon emissions by 365,000 metric tons from buildings and 1,000,000 metric tons from transportation in 2030 (the equivalent of 112,000 single family homes and 288,000 passenger vehicles electrified).

b) Procure renewable resources to meet or exceed the state's mandate of 33% of SMUD's retail sales by 2020, 44% by 2024, 52% by 2027, and 60% of its retail sales by 2030 and thereafter, excluding additional renewable energy acquired for certain customer programs.

c) In meeting GHG reduction goals, SMUD shall:

i) Emphasize local and regional benefits.

ii) Improve equity for under-served communities.

d) Explore, develop, and demonstrate emerging GHG-free technologies and business models.

e) Promote cost effective, clean distributed generation through SMUD programs.

SD-10

Delivering innovative solutions, products and services to our customers is a core value. To assure our long-term competitiveness, SMUD shall invest in research and development projects that support its core and key values, and integrate emerging technologies and new business models into SMUD's customer offerings in a way that balances risk and opportunity and benefit our customers and community.

SD-11

Supporting and strengthening the public power business model is a core value. Local decision making and flexibility are essential to effective and responsible local governance. Community-owned utilities are primarily accountable to customers, not stockholders. Community citizens have a direct voice in public power decisions.

Preservation of this business model is vital to ensure public power systems continue to provide innovative solutions tailored to best meet the needs of their customers and communities.

SD-12

Maintaining the public trust and confidence in the integrity and ethical conduct of the Board and SMUD employees is a core value. Therefore, to ensure the public interest is paramount in all official conduct, the Board shall adopt and update, as necessary: a Conflict of Interest Code as required by State law. SMUD shall also maintain and enforce a code of conduct applicable to all employees.

Among other things the code of conduct shall:

a) Require high ethical standards in all aspects of official conduct;

b) Establish clear guidelines for ethical standards and conduct by setting forth those acts that may be incompatible with the best interests of SMUD and the public;

c) Require disclosure and reporting of potential conflicts of interest; and

d) Provide a process for (i) reporting suspected violations of the code of conduct and policies through multiple channels, including an anonymous hotline, and (ii) investigating suspected violations.

SD-13

Promoting the economic vitality of our region and the growth of our customer base is a key value of SMUD. Therefore, SMUD shall exercise strategic leadership and actively participate in regional economic development.

Specifically:

a) SMUD shall promote innovation while maintaining rate affordability and balancing the other strategic directions.

b) SMUD shall align its economic development activities with regional economic development initiatives.

c) SMUD shall assist in retaining, recruiting and growing commercial and industrial rate-paying customers.

d) SMUD shall offer economic development rates and program incentives.

e) SMUD shall offer a contracting program for certified small businesses who are rate-paying customers.

SD-14

As a community-owned utility, SMUD recognizes that the relocation or underground placement of primary voltage power lines may be desirable to local jurisdictions to improve aesthetics, economic vitality, safety and disabled access. Therefore, it is a key value of SMUD to make selected distribution system enhancements, such as permanent relocation or underground placement of primary power lines below 69 kV.

a) SMUD will, at its expense and where technically feasible, permanently relocate or underground existing overhead distribution facilities provided the governing body of the city or county in which the electric facilities are and will be located has:

i) Identified, after consultation with SMUD, a specific system enhancement project;

ii) Determined the project is in the public interest;

iii) Ensured all existing overhead communication facilities related to the project will also be permanently relocated or placed underground;

iv) Obtained and provided SMUD with all easements necessary for the project.

b) After achievement of core financial targets, SMUD will annually commit up to one-half of one percent of its annual gross electric sales revenue to system enhancements. The proposed projects will be subject to the SMUD's annual budget approval process, and uncommitted funds from any given year will not be carried over to future years. Funding will be assigned to projects brought forward by local cities or counties based on applying the following criteria (not in order of preference):

i) Project scale and/or cost when measured against available SMUD resources.

ii) Requesting entity has developed full scope, obtained all necessary easements, and development plan for customer service conversion from overhead to underground, as required.

iii) Extent to which the costs are borne by others.

SD-15

Providing broad outreach and communication to SMUD's customers and the community is a key value of SMUD.

Specifically:

a) SMUD shall provide its customers the information, education and tools they need to best manage their energy use according to their needs.

b) SMUD will use an integrated and consistent communication strategy that recognizes the unique customer segments that SMUD serves.

c) SMUD's communication and community outreach activities shall reflect the diversity of the communities we serve. SMUD shall use a broad mix of communication channels to reach all customer segments. This communication shall be designed to ensure that all groups are aware of SMUD's major decisions and programs.

SD-16

Proper management of cyber and physical information, as well as physical security, is a core value. Robust information management and physical security practices are critical to effective risk management and to ensure regulatory compliance, business resiliency and customer satisfaction. SMUD shall take prudent and reasonable measures to accomplish the following:

a) Information Security: SMUD will protect customer, employee and third party information, and SMUD information systems are protected from unauthorized access, use, disclosure, disruption, modification, or destruction.

b) Physical Security: SMUD will safeguard its employees while at work as well as customers and visitors at SMUD facilities. SMUD will also protect its facilities and functions that support the reliability of the electric system and overall operation of the organization from unauthorized access or disruption or business operations.

c) Customer Privacy: SMUD will annually notify customers about the collection, use and dissemination of sensitive and confidential customer information. Except as provided by law or for a business purpose, SMUD will not disseminate sensitive and confidential customer information to a third party for non-SMUD business purposes unless the customer first consents to the release of the information. Where sensitive and confidential information is disseminated for a business purpose, SMUD will ensure: (i) the third party has robust information practices to protect the sensitive and confidential customer information, and (ii) use of the information by the third party is limited to SMUD's business purpose. SMUD will maintain a process that identifies the business purposes for which SMUD will collect, use and disseminate sensitive and confidential customer information.

d) Records Management: SMUD will maintain the efficient and systematic control of the creation, capture, identification, receipt, maintenance, use, disposition, and destruction of SMUD records, in accordance with legal requirements and Board policies.

SD-17

Effectively balancing and managing risk to further SMUD's policies and business goals is a core value of SMUD.

Therefore:

SMUD will implement and maintain an integrated enterprise risk management process that identifies, assesses, prudently manages and mitigates a variety of risks facing SMUD, including financial, supply, operational, physical and cyber security, climate change, legal, legislative and regulatory, and reputational risk.

SD-19

Broadening and diversifying the products and services that SMUD offers is a key value. The desired results are to: a) generate new revenues that contribute to SMUD's long-term financial health; b) spur the creation of innovative products and services; c) capture the value of SMUD's brand and intellectual property; d) better leverage and optimize SMUD's assets; and e) enable SMUD to continue to attract and retain a talented workforce.

Therefore:

a) SMUD shall broaden and diversify its lines of business, which may include:

i) Being an external service provider;

ii) Expanding wholesale energy market opportunities;

iii) Capitalizing on intellectual property and assets to develop products and services either solely or through strategic partnerships;

iv) Selling products and services aligned with SMUD's purpose and Strategic Directions.

b) SMUD shall ensure any new lines of business:

i) Benefit SMUD's customers and our community;

ii) Achieve a balanced, diversified portfolio of rewards and risks;

iii) Create economic value without compromising SMUD's financial health;

iv) Do not pose unreasonable risk to SMUD's reputation;

v) Align with, leverage, and optimize SMUD’s strengths, assets and expertise;

vi) Position SMUD for the future.

Compliance

Introduction

California voters approved Proposition 26 in November 2010, and that measure provides that every "levy, charge, or exaction of any kind imposed by a local government" is treated as a tax subject to voter approval, with exceptions discussed below. (Cal. Const., art. XIII C, § 1, subd. (e).) Proposition 26 therefore applies only to charges that are "imposed" by local government. SMUD rates are not "imposed" on customers for purposes of Proposition 26, because that language requires some exercise of government force or authority, which is not involved when a public agency, such as SMUD, provides services to customers in a competitive market. SMUD customers pay only for the voluntary use of service, and they have meaningful alternatives to that service, such as self-generation and storage with solar, hydro, fuel cell, wind, geothermal power and batteries.

Proposition 26 Does Not Apply to SMUD Rates

Although Proposition 26 therefore does not govern SMUD electric rates, the rate structure developed for this Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services ("Report") complies with Proposition 26, which includes seven exceptions that treat certain charges imposed by local government agencies as fees rather than taxes, four of which are relevant to SMUD charges.

Cost-Justified Fees for Benefits and Services

First, charges for benefits conferred upon the payor, or for specific government services provided directly to the payor, are excepted under Cal. Const., art. XIII C, subdivisions (e)(1) and (e)(2), respectively, provided that the charge does not exceed the reasonable cost of providing that benefit or service. The proposed rate adjustments are based upon cost of service principles, because these adjustments bring charges closer to recovering the cost of service, and the extent to which they exceed cost is the result of grandfathered rate-making legislative choices that predate Proposition 26, which the measure does not disturb.

The cost-of-service analysis that demonstrates cost-justification for the proposed rates is the SMUD Rate Costing Study ("2022 Rate Study") which is incorporated herein by this reference.

Proposed Adjustments

The rate proposals in this Report include: 1) a rate increase that applies to all customer classes, (2) modifications to the hydro generation charge, (3) clarification on applicability of the Generator Standby Service Charge, the name of which has been updated to "Standby Service Charge" in order to accommodate different types of technology that may be used by customers, (4) establishment of an ESF to provide an additional EAPR discount for qualifying low-income customers.

1) Rate Increases for All Customer Classes

SMUD has determined that current rates are not sufficient to recover SMUD's cost of service for any customer class and therefore recommends rate increases for each customer class to align with the cost of service. The proposed rate increases are based on cost of service principles because the primary cost-drivers of this rate increase are increased costs for wildfire mitigation, reliability compliance, technology solutions, materials and O&M and IRP implementation. As noted above, charges for services and benefits that reasonably reflect the cost of providing those services or benefits is excepted under Cal. Const., art. XIII C, subdivisions e(1) and e(2). The proposed rate increases therefore comply with Proposition 26.

2) Hydro Generation Adjustment

SMUD has a contract with the Western Area Power Administration (WAPA) to receive a specified percentage of hydro generation each year from WAPA's Central Valley Project, and SMUD maintains a WAPA Rate Stabilization Fund (WRSF) to mitigate the financial impact of variations in the amount of energy delivered by WAPA. In years where WAPA is unable to provide the forecasted level of hydro generation due to low precipitation, we transfer money out of the WRSF to purchase replacement power or natural gas on the open market, which is more expensive than WAPA hydro generation. Alternatively, in years that WAPA delivers more energy than forecasted, we can reduce the cost of power or natural gas it purchases from more expensive sources, and the savings is then transferred into the WRSF.

Due to the prolonged drought that has reduced the balance of the WRSF, a WAPA hydro generation charge has been proposed that will prevent significant commodity budget impacts in years with low energy delivery from WAPA, which might otherwise lead to a long-term rate increase for all customers. Proceeds of the charge will be deposited into the WRSF and available to fund the difference between the cost of WAPA energy and the cost to purchase energy on the open market. Because the cost of service includes the cost of maintaining sufficient reserves, this charge falls within the Proposition 26 exception for reasonable, cost-based charges provided in article XIII C, subdivisions (e)(1) and (e)(2).

3) Generator Standby Service Charge

The Generator Standby Service Charge applies to customers that install, interconnect and operate certain types of generation resources, including a microgrid to self-supply their own power and rely upon SMUD to provide back-up service as needed. Those microgrid customers will be subject to the standby charge, which recovers the cost of standby service and therefore falls within the Proposition 26 exception provided in article XIII C, subdivisions (e)(1) and (e)(2).

Moreover, we cannot extend the Generator Standby Service Charge exemption for customers that qualify for the NEM and SSR Rate Schedules to microgrid customers, because subdivision (b) of Public Utilities Code section 8372 provides that microgrid rates and charges cannot shift costs between microgrid customers or non-microgrid customers.

The fact that this charge will be renamed "Standby Service Charge" to reflect different forms of technology is not relevant to the application of Proposition 26, which depends only on whether this charge reflects the reasonable cost of service.

4) Additional EAPR Discount

Inflation and rate increases have had a disproportional impact on EAPR customers, particularly those with income below 50% of the Federal Poverty Level. In order to provide relief, we'll establish and maintain an EAPR stabilization fund to provide an additional discount to these customers, which will be funded by available sources of discretionary revenue, such as late fees, wholesale commodity revenue, and transmission sales proceeds, among other sources. This additional monthly discount will be determined on an annual basis, and it will depend on the amount of available discretionary, non-rate revenue.

While Proposition 26 does not allow the use of retail rate revenue to subsidize low-income discounts that were not in place when the measure was adopted, it does not restrict the use of discretionary revenue from the sources described above. This additional discount may therefore be funded by the proceeds of late fees, wholesale charges, transmission sales, or any other discretionary source of revenue. Therefore, this additional discount for low-income customers is not subject to Proposition 26.

Non-Cost-Justified Fees for Use of SMUD Property; Fines and Penalties

In addition to the exceptions applicable to legacy treatment and charges for benefits and services, Proposition 26 also provides exceptions for the following categories of charges, which are not treated as taxes subject to voter approval: (1) charges for the use of government property and (2) fines and penalties. (Cal. Const., art XIII C, § 1, subdivisions (e)(4) and (e)(5).) Unlike charges for benefits and services, which cannot exceed the reasonable cost of providing those benefits and services, Proposition 26 does not limit charges for use of property and fines and penalties to the cost of service. Therefore, to the extent that SMUD's charges are for the use of SMUD property (such as wholesale rates) or fines and penalties (such as late-payment charges), those charges would comply with Proposition 26 if it applied (which, as explained above, it does not) even without a showing that such charges are limited to SMUD's costs.

Glossary

Analog and Digital Non-Communicating Meters

Analog meters have mechanical dials that a utility worker has to read each month to measure a customer's power usage. Digital non-communicating meters incorporate digital sensors and do not have communication capabilities for automatic monitoring, control and two-way communication through a wireless mesh network.

California Public Utilities Commission (CPUC)

An agency that regulates investor-owned utilities in the state of California.

Capacity Factor

The ratio of actual energy output over a period of time to the potential maximum output of energy in the same period of time, usually expressed as a percentage. This ratio can be expressed in a formula as follows:

(total kWh generated) / (hours * kW rating of the generator)

Consumer Price Index (CPI)

Government-produced monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services.

Core Values

SMUD's core values are part of the SMUD Board's Strategic Direction and are a component of all solutions for meeting customers' electrical needs. SMUD core values include competitive rates, access to credit markets, reliability, customer relations, safety, environmental leadership, employee relations, resource planning, public power business model, ethics, information management and security, enterprise risk management and emerging technologies.

Credit Markets

A financial market where participants buy and sell debt securities, usually in the form of bonds.

Days Cash on Hand

A financial metric that indicates the number of days of operating expenses that could be paid with the current cash available.

Distributed Energy Resources (DERs)

A device that produces or reduces electricity and is connected to the electric distribution system. It can provide value to the grid by reducing demand, increasing supply, or supporting voltage regulation. Examples of DERs include solar panels, wind turbines, energy storage, electric vehicles, and energy management systems.

Digital Communicating Meter

A computerized meter that incorporates digital sensors and communication capabilities for automatic monitoring, control and two-way communication through a wireless mesh network.

Distributed Generation

Distributed generation, also called on-site generation or decentralized generation, typically generates electricity from either sunlight or natural gas combustion. Distributed generation systems are small-scale power generation technologies (typically in the range of 3 to 10,000 kW) that may provide electricity directly for customer use onsite or deliver electricity back into the distribution grid.

Diversified Demand

The estimated amount of power/load that a customer will use for a given project. Typically, the actual total demand in kW is less than the total connected load. Based on that, SMUD diversifies, or reduces the estimated amount of power required for a given project. The per kW offset in rule 16 will be applied to the total estimated diversified load in kW that a customer will require to operate their business as determined by SMUD.

Electric Bill Burden (EBB)

The percentage of gross household monthly income spent on the electric bill. Below is table that shows the different EBB thresholds:

Ideal	Affordable	Unaffordable	Highly Unaffordable
0% - 4.8%	4.8% - 8.7%	8.7% - 25%	> 25%

Energy Assistance Program Rate (EAPR)

A SMUD program that offers eligible low-income customers a discount on their monthly energy bills.

Energy Information Administration (EIA)

An independent agency within the U.S. Department of Energy that develops surveys, collects energy data, and analyzes and models energy issues.

Equity Ratio

SMUD equity divided by SMUD debt and equity — this percentage shows the value of SMUD assets relative to SMUD's financial leverage.

Federal Poverty Level (FPL)

A measure of income issued every year by the United States Department of Health and Human Services. Federal poverty levels are used to determine eligibility for certain programs and benefits.

Fixed Charge Coverage or Fixed Charge Ratio

The fixed charge ratio is a measure of cash flow available for debt service payments.

Fixed Rate

The SMUD rate with fixed energy prices; one price for all kWh usage in summer, and one price for all kWh usage in non-summer months. Prices are subject to rate changes during a public rate process.

Greenhouse Gases (GHG)

Gases such as carbon dioxide, methane and nitrous oxides that trap heat in the atmosphere. Because of fossil fuel use and other human activity, greenhouse gases have been concentrating at higher levels, leading to general climate warming. SMUD produces greenhouse gases primarily through its operation of natural gas-fired power plants. SMUD is committed to reducing its GHG emissions through the use of renewable power and other means. SMUD's goal is to eliminate its greenhouse gas emissions by 2030.

Holidays

Weekend pricing shall apply during the following holidays:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Lincoln's Birthday	February	12
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Independence Day	July	4
Labor Day	September	First Monday
Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

The proposed holidays for this rate action are as follows:

Holiday	Month	Date
New Year’s Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples’ Day/ Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

Integrated Resource Plan (IRP)

A long-term utility plan for new and existing resources and transmission that balance reliability, costs and environmental objectives. The IRP is required to be filed at least every 5 years by the California Energy Commission (CEC). SMUD’s latest filing of the IRP was in 2022 and it was our 2030 Zero Carbon Plan.

J.D. Power and Associates

J.D. Power and Associates is a global marketing information services company providing forecasting, performance improvement, social media and customer satisfaction insights and solutions.

Key Values

Key Values, part of the Board’s Strategic Direction, define SMUD’s course of action regarding research and development, economic development, system enhancement and outreach and communication.

Legacy Commercial Rates

The legacy commercial rates were closed, and all customers were transitioned to the new restructured Time-of-Day rates, for rates GSS_T and GSN_T on Rate Schedule GS, and Rate Schedules GS-TOD1, GS-TOD2 and GS-TOD3.

Legacy Rate

SMUD’s flat residential rate in effect on January 1, 2017. All customers were transitioned to SMUD’s standard TOD (5-8 p.m.) Rate by February2023.

Load

The amount of power carried by a utility system or subsystem, or the amount of power consumed by an electric device, at a specified time. Load may also be referred to as demand.

Load Serving Capability

The maximum demand that can be served with all facilities in service while meeting all applicable reliability standards.

Low-income household

For SMUD program eligibility, households with income that is less than or equal to twice the federal poverty level.

Marginal Cost

The economic concept of the change in total costs that result when output is increased or decreased by a single unit.

Net Debt per Customer

A metric that measures the amount of debt outstanding, minus cash on hand, divided by the number of customers.

Net Energy Metering (NEM)

Customers who have qualifying renewable energy technologies, as defined by the NEM1 and NEM2 rate schedules, are charged for the energy SMUD delivers to them, and credited for the energy they export to SMUD (for example, solar). The amount of energy remaining after the deduction of any energy generation from metered energy consumption. SMUD's NEM pricing, rules and regulations are described in Rate Schedules NEM1 and NEM2.

Peak Periods

Hours when SMUD experiences its highest seasonal system peak and electricity is more expensive. In its time-based rates, SMUD charges higher prices for energy during the peak periods to reflect the cost of service.

Photovoltaic (PV)

Photovoltaic is a generation technology that uses semiconductors to convert solar radiation into electricity.

Plug-in Electric Vehicle (PEV)

A passenger vehicle powered by battery packs that can be recharged from an external source of electricity. Plug-in hybrid electric vehicles also have an internal combustion engine.

Power Factor

The fraction of power actually used by a customer's electrical equipment, compared to the total apparent power supplied, usually expressed as a percentage.

Rates book

A legal document that codifies prices and fees for SMUD electric rates.

Standard Customer Bill

Refers to customers who are on the standard residential rate and are not receiving any Energy Assistance Program Rate (EAPR) discount or the Medical Equipment Discount (MED).

Strategic Direction (SD)

Guidelines used by SMUD's Board of Directors in the decisions made about SMUD's policies and operations. The Board continually reviews and refines these guidelines to make sure SMUD will meet customer's energy needs, both now and in the future.

System Average Interruption Duration Index (SAIDI)

SAIDI is an index of electric system reliability that measures the average length of time for electric service outages per customer on an annual basis. Board Policy SD-4 on Reliability sets the SAIDI, excluding major events, at between 49.7 to 68.7 minutes.

System Average Interruption Frequency Index (SAIFI)

SAIFI is an index of electric system reliability that measures the frequency of electric service outages per customer on an annual basis. Board Policy SD-4 on Reliability sets the SAIFI, excluding major events, at between .85 to 1.14 outages per customer per year.

System Average Rate

Total retail revenue divided by the total kilowatt-hours sold.

System Infrastructure Fixed Charge (SIFC)

A fixed monthly charge that helps cover the cost of infrastructure, including poles, lines, transformers, service drop and meter equipment, as well as billing and customer service expenses such as the Contact Center.

Tariff

A schedule of prices and fees including terms, conditions, rules and regulations for any given electric service rate or electric rule. Tariff sheets are listed in the rates book, which is available on smud.org. Often referred to as a rate schedule.

Time-of-Day (TOD) Rate

SMUD name for a residential time-based rate that charges different prices based on the time-of-day electricity is used. With time-based rates such as the TOD (5-8 p.m. Peak) Rate, the price charged per kilowatt-hour depends on the time of day and reflects energy supply and demand. Power is typically most expensive between 5 p.m. and 8 p.m. on weekdays, especially in the summer, when heavy air-conditioning use causes spikes in electricity consumption.

Upper American River Project (UARP)

SMUD's 688-megawatt hydroelectric system in the Sierras west of Lake Tahoe. It is SMUD's most reliable and economical energy source and is an emission-free system of dams, reservoirs, and powerhouses, it helps us meet the high demand for electricity in summer months.

Western Area Power Administration (WAPA)

One of four power marketing administrations within the U.S. Department of Energy whose role is to market and transmit wholesale electricity from multi-use water projects. Their service area encompasses a 15-state region of the central and western U.S. where our more than 17,000 circuit mile transmission system carries electricity from 57 hydropower plants operated by the Bureau of Reclamation, U.S. Army Corps of Engineers and the International Boundary and Water Commission.

Unaudited Financial Statistics

SMUD Retail Energy Sales Forecast

Table 13 – SMUD Retail Energy Sales Forecast

SMUD Retail Energy Sales Forecast

Managed Monthly Megawatt Hours (MWh) by Rate Class

Year	Month	Residential	Agricultural & Irrigation	Small Commercial		Commercial Time-of-Use			Street & Traffic	Night Lighting	Total Sales (MWh)
				< 20 kW	20-299 kW	300 - 499 kW	500 - 999 kW	≥ 1000 kW			
2024	1	437,276	2,870	65,460	142,942	38,253	51,797	133,677	4,153	243	876,670
	2	380,619	2,879	62,584	140,312	36,875	51,449	129,187	4,156	242	808,304
	3	339,243	3,188	60,094	138,628	37,410	52,464	133,890	4,307	250	769,475
	4	291,839	3,900	54,493	133,560	34,438	47,688	123,979	3,985	241	694,123
	5	299,172	6,385	55,995	140,816	35,418	50,705	125,996	4,109	241	718,837
	6	389,324	10,170	63,767	157,862	37,875	53,602	139,107	4,017	240	855,965
	7	506,783	12,631	72,823	175,041	41,166	57,588	151,159	4,009	240	1,021,440
	8	508,170	12,821	72,668	175,512	41,695	58,511	153,755	3,994	239	1,027,365
	9	465,929	10,682	70,949	174,546	42,869	57,910	150,607	3,996	239	977,727
	10	337,703	6,615	61,600	155,314	39,796	55,938	139,726	3,987	238	800,917
	11	303,484	4,156	55,822	139,483	37,458	51,998	140,067	3,991	238	736,697
	12	400,453	2,725	61,777	143,498	39,021	52,450	137,870	4,047	237	842,078
2025	1	445,346	2,880	65,154	144,185	38,101	52,496	132,638	4,094	237	885,131
	2	388,692	2,852	62,341	142,047	36,688	51,754	130,405	4,098	236	819,114
	3	330,727	3,108	57,672	136,760	35,721	50,840	129,292	4,102	236	748,458
	4	295,716	3,912	54,172	135,150	34,191	47,882	125,332	3,927	235	700,517
	5	301,977	6,412	55,652	142,430	35,073	50,848	127,513	4,053	235	724,192
	6	394,113	10,209	63,519	159,668	37,589	53,779	141,854	3,960	234	864,924
	7	510,366	12,650	72,514	176,699	40,778	57,721	153,081	3,953	234	1,027,996
	8	508,457	12,821	72,186	176,721	41,184	58,547	155,647	3,939	234	1,029,736
	9	470,669	10,691	70,606	176,124	42,567	58,036	153,510	3,941	233	986,377
	10	339,532	6,588	61,099	156,473	39,430	56,027	141,621	3,932	233	804,936
	11	310,525	4,123	55,682	141,360	37,290	52,265	142,388	3,937	232	747,803
	12	409,022	2,739	61,492	145,342	38,883	52,752	141,059	3,994	232	855,515

Note: Includes energy usage of SMUD facilities.

Pro Forma Tables

Table 14 – Pro Forma Consolidated Income Statement

PRO FORMA CONSOLIDATED INCOME STATEMENT
2023-2025 ($ Millions)

	2023 Budget	2024 Projection	2025 Projection
Operating Revenues:			
Billed Sales*	1,669.2	1,677.6	1,687.8
EAPR/MED Discounts	(34.4)	(34.4)	(34.4)
Recommended Revenue Adjustment		76.7	173.5
Uncollectable Electric Sales	(10.9)	(5.9)	(5.9)
Net Sales	**1,624.0**	**1,714.1**	**1,821.1**
Other Revenue	60.1	102.9	82.1
Total Revenue	**1,684.1**	**1,816.9**	**1,903.2**
Operating Expenses:			
Commodity	485.0	565.8	579.6
Enterprise Strategy	15.6	16.6	18.0
Zero Carbon Energy Solutions	163.6	171.8	185.8
Energy Delivery & Operations	212.6	233.7	235.6
Customer/Community	93.8	96.6	103.9
Workforce, Diversity & Inclusion	15.9	15.1	15.8
Information Technology	39.3	35.7	38.3
Corporate	114.8	123.0	138.3
Enterprise	37.1	38.5	38.9
Public Good (excluding EAPR/MED Discount)	75.5	87.3	93.8
Total Operations	**1,253.2**	**1,384.1**	**1,447.9**
Depreciation, Depletion, and Amortization	246.1	241.7	262.7
Total Operating Expenses	**1,499.2**	**1,625.8**	**1,710.6**
Net Operating Income	**184.9**	**191.1**	**192.6**
Other (Income) Expenses:			
Interest Income and Other	(29.0)	(24.1)	(22.3)
Other Non Cash	(12.6)	(5.9)	(0.7)
Total Interest Income & Other	**(41.6)**	**(30.0)**	**(23.0)**
Interest Expense			
Interest Expense	95.5	129.0	147.7
Net Interest Charges	**95.5**	**129.0**	**147.7**
Change in net position - Net Income (Loss)	**131.0**	**92.1**	**67.9**
Cash Available for Fixed Debt Service	466.8	438.4	455.7
Interest Payments	107.7	123.5	139.5
Principal Payments	117.1	104.7	124.4
Total Fixed Debt Service	**224.7**	**228.2**	**263.9**
Fixed Charge Coverage Ratio	**2.08**	**1.92**	**1.73**

Notes: The recommended revenue adjustment amount per year reflects the calendar year impact of the rate increases. The Revenue Requirement tables reflect 12 months of forecasted revenue for each rate increase.

Table 15 – Pro Forma Capital Expenditures

	2023 Budget	2024 Projection	2025 Projection
Zero Carbon Energy Solutions	$ 339.4	$ 198.6	$ 112.6
Energy Delivery & Operations	184.9	245.5	306.2
Customer/Community	7.6	7.3	8.2
Information Technology	45.3	45.2	49.3
Corporate/Enterprise	46.9	53.0	74.0
Total Capital	$ 624.1	$ 549.6	$ 550.2

Table 16 – Pro Forma Consolidated Sources and Uses of Cash

PRO FORMA CONSOLIDATED SOURCES AND USES OF CASH
2023-2025 ($ Millions)

	2023 Budget	2024 Projection	2025 Projection
Operating Sources of Funds:			
Receipt from Customers	1,623.0	1,639.3	1,647.8
Recommended Revenue Adjustment		76.7	173.5
Other Electric Revenue	47.7	46.5	50.5
Total Operating Sources of Funds:	**1,670.7**	**1,762.5**	**1,871.8**
Operating Uses of Funds:			
Net Operating Expenses	763.8	810.8	860.7
Commodity Expenses	470.1	542.2	555.4
Total Operating Uses of Funds:	**1,233.8**	**1,353.0**	**1,416.1**
Net Source of Funds from Operations:	**436.9**	**409.6**	**455.7**
Financing Sources of Funds:			
Issuance of Debt	340.0	310.0	320.0
Total Financing Sources of Funds:	**340.0**	**310.0**	**320.0**
Financing Uses of Funds:			
Capital & Reserve Expenditures	624.1	549.6	550.2
Principal Payments on Debt	113.0	99.3	118.6
Net Loans	(0.2)	(0.1)	-
Interest Payments on Debt	99.9	133.0	151.1
Total Use of Funds from Financing:	**836.8**	**781.9**	**819.9**
Net Use of Funds from Financing:	**496.8**	**471.9**	**499.9**
Investing Sources of Funds:			
Interest Income	12.8	12.5	11.3
Net Source of Funds from Investing:	**12.8**	**12.5**	**11.3**
Net Source/ (Use) of Funds	**(47.2)**	**(49.8)**	**(32.8)**

Notes: The recommended revenue adjustment amount per year reflects the calendar year impact of the rate increases. The Revenue Requirement tables reflect 12 months of forecasted revenue for each rate increase.

Annual Sales Data Tables

Table 17 – Annual Sales Data by Rate Schedule – 2021

SACRAMENTO MUNICIPAL UTILITY DISTRICT
YTD TOTAL SALES DATA BY RATE SCHEDULE
AS OF: DECEMBER 2021

		RATE	YTD	YEAR-TO-DATE BILLED		YEAR-TO-DATE EST. UNBILLED	
		CATEGORY	**CUSTOMERS (a)**	**KWH**	**REVENUE**	**KWH**	**REVENUE**
AGRICULTURAL		AOD	46	274,669	51,891	206,848	38,181
		AON	60	95,497	12,943	90,885	12,227
		ASD	6,431	61,192,720	8,440,770	54,347,618	7,584,712
		ASN	22,378	23,064,524	3,625,295	20,608,144	3,230,394
	(b)	Various_1	0	0	-492	0	0
TOTAL AGRICULTURAL			**28,915**	**84,627,410**	**12,130,406.86**	**75,253,495**	**10,865,513.04**
COMMERCIAL AND INDUSTRIAL							
SMALL		CITS-0	25,379	14,238,651	2,350,657	9,739,757	2,890,617
		GFN	5,544	282,789	96,312	103,358	55,193
		GFN_C	11,484	12,023,659	2,816,300	8,408,397	1,336,321
		GSN_C	30	41,648	7,438	22,628	4,446
		GSN_T	654,893	724,949,017	121,118,684	473,240,796	79,145,212
	(b)	Various_2	0	-19,778,000	-1,994,505	0	0
TOTAL SMALL			**697,330**	**731,757,764**	**124,394,885.87**	**491,514,936**	**83,431,788.49**
LARGE		CITP-2	156	3,161,565	405,974	2,659,311	574,039
		CITS-1	5,962	61,714,126	9,345,075	40,510,059	10,821,893
		CITS-2	587	30,102,511	3,525,428	19,125,771	4,141,533
		GSS_T	86,447	1,679,436,262	258,448,138	1,166,378,975	179,967,935
		GUP_S	637	23,023,566	3,528,662	19,766,418	2,911,985
		GUS_S	3,871	420,614,795	60,726,209	308,637,920	43,992,493
		Sub-total	97,660	2,218,052,825	335,979,487.19	1,557,078,454	242,409,877.37
		CITP-3	23	1,900,229	215,750	1,184,798	233,206
		CITS-3	428	46,503,637	5,137,380	27,970,946	5,564,791
		CITT-3	9	558,304	89,289	679,721	117,805
		GUP_M	106	23,183,636	2,930,854	17,591,863	2,182,585
		GUS_M	2,407	479,132,971	64,826,877	326,293,978	44,014,341
		GUT_M	49	8,351,383	1,112,182	7,528,894	1,011,322
		Sub-total	3,022	559,630,160	74,312,331.94	381,250,200	53,124,048.96
		CITP_N1	3	1,985,229	233,917	1,917,754	218,825
		CITP-4	67	32,783,407	3,529,836	20,829,937	3,973,718
		CITS-4	167	35,663,200	4,216,510	21,970,350	4,201,902
		CITT_N1	5	36,618,983	3,247,377	1,602,152	263,737
		CITT_N2	2	39,926,911	3,391,288	13,136,737	1,115,953
		CITT-4	34	36,271,039	3,780,630	25,448,632	5,130,967
		GDT_99	24	129,036,036	11,789,960	128,532,772	12,043,837
		GNT_05	18	370,890,304	31,073,583	87,963,698	10,271,733
		GNT_06	9	7,474,997	904,724	6,749,496	1,047,618
		GNT_07	12	76,857,459	9,098,260	76,117,608	9,411,541
		GUP_L	343	275,335,122	33,027,857	211,074,093	24,926,600
		GUS_L	1,023	458,675,643	59,927,305	320,770,145	41,811,797
		GUT_L	245	513,170,829	57,616,886	389,116,125	43,374,049
		GUT_L19	9	3,412,141	878,055	6,596,399	1,326,066
	(b)	Various_3	0	0	-1,236,008	0	0
		Sub-total	1,961	2,018,101,300	221,480,178.47	1,311,825,898	159,118,340.80
TOTAL LARGE			**102,643**	**4,795,784,285**	**631,771,997.60**	**3,250,154,552**	**454,652,267.13**
TOTAL COMMERCIAL AND INDUSTRIAL			**799,973**	**5,527,542,049**	**756,166,883.47**	**3,741,669,488**	**538,084,055.62**
STREET LIGHTS		SL_CODM	360	236,861	38,039	97,335	15,853
		SL_COM	3,584	40,114,119	3,490,964	17,265,990	1,514,954
		SL_COM_M	4,396	1,698,833	187,943	1,099,084	126,446
		SL_DOM	7,533	2,881,060	2,311,438	1,281,138	1,065,380
		SL_TSF	60	360,140	36,147	117,395	11,995
TOTAL STREET LIGHTS			**15,933**	**45,291,013**	**6,064,531.42**	**19,860,942**	**2,734,627.95**
INTERSECTION LGHT		TS	22,465	6,204,558	823,684	4,396,656	578,535
		TS_F	600	73,283	11,918	44,620	7,260
TOTAL INTERSECTION LIGHTS			**23,065**	**6,277,841**	**835,602.74**	**4,441,276**	**585,795.81**
NIGHT LIGHTS		NLGT	49,204	3,170,075	1,085,292	2,012,535	696,927
	(b)	Various_6	0	0	-16,919	0	0
TOTAL NIGHT LIGHTS	(c)		**49,204**	**3,170,075**	**1,068,373.05**	**2,012,535**	**696,926.70**

		RATE CATEGORY	YTD CUSTOMERS (a)	YEAR-TO-DATE BILLED KWH	YEAR-TO-DATE BILLED REVENUE	YEAR-TO-DATE EST. UNBILLED KWH	YEAR-TO-DATE EST. UNBILLED REVENUE
RESIDENTIAL		RF01	146,388	96,565,787	17,256,382	60,421,059	10,620,860
		RF01_E	21,418	14,226,297	1,909,915	8,518,440	1,351,993
		RF01_EL	1,297	1,000,028	117,910	597,809	91,563
		RF01_L	1,881	1,560,867	239,642	870,041	144,486
		RSCH	2,673	1,487,068	256,249	1,282,281	203,315
		RSCH_E	147	75,317	11,629	44,744	6,666
		RSCH_EL	12	11,064	1,006	5,312	737
		RSCH_L	17	8,335	1,164	9,940	1,574
		RSEH	9,275	6,171,609	1,012,337	5,067,119	787,058
		RSEH_E	1,114	690,390	85,291	514,322	74,470
		RSEH_EL	80	68,958	7,533	33,694	4,741
		RSEH_L	177	124,363	19,846	98,942	15,420
		RSMM	1,016	31,807,389	5,072,727	13,119,803	3,087,222
		RWCH	608	555,707	88,876	609,331	90,499
		RWCH_E	12	11,045	1,207	10,570	1,497
		RWCH_EL	12	5,643	747	8,173	1,164
		RWCH_L	24	18,876	2,741	20,402	3,028
		RWEH	1,205	1,333,943	207,571	1,317,992	193,731
		RWEH_E	96	107,586	12,748	99,027	13,893
		RWEH_L	24	22,327	3,345	26,978	4,006
		Sub-total	187,476	155,852,599	26,308,864.07	92,675,979	16,697,920.77
		RSGH	106,216	50,922,340	9,219,401	46,855,183	7,895,670
		RSGH_E	5,718	2,935,667	396,503	2,348,368	355,071
		RSGH_EL	350	249,828	29,237	203,061	29,733
		RSGH_L	1,648	890,455	136,475	732,510	119,090
		RWGH	1,742	1,629,828	258,422	1,736,184	269,524
		RWGH_E	60	59,429	6,435	60,473	8,159
		RWGH_L	60	80,662	10,998	89,777	13,059
	(b)	Various_8	0	0	-4,277,762	0	0
		Subtotal	115,794	56,768,209	5,779,708.96	52,025,556	8,690,307.01
		RT01	41,269	20,283,887	3,221,764	19,386,009	2,999,742
		RT01_E	1,884	1,047,337	124,098	762,132	110,402
		RT01_EL	161	113,232	11,097	72,760	10,299
		RT01_L	675	384,604	52,492	315,237	47,816
		RT02	5,439,862	3,789,009,408	639,265,659	2,339,642,266	389,855,093
		RT02_E	946,521	604,567,824	76,998,276	355,288,423	54,476,862
		RT02_EL	50,415	35,330,732	3,814,568	21,366,164	3,219,584
		RT02_L	68,873	58,253,762	8,439,810	34,822,675	5,588,310
	(d)	Subtotal	6,549,660	4,508,990,786	731,927,763.97	2,771,655,666	456,308,108.74
TOTAL RESIDENTIAL			**6,852,930**	**4,721,611,594**	**764,016,337.00**	**2,916,357,201**	**481,696,336.52**
TOTAL ALL CLASSES	(c)		**7,770,020**	**10,388,519,982**	**1,540,282,134.54**	**6,759,594,937**	**1,034,663,255.64**

(a) Customer count is defined as the number of active electric contracts per the Monthly General Ledger Balancing Report, excluding SMUD properties.

(b) Manual adjustments to billings and other adjustments.

(c) Night Light customers contracts are included in "Total All Classes" count beginning in 2016.

Note: YTD Customers represents customer bills

Table 18 – Annual Sales Data by Rate Schedule – 2022

SACRAMENTO MUNICIPAL UTILITY DISTRICT
YTD TOTAL SALES DATA BY RATE SCHEDULE
AS OF: DECEMBER 2022

		RATE	YTD	YEAR-TO-DATE BILLED		YEAR-TO-DATE EST. UNBILLED	
		CATEGORY	CUSTOMERS (a)	KWH	REVENUE	KWH	REVENUE
AGRICULTURAL		AOD	36	122,373	25,896	103,119	20,695
		AON	48	87,645	12,234	77,367	10,708
		ASD	6,349	61,171,922	8,756,632	52,935,010	7,669,668
		ASN	22,164	22,673,448	3,671,346	20,125,531	3,250,745
	(b)	Various_1	0	0	-2,255	0	0
TOTAL AGRICULTURAL			**28,597**	**84,055,388**	**12,463,852.21**	**73,241,027**	**10,951,815.77**
COMMERCIAL AND INDUSTRIAL							
SMALL		CITS-0	675,050	701,606,501	120,778,665	441,636,699	77,127,251
		GFN	5,522	283,704	99,519	102,798	57,239
		GFN_C	15,061	13,137,659	3,144,821	11,702,863	1,900,425
		GSN_C	5	8,164	1,532	9,499	1,666
		GSN_T	5,104	56,175,372	9,326,524	40,446,972	6,798,760
	(b)	Various_2	0	-8,503,000	-1,446,457	0	0
TOTAL SMALL			**700,742**	**762,708,400**	**131,904,603.85**	**493,898,831**	**85,885,340.79**
LARGE		CITP-2	823	26,155,647	4,055,553	21,295,549	3,305,234
		CITS-1	93,265	1,725,923,421	274,259,271	1,161,087,197	189,464,184
		CITS-2	4,379	437,437,528	64,903,934	305,421,489	46,464,843
		CITS-EV1	8	33,062	5,874	34,060	5,406
		CITS-EV2	16	447,157	45,278	363,119	32,762
		CITS-EV3	24	3,904,003	337,502	2,681,265	213,198
		GSS_T	865	86,969,960	13,758,030	67,798,957	10,791,992
		GUP_S	1	323,795	49,597	428,918	49,659
		GUS_S	35	9,598,948	1,211,758	6,822,034	872,975
		Sub-total	99,416	2,290,793,521	358,626,796.89	1,565,932,588	251,200,253.32
		CITP-3	152	29,095,155	3,822,956	22,638,529	3,088,898
		CITS-3	2,887	563,944,598	77,460,889	366,257,340	52,337,909
		CITT-3	67	4,610,350	968,846	3,724,206	891,589
		GUP_M	1	874,059	96,508	560,258	59,319
		GUS_M	22	8,014,812	986,458	6,262,844	778,431
		GUT_M	0	172,800	21,743	65,194	10,761
		Sub-total	3,129	606,711,774	83,357,398.23	399,508,371	57,166,906.59
		CITP_N1	12	11,363,821	1,420,296	9,974,136	1,264,961
		CITP-4	358	307,203,138	37,625,987	224,569,262	28,465,468
		CITS-4	1,117	496,547,919	67,217,033	331,479,590	46,522,173
		CITS_N1	11	55,566,188	7,007,013	63,951,268	8,880,969
		CITT_N1	12	6,466,454	1,371,430	9,683,478	1,801,016
		CITT_N2	24	422,070,086	37,543,311	119,039,835	11,313,206
		CITT-4	263	567,949,796	66,035,041	409,890,968	49,839,089
		GDT_99	24	128,165,963	12,273,531	129,001,453	12,613,398
		GNT_07	1	5,221,093	652,558	4,934,937	600,620
	(b)	GUP_L	4	7,197,968	856,274	6,603,043	759,656
		GUS_L	12	17,191,048	2,230,526	14,117,345	1,810,917
		GUT_L	6	41,535,869	4,141,623	39,238,646	3,912,147
		Sub-total	1,844	2,066,479,343	238,014,672.70	1,362,483,961	167,783,619.81
TOTAL LARGE			**104,389**	**4,963,984,638**	**679,998,867.82**	**3,327,924,920**	**476,150,779.72**
TOTAL COMMERCIAL AND INDUSTRIAL			**805,131**	**5,726,693,038**	**811,903,471.67**	**3,821,823,751**	**562,036,120.51**
STREET LIGHTS		SL_CODM	353	235,627	38,600	106,780	17,682
	(b)	SL_COM	3,496	39,246,443	3,516,586	17,641,626	1,595,002
		SL_COM_M	5,118	1,961,504	224,068	1,289,776	152,302
		SL_DOM	7,530	2,842,230	2,321,482	1,290,022	1,099,781
		SL_TSF	60	292,363	29,951	93,040	9,774
		Various_4	0	0	5	0	0
TOTAL STREET LIGHTS	(b)		**16,557**	**44,578,167**	**6,130,692.39**	**20,421,244**	**2,874,540.91**

		RATE	YTD	YEAR-TO-DATE BILLED		YEAR-TO-DATE EST. UNBILLED	
		CATEGORY	CUSTOMERS (a)	KWH	REVENUE	KWH	REVENUE
INTERSECTION LGHT		TS	22,626	6,308,973	856,839	4,415,488	596,148
		TS_F	600	74,280	12,193	43,869	7,317
TOTAL INTERSECTION LIGHTS (c)			**23,226**	**6,383,253**	**869,032.03**	**4,459,357**	**603,464.90**
NIGHT LIGHTS		NLGT	47,994	3,029,387	1,063,371	1,904,413	673,933
		Various_6	0	0	-3,981	0	0
TOTAL NIGHT LIGHTS			**47,994**	**3,029,387**	**1,059,389.85**	**1,904,413**	**673,933.13**
RESIDENTIAL		RF01	164,343	110,265,986	20,193,034	67,284,054	12,173,260
		RF01_E	24,865	17,127,965	2,386,748	10,221,388	1,762,300
		RF01_EL	1,573	1,170,562	141,940	708,454	117,002
		RF01_L	2,079	1,783,833	281,552	976,180	167,631
		RSCH	2,490	1,318,498	221,242	757,614	133,890
		RSCH_E	130	69,152	9,740	26,541	4,657
		RSCH_EL	12	10,529	280	5,876	884
		RSCH_L	47	28,469	4,509	15,390	2,612
		RSEH	8,435	5,765,490	907,684	3,392,276	567,670
		RSEH_E	1,139	745,214	89,222	400,321	64,328
		RSEH_EL	84	70,773	9,163	33,109	5,008
		RSEH_L	182	155,317	20,685	75,671	12,545
		RSMM	1,008	32,168,321	5,278,052	13,254,029	3,207,603
		RWCH	585	579,060	89,026	435,264	68,254
		RWCH_E	16	27,420	3,520	17,729	2,541
		RWCH_EL	12	6,564	799	2,933	506
		RWCH_L	27	20,520	3,517	14,687	2,309
	(b)	RWEH	1,115	1,292,993	191,036	969,765	148,746
		RWEH_E	96	121,832	12,185	88,854	13,139
		RWEH_L	24	25,450	3,420	21,615	3,353
		Sub-total	208,262	172,753,948	29,847,354.61	98,701,750	18,458,237.34
		RSG	1	0	0	0	0
		RSGH	97,534	47,379,285	8,360,149	30,097,614	5,499,849
		RSGH_E	5,711	2,954,621	408,056	1,822,782	313,092
		RSGH_EL	456	351,000	38,413	246,721	38,894
		RSGH_L	1,789	1,008,966	149,762	602,239	105,855
	(b)	RWGH	1,643	1,546,603	240,105	1,179,109	189,315
		RWGH_E	60	49,672	6,070	47,547	6,944
		RWGH_L	60	93,787	13,294	91,754	13,671
		Various_8	0	0	-1,314,331	0	0
		Subtotal	107,254	53,383,934	7,901,518.77	34,087,766	6,167,617.96
		RTC1_E	10	2,620	255	783	88
		RTC1	211	142,688	24,505	94,348	9,343
		RT01	38,640	19,587,013	2,981,994	12,550,909	2,023,247
		RT01_E	1,900	955,948	119,219	544,814	88,598
		RT01_EL	175	118,542	13,131	66,894	10,201
		RT01_L	670	412,492	53,181	238,239	37,338
	(b)	RT02	5,418,922	3,780,465,898	656,899,525	2,254,470,097	390,320,217
	(d)	RT02_E	986,190	641,643,869	85,018,197	370,162,185	62,222,052
		RT02_EL	56,865	40,314,798	4,554,133	23,898,928	3,931,075
		RT02_L	73,033	61,324,646	9,182,160	35,622,415	5,917,557
		Various_9	0	0	13,903	0	0
	(c)	Subtotal	6,576,616	4,544,968,514	758,860,204.29	2,697,649,612	464,559,715.28
TOTAL RESIDENTIAL			**6,892,132**	**4,771,106,396**	**796,609,077.67**	**2,830,439,128**	**489,185,570.58**
TOTAL ALL CLASSES			**7,813,637**	**10,635,845,629**	**1,629,035,515.82**	**6,752,288,920**	**1,066,325,445.80**

(a) Customer count is defined as the number of active electric contracts per the Monthly General Ledger Balancing Report, excluding SMUD properties.

(b) Manual adjustments to billings and other adjustments.

(c) Night Light customers contracts are included in "Total All Classes" count beginning in 2016.

Note: YTD Customers represents customer bills

Audited Financial Statements

December 31, 2022 and 2021

Financial Statements

Report of Independent Auditors

December 31, 2022 and 2021

SMUD®

SACRAMENTO MUNICIPAL UTILITY DISTRICT
TABLE OF CONTENTS
As of and for the Years Ended December 31, 2022 and 2021

SACRAMENTO MUNICIPAL UTILITY DISTRICT
TABLE OF CONTENTS - CONTINUED
As of and for the Years Ended December 31, 2022 and 2021

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Independent Auditors' Report

To the Board of Directors of
Sacramento Municipal Utility District

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of the Sacramento Municipal Utility District, as of and for the years ended December 31, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the Sacramento Municipal Utility District's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Sacramento Municipal Utility District as of December 31, 2022 and 2021, and the changes in financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States (GAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Sacramento Municipal Utility District and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matter

As discussed in Note 3, the Sacramento Municipal Utility District adopted the provisions of GASB Statement No. 87, *Leases*, effective January 1, 2022. Accordingly, the accounting changes have been retroactively applied to the prior period presented. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Sacramento Municipal Utility District's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and GAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and GAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Sacramento Municipal Utility District's internal control. Accordingly, no such opinion is expressed.

- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.

- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Sacramento Municipal Utility District's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplementary information, as listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated February 24, 2023 on our consideration of the Sacramento Municipal Utility District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Sacramento Municipal Utility District's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Sacramento Municipal Utility District's internal control over financial reporting and compliance.

Baker Tilly US, LLP

Madison, Wisconsin
February 24, 2023

Sacramento Municipal Utility District
Management's Discussion and Analysis - Unaudited
For the Years Ended December 31, 2022 and 2021

Using this Financial Report

This annual financial report for Sacramento Municipal Utility District (SMUD) consists of management's discussion and analysis and the financial statements, including notes to financial statements. The Financial Statements consist of the Statements of Net Position, the Statements of Revenue, Expenses and Changes in Net Position and the Statements of Cash Flows.

SMUD maintains its accounting records in accordance with Generally Accepted Accounting Principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB). SMUD's accounting records generally follow the Uniform System of Accounts for Public Utilities and Licensees prescribed by the Federal Energy Regulatory Commission (FERC), except as it relates to accounting for contributions of utility property in aid of construction.

Overview of the Financial Statements

The following discussion and analysis of the financial performance of SMUD provides an overview of the financial activities for the years ended December 31, 2022 and 2021. This discussion and analysis should be read in conjunction with the financial statements, required supplementary information and accompanying notes, which follow this section.

The Statements of Net Position provide information about the nature and amount of resources and obligations at a specific point in time.

The Statements of Revenues, Expenses and Changes in Net Position report all SMUD's revenues and expenses for the periods shown.

The Statements of Cash Flows report the cash provided and used by operating activities, as well as other cash sources, such as investment income and debt financing, and other cash uses such as payments for debt service and capital additions.

The Notes to Financial Statements provide additional detailed information to support the financial statements.

Required Supplementary Information provides additional detailed disclosures as required by the GASB.

Organization and Nature of Operations

SMUD was formed and operates under the State of California Municipal Utility District Act (Act). The Act gives SMUD the rights and powers to fix rates and charges for commodities or services it furnishes, and to incur indebtedness and issue bonds or other obligations. As a community-owned utility, SMUD is not subject to regulation or oversight by the California Public Utilities Commission.

SMUD is responsible for the acquisition, generation, transmission, and distribution of electric power to its service area, with a population of approximately 1.5 million – most of Sacramento County and small adjoining portions of Placer and Yolo Counties. The Board of Directors (Board) determines SMUD's rates.

SMUD's vision is to be the trusted partner with its customers and the community, providing innovative solutions to ensure energy affordability and reliability, improve the environment, reduce the region's carbon footprint, and enhance the vitality of the community. SMUD's business strategy focuses on serving its customers in a progressive, forward-looking manner, addressing current regulatory and legislative issues and potential competitive forces. This includes ensuring financial stability by establishing rates that provide acceptable cash coverage of all fixed charges, taking into consideration the impact of capital expenditures and other factors on cash flow.

2030 Zero Carbon Plan

In July 2020, the Board adopted a Climate Emergency Declaration to work toward an ambitious goal of delivering carbon neutral electricity by 2030 and indicating a strong commitment to finding additional opportunities to accelerate decarbonization in our energy supply. Building on the Board's Climate Emergency Declaration, SMUD's 2030 Clean Energy Vision calls for absolute zero carbon emission in its power supply by 2030.

In 2021, SMUD's 2030 Clean Energy Vision was translated into the 2030 Zero Carbon Plan, the flexible road map to achieve a zero-carbon power supply by 2030. The plan guides elimination of GHG emissions from SMUD's power plants, development of new distributed energy resource business models, research of emerging grid-scale carbon-free technologies, and expansion of investments in proven clean technologies while ensuring all communities benefit from the plan.

COVID-19 Global Pandemic

In 2022, SMUD continued to support its customers during the COVID-19 pandemic. At the start of the pandemic in March 2020, SMUD provided its electric customers with suspension of disconnections and stopped collections, late fee, and security deposit processes for all customers to support them during this difficult time. In February 2022, normal payment, late fees, and disconnection policies resumed with disconnections occurring in mid-April 2022. SMUD is working proactively with electric customers to create payment arrangements for those who need them. The effects of the pandemic have resulted in an increase in the number of past due customer accounts.

In 2022 and 2021, SMUD received $9.9 million and $41.4 million, respectively, in California Arrearage Payment Program (CAPP) funding that was applied to customers' bills, to support customers amid the ongoing challenges of the COVID-19 pandemic. The CAPP offers financial assistance for California energy utility customers to help reduce past due energy bill balances that increased during the COVID-19 pandemic. As of December 31, 2022 and 2021, the uncollectible reserve for account write-offs was $38 million and $69 million, respectively. Other financial and operational impacts to SMUD associated with COVID-19 are noted throughout this report.

Requests for Information

For more information about SMUD, visit our website at www.smud.org or contact us at customerservices@smud.org.

FINANCIAL POSITION

The following table summarizes the financial position as of December 31 (in millions).

CONDENSED STATEMENTS OF NET POSITION

	2022	2021 (restated)*	2020
Assets			
Electric Utility Plant - net	$ 4,001	$ 3,891	$ 3,747
Restricted and Designated Assets	183	289	188
Current Assets	1,426	1,244	1,239
Noncurrent Assets	1,581	1,492	1,515
Total Assets	7,191	6,916	6,689
Deferred Outflows of Resources	268	143	271
Total Assets and Deferred Outflows of Resources	$ 7,459	$ 7,059	$ 6,960
Liabilities			
Long-Term Debt - net	$ 2,886	$ 3,081	$ 3,259
Current Liabilities	802	494	437
Noncurrent Liabilities	428	216	694
Total Liabilities	4,116	3,791	4,390
Deferred Inflows of Resources	976	972	613
Net Position	2,367	2,296	1,957
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 7,459	$ 7,059	$ 6,960

*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2021 Statements of Net Position.

TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES

2022 Compared to 2021

Total assets in 2022 increased $275 million or 4.0% over 2021, primarily due to the following:

- An increase of $110 million in electric utility plant – net. See Capital Program below for further information.
- A $106 million decrease in restricted and designated assets primarily due to a $28 million decrease in a net pension asset and a $57 million decrease in net Other Postemployment Benefits (OPEB) asset based on the most recent actuarial results, a $30 million Rate Stabilization Fund transfer to revenue as a result of lower than budgeted energy deliveries from the Western Area Power Administration (Western), and a $25 million Hydro Rate Stabilization Fund (HRSF) transfer to revenue for below average precipitation, offset by $22 million Rate Stabilization Fund transfer from revenues for net auction proceeds received and funds spent on Assembly Bill (AB) 32 programs.
- A $182 million increase in current assets is primarily due to $115 million increase in hedging derivative instruments due to the gas hedging program and $44 million increase in wholesale and other receivables due to larger sales of power and gas sales in December.
- A $89 million increase in noncurrent assets primarily due to a $61 million increase in regulatory costs for future recovery due to recognition of those costs, a $48 million increase in hedging derivative instruments due to the gas hedging program, offset by a $30 million decrease in prepaid gas supply due to gas delivered.

Deferred outflows of resources in 2022 increased $125 million or 87.4% from 2021, primarily due to increases in the unrealized pension and OPEB gains.

2021 Compared to 2020

Total assets in 2021 increased $227 million or 3.4% over 2020, primarily due to the following:

- An increase of $144 million in electric utility plant – net. See Capital Program below for further information.
- A $101 million increase in restricted and designated assets primarily due to a $28 million increase in a net pension asset and a $57 million increase in net Other Postemployment Benefits (OPEB) asset based on the most recent actuarial results, and the $35 million deferral of 2021 operating revenues for recognition in future years to offset one-time expenditures not identified in the annual budget, offset by a $19 million Hydro Rate Stabilization Fund (HRSF) transfer to revenue for below average precipitation.
- A $23 million decrease in noncurrent assets primarily due to a $39 million decrease in regulatory costs for future recovery due to recognition of those costs, a $26 million decrease in prepaid gas supply due to gas delivered, offset by a $29 million increase in hedging derivative instruments due to the gas hedging program.

Deferred outflows of resources in 2021 decreased $128 million or 47.2% from 2020, primarily due to decreases in the unrealized pension and OPEB losses.

TOTAL LIABILITIES AND DEFERRED INFLOWS OF RESOURCES

2022 Compared to 2021

Total liabilities in 2022 increased $325 million or 8.6% over 2021, primarily due to an increase in current liabilities of $308 million due to $150 million issuance of commercial paper and $106 million increase in purchased power payable due to high purchased power prices in December. Non-current liabilities increased due to a $235 million increase in net pension liability based on the most recent actuarial results. This is offset by a decrease in long-term debt- net of $195 million.

Net position in 2022 increased $71 million or 3.1% over 2021 based on results of operations.

2021 Compared to 2020

Total liabilities in 2021 decreased $599 million or 13.6% over 2020, primarily due to a decrease in long-term debt-net of $178 million and a decrease in noncurrent liabilities of $478 million, primarily due a $470 million reduction in net pension liability based on the most recent actuarial results.

Deferred inflows of resources in 2021 increased $359 million or 58.6% from 2020, primarily due to increases in the unrealized pension and OPEB gains.

Net position in 2021 increased $339 million or 17.3% over 2020 based on results of operations.

RESULTS OF OPERATIONS

The following table summarizes the operating results for the years ended December 31 (in millions).

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	2022	2021 (restated)*	2020
Operating revenues	$ 2,147	$ 1,790	$ 1,588
Operating expenses	(2,065)	(1,450)	(1,389)
Operating income	82	340	199
Other revenues/(expenses)	90	108	63
Interest charges	(101)	(109)	(109)
Change in net position	71	339	153
Net position - beginning of year	2,296	1,957	1,804
Net position - end of year	$ 2,367	$ 2,296	$ 1,957

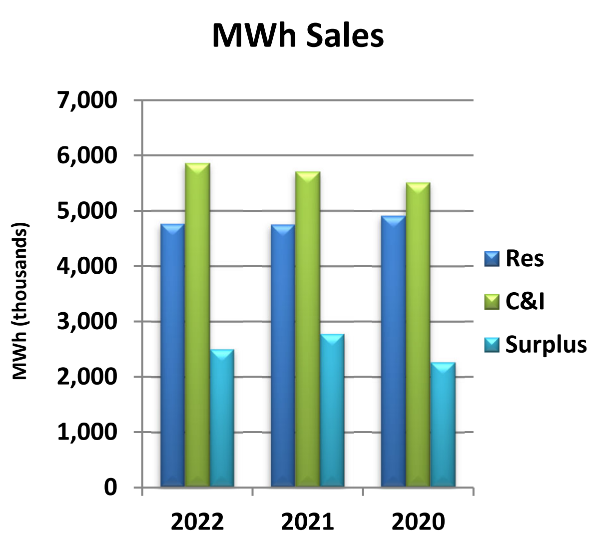
*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2021 Statements of Net Position.

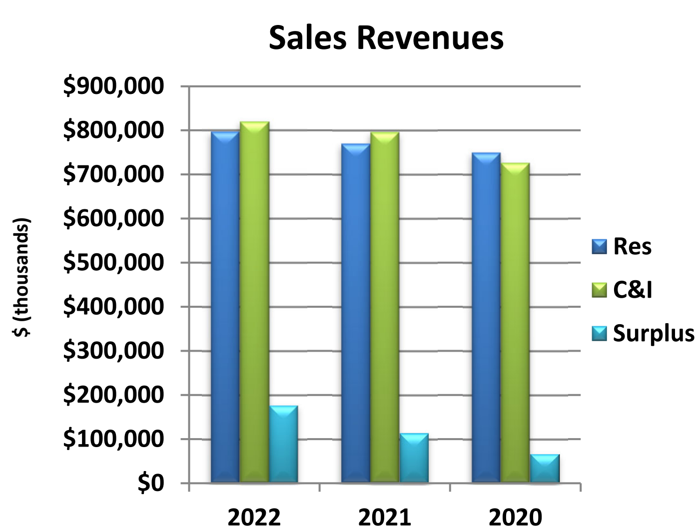
2022 Compared to 2021

OPERATING REVENUES

Total operating revenues were $2,147 million for 2022, an increase of $357 million or 19.9 percent over 2021 operating revenues. The residential MWh sales increased 0.3 percent and sales revenues increased 3.6 percent compared to 2021, although usage is flat, the increase is related to the shift in the customer load shape. The commercial & industrial MWh sales increased 2.7 percent and sales revenues increased 2.9 percent compared to 2021, primarily due to more commercial businesses and schools returning to in-person 2022.

The following charts show the megawatt hour (MWh) sales, and sales revenue for the past three years by surplus energy sales (Surplus), commercial, industrial, and other (C&I), and residential (Res) customers:





Wholesale revenues are comprised of both surplus gas and energy sales which are part of the operational strategy in managing fuel and energy costs. In 2022, energy sales were higher by $62 million as compared to 2021 due to higher energy prices and energy sales. Surplus gas sales were higher than 2021 by $96 million primarily due the unplanned outage of CPP and selling at higher gas prices in 2022.

OPERATING EXPENSES

Total operating expenses were $2,066 million for 2022, an increase of $615 million or 42.4 percent over 2021.

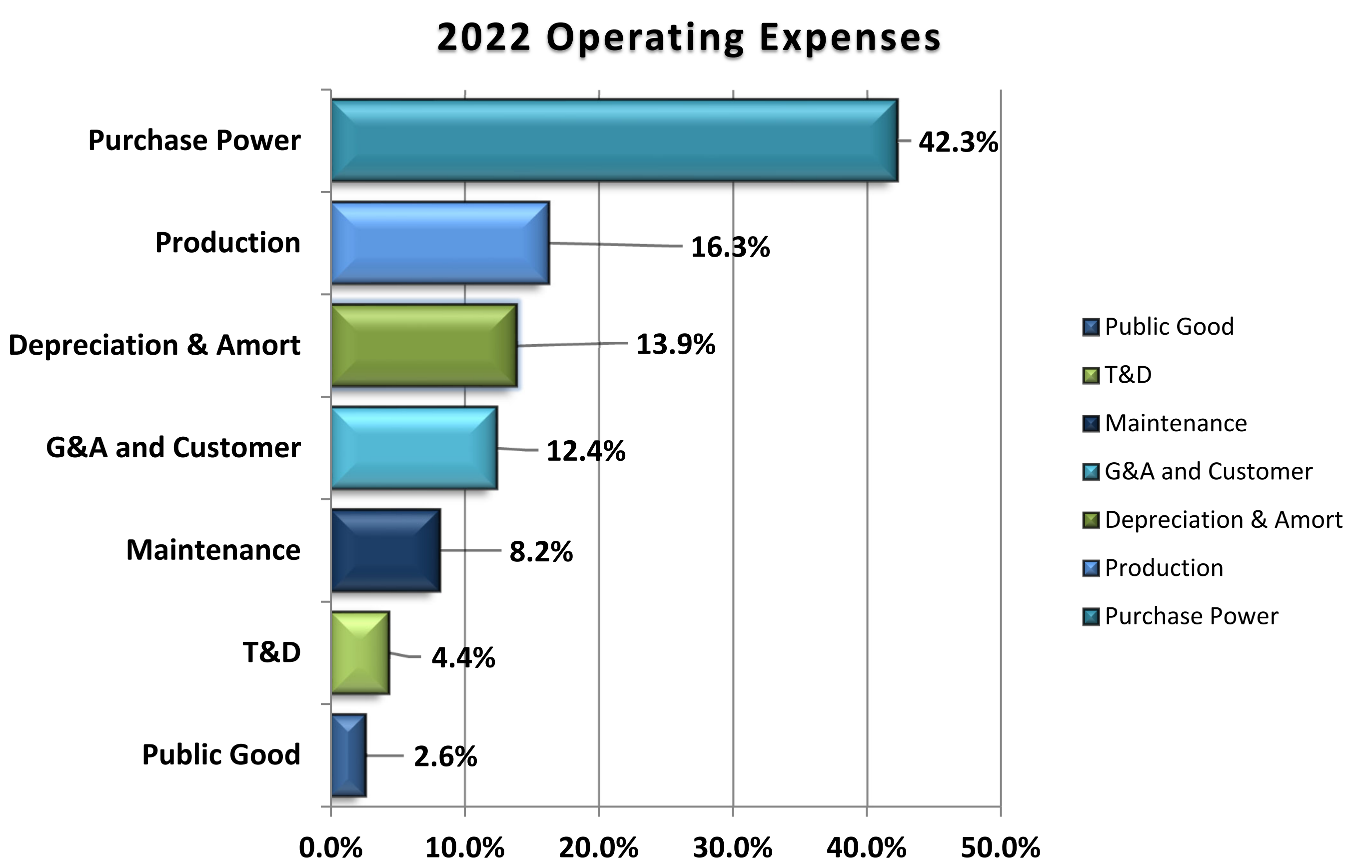
- Purchased power increased by $478 million or 120.8 percent primarily due to the unplanned outage of Cosumnes Power Plant (CPP), increased load, reduced hydro, and record high heat wave in September that led to increase procurement of power.

- Production expense decreased by $21 million or 6.0 percent primarily due to unplanned CPP outage for majority of the year.

- General, administrative and customer increased by $102 million or 66.6 percent primarily due to SMUD establishing regulatory accounting in 2022 for pension and OPEB regulatory costs and/or credits to defer recognition of certain expenses related to the amortization of pension and OPEB deferred outflows and deferred inflows of resources compared to 2021 there were large credit adjustments related to pension and OPEB based on the most recent actuarial results.

- Maintenance increased by $32 million or 23.1 percent primarily due to increased costs related to tree trimming and JPA thermal plant maintenance.

The following chart illustrates 2022 operating expenses by expense classification and percentage of the total:



OTHER REVENUES

Total other revenues (net) were $90 million for 2022, a decrease of $18 million or 16.7 percent over 2021. The decrease is due to receiving $41 million in grant revenues from CAPP funding in 2021, offset by the increase in investment revenue related to gas swaps.

2021 Compared to 2020

RESULTS OF OPERATIONS

- Total operating revenues were $1,790 million for 2021, an increase of $202 million or 12.7 percent over 2020 operating revenues. The residential MWh sales decreased 3.2 percent and sales revenues increased 2.7 percent compared to 2020, primarily due to employees returning to work and children returning to school which reduced usage and shifted the customer load shape. The commercial & industrial MWh sales increased 3.5 percent and sales revenues increased 9.6 percent compared to 2020, primarily due to commercial businesses and schools re-opening in 2021 compared to the California mandated shut down and limited re-openings of commercial businesses in 2020.

- In 2021, energy sales were higher by $47 million as compared to 2020 due to higher energy prices and energy sales. Surplus gas sales were higher than 2020 by $65 million primarily due to higher gas prices in 2021.

- Total operating expenses were $1,450 million for 2021, an increase of $61 million or 4.4 percent over 2020.
    - Purchased power increased by $48 million or 13.7 percent due to higher load due to warmer than anticipated weather and lower hydro generation due to lower precipitation levels.
    - Production expense increased by $80 million or 28.7 percent due to lower hydro generation due to lower precipitation levels led to increased thermal plant generation.
    - General, administrative and customer decreased by $88 million or 36.3 percent due to lower costs related to reduced customer call volumes due to COVID and the continued moratorium on electric shut offs, reduction in customer programs due to COVID and reduction in administrative and labor costs related to employees working remotely. In addition, large adjustments related to GASB 75 OPEB and GASB 68 Pension based on the most recent actuarial results.
    - Public Good decreased by $11 million or 18.7 percent due to lower expenditure for research and development programs and energy efficiency program incentives.

- Total other revenues (net) were $108 million for 2021, an increase of $45 million or 71.3 percent over 2020. In 2021, SMUD recorded $41 million as grant revenues from CAPP funding received for delinquent customer balances and a $15 million settlement related to Rancho Seco.

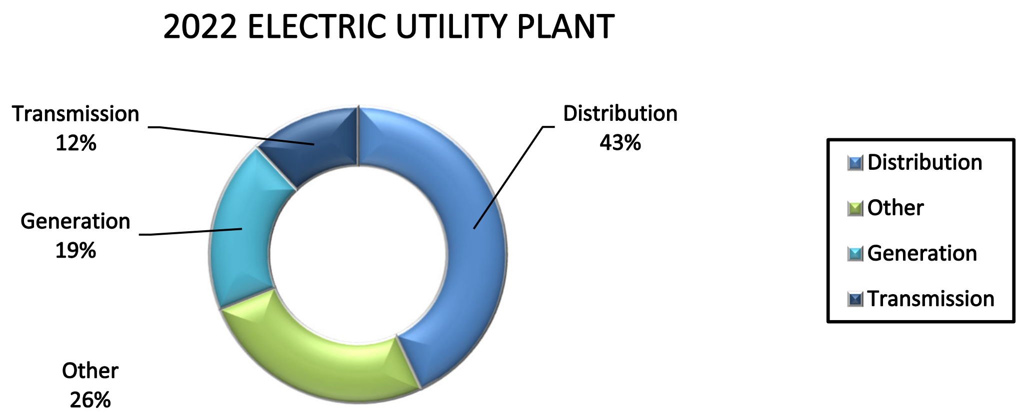
CAPITAL PROGRAM

SMUD's electric utility plant includes production, transmission and distribution, and general plant facilities. The following table summarizes the balance of the electric utility plant as of December 31 (in millions).

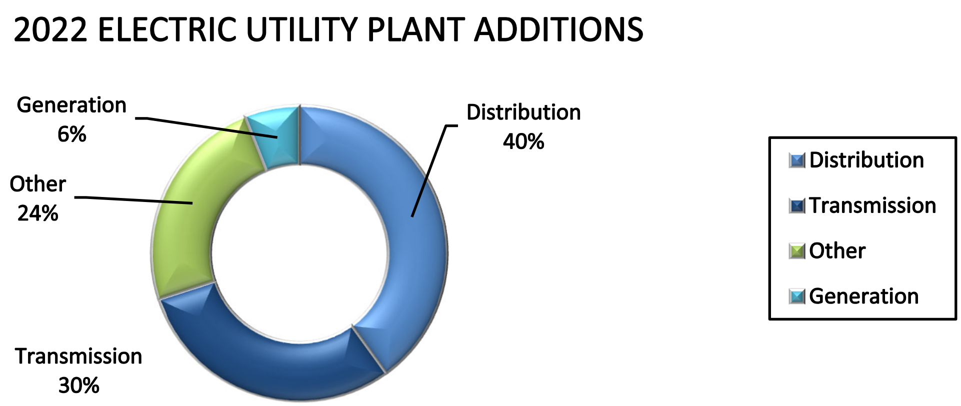
	2022	2021(restated)*	2020
Electric Utility Plant	$ 7,549	$ 7,232	$ 6,886
Accumulated Depreciation and Amortization	(3,548)	(3,341)	(3,139)
Electric Utility Plant - Net	$ 4,001	$ 3,891	$ 3,747

*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2021 Statements of Net Position.

The following chart shows the breakdown of 2022 Electric Utility Plant - net by major plant category:



The following chart shows the breakdown of 2022 Electric Utility Plant capitalized additions by major plant category:



Details of SMUD's electric utility plant asset balances and activity are included in Note 4 in the Notes to Financial Statements. SMUD's capital program includes investment in generation, transmission, distribution, buildings, vehicles, technology, and other assets critical to meeting the energy needs of our customers. Capital investments are financed with revenues from operations, bond proceeds, investment income and cash on hand.

The following table shows actual capital program expenditures for the last two years and budgeted capital expenditures for 2022 (in millions).

	Budget 2023	Actual 2022	Actual 2021
Capital Program:			
Transmission & Distribution	$ 180	$ 154	$ 183
Generation	336	124	52
Other	108	70	49
Total	$ 624	$ 348	$ 284

In 2022 and 2021, SMUD actual expenditures included work for Substation E & G, Advanced Distribution Management System, White Rock Tunnel Bolt Replacement, the purchase and operationalization of Chili Bar Hydroelectric facility, Substation J land purchase, distribution line work and continued work on UARP relicensing projects.

Major capital expenditures planned in 2023 include completing work for Station G, additions to our wind farm with Solano Phase IV, the Country Acres solar project, and ongoing improvements in our Upper American River Project (UARP) area as part of our hydro relicensing. Programmatic capital planned in 2023 includes cable and pole replacement programs, installing new meters, and new fleet purchases. Technology investments included in the 2023 Budget are to complete the Advanced Distribution Management System & Outage Management System (ADMS-OMS) and improvements to HR systems and network communications systems with our Talent Technology Transformation (T3) project.

LIQUIDITY AND CAPITAL RESOURCES

SMUD maintains a strong liquidity position by setting a minimum number of days cash on hand and managing a $400 million commercial paper program. Our current days cash threshold is 150 days, the minimum amount of cash on hand before triggering a new debt or commercial paper issuance to replenish cash balances. On December 31, 2022, the days cash on hand was 214 days. The commercial paper program allows for short-term borrowing when needed in lieu of issuing long-term debt, similar to a credit card or line of credit. On December 31, 2022, SMUD had $150 million of commercial paper notes outstanding. A strong liquidity position is important in demonstrating to investors and rating agencies that SMUD can withstand various financial stresses.

In addition, SMUD targets strong financial metrics in cash flow coverage with its fixed charge ratio. The Board sets a minimum fixed charge of 1.50 times operating cash flow; however, we aim for a minimum of 1.70 as a standard. On December 31, 2022, the fixed charge ratio was 1.65 which decreased below our standard but above our Board set minimum due to the higher commodity costs incurred from the CPP unplanned outage, record heat wave in September and higher commodity prices.

FINANCING ACTIVITIES

In June 2022, SMUD issued $132.7 million of 2022 Series J Revenue Refunding Bonds. The purpose of this transaction was to refund the fixed rate debt associated with 2012 Series Y bonds and terminated the associated interest rate swap entered into in 2019. This locked in the refunding's interest rates, generating $28.6 million in Net Present Value savings, or annual cash flow savings of $3.1 million through 2033.

DEBT SERVICE COVERAGE

Debt service coverage for long-term debt was 1.87 times and 2.50 times in 2022 and 2021, respectively. SMUD's bond resolutions contain various covenants that include requirements to maintain minimum debt service coverage ratios of at least 1.40 times, certain other financial ratios, stipulated minimum funding of revenue bond reserves, and various other requirements including a rate covenant to raise rates to maintain minimum debt service coverage. SMUD is in compliance with all debt covenants.

CREDIT RATINGS

We proactively manage our strong financial position to maintain high credit ratings. These strong credit ratings improve access to credit markets and result in a lower cost of borrowing. Both quantitative (financial strength) and qualitative (business and operating characteristics) factors are considered by the credit rating agencies in establishing a company's credit rating. As of December 31, 2022, SMUD's bonds had an underlying rating of "AA" from Standard & Poor's, "AA" from Fitch, and "Aa3" from Moody's. Some of SMUD's bonds are insured and are rated by the rating agencies at the higher of the insurer's rating or SMUD's underlying rating.

COMPETITIVE RATES

The Board has independent authority to set SMUD's rates and charges. Changes in rates require a public hearing and formal action by the Board. SMUD has committed to our customers in keeping rates low while continuing to deliver safe, reliable, and environmentally responsible power and the products and services they value.

In June 2019, the Board approved the 2020 and 2021 rate proposals including a 2.50 percent rate increase effective January 1, 2021, and a 2.0 percent rate increase effective October 1, 2021, for all customer classes. In October 2021, SMUD started transitioning commercial customers to the new restructured rates. While the restructure is revenue neutral, it will improve SMUD's revenue stability and better align electric charges with costs.

In 2021, the Board approved the Solar and Storage Rate (SSR), which will reduce the cost shift from Net Energy Metering (NEM) and will incentivize customers to invest in solar paired with storage, providing greater benefits to SMUD and our customers. In 2021, the Board approved the 2022 and 2023 rate proposals including rate increases of 1.5% in 2022 and 2% in 2023, which is well below the estimated rate of inflation. This ensures the necessary revenue to meet SMUD's financial obligations, key financial metrics, and delivery of our 2030 Zero Carbon Plan.

Progress on several key rates and programs, including the Virtual Solar (VS) program and our optional residential Critical Peak Pricing (CPP) rate, both of which will be available in June 2022. The VS program will provide the benefits of solar to our under-resourced customers living in multi-family housing, and our residential CPP rate will provide customers the opportunity to reduce their bills and help the environment while contributing to the 2030 Zero Carbon Plan.

Even with these increases, SMUD's rates continue to remain amongst the lowest in the state. In 2022, the average system rate was 45 percent below the average rate of the nearest investor-owned utility.

ENERGY RISK MANAGEMENT

SMUD's commodity costs have prices locked in for most of our expected energy requirements to ensure cost and rate stability for customers. Only a small portion of budgeted energy purchases are exposed to short-term market price fluctuations – a beneficial practice, especially during the price volatility currently reflected in California power and energy prices.

SMUD has mitigation measures in place for higher commodity costs due to reduced hydroelectric production that will lead to higher purchased power. In April 2022, $25.1 million was transferred from the HRSF to revenue as a result of low precipitation. At December 31, 2022, the HRSF was $31.0 million and $56.6 million in the Rate Stabilization Fund (RSF), net of Low Carbon Fuel Standard and Cap and Trade funds. These reserve funds help absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.

RESOURCE PLANNING AND GENERATION UPDATE

In March 2021, the Board adopted the 2030 Zero Carbon Plan, a flexible road map to achieving its zero carbon goal while ensuring all customers and communities that are served share in the benefits of decarbonization. While SMUD has always had an Integrated Resource Plan target to meet or exceed goals established by the State for renewable energy and the reduction of carbon emissions, the 2030 Zero Carbon Plan greatly accelerates these efforts, working toward eliminating carbon emissions from SMUD's power supply by 2030.

The Board formally approved the 2022 Integrated Resource Plan (IRP) update in June 2022 and filed this update with the California Energy Commission (CEC) in September. Implementation of the plan has SMUD embarking on new pathways to completely decarbonize energy supply, including eliminating GHG emissions from the thermal power plants, developing new distributed energy resource business models, researching emerging grid-scale and carbon-free technologies and expanding investments in proven clean technologies.

DECOMMISSIONING

SMUD has made significant progress toward completing the Decommissioning Plan for its Rancho Seco nuclear facility, which was shut down in 1989. The plan consists of two phases that allow SMUD to terminate its possession-only license. Phase I of the decommissioning was completed at the end of 2008. Phase II consists of a storage period for the Class B and Class C radioactive waste overseen by the existing facility staff, followed by shipment of the waste for disposal, and then complete termination of the possession-only license. SMUD also established and funded an external decommissioning trust fund as part of its assurance to the Nuclear Regulatory Commission (NRC) to pay for the cost of decommissioning. Shipment of the previously stored Class B and Class C radioactive waste was completed in November 2014 to a low-level radioactive waste facility located in Andrews, Texas. The remaining Phase II decommissioning activities required for termination of the possession-only license commenced in 2015. In September 2017, SMUD formally requested the termination of the possession-only license and termination of the possession-only license was completed in 2018.

As part of the Decommissioning Plan, the nuclear fuel and Greater Than Class C (GTCC) radioactive waste is being stored in a dry storage facility constructed by SMUD and licensed separately by the NRC. The U.S. Department of Energy (DOE), under the Nuclear Waste Policy Act of 1982, was responsible for permanent disposal of used nuclear fuel and GTCC radioactive waste and SMUD contracted with the DOE for removal and disposal of that waste. The DOE has yet to fulfill its contractual obligation to provide a permanent waste disposal site. SMUD has filed a series of successful lawsuits against the federal government for recovery of the past spent fuel costs, with recoveries to date in excess of $123.1 million. SMUD will continue to pursue cost recovery claims until the DOE fulfills its obligation.

The total Accrued Decommissioning balance in the Statements of Net Position, including Rancho Seco and other ARO's, amounted to $95.9 million as of December 31, 2022.

SIGNIFICANT ACCOUNTING POLICIES

In accordance with GASB No. 62, the Board has taken regulatory actions for ratemaking that result in the deferral of expense and revenue recognition. These actions result in regulatory assets and liabilities. SMUD has regulatory assets that cover costs related to decommissioning, derivative financial instruments, debt issuance costs, pension costs, and OPEB costs. As of December 31, 2022, total regulatory assets were $813.6 million. SMUD also has regulatory credits that cover costs related to contributions in aid of construction, the RSF and HRSF, EAPR reserves, SB-1, grant revenues, and Transmission Agency of Northern California operations costs. As of December 31, 2022, total regulatory credits were $620.4 million.

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SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2022	December 31, 2021 (restated)
	(thousands of dollars)	
ASSETS		
ELECTRIC UTILITY PLANT		
Plant in service	$ 7,201,276	$ 6,864,040
Less accumulated depreciation and amortization	(3,547,995)	(3,340,797)
Plant in service - net	3,653,281	3,523,243
Construction work in progress	347,758	367,297
Total electric utility plant - net	4,001,039	3,890,540
RESTRICTED AND DESIGNATED ASSETS		
Revenue bond and debt service reserves	119,385	120,024
Nuclear decommissioning trust fund	8,980	8,874
Rate stabilization fund	156,016	188,992
Net pension asset	-0-	27,738
Net other postemployment benefits asset	-0-	57,532
Other funds	30,424	22,411
Less current portion	(131,852)	(136,663)
Total restricted and designated assets	182,953	288,908
CURRENT ASSETS		
Unrestricted cash and cash equivalents	268,653	584,998
Unrestricted investments	359,211	45,378
Restricted and designated cash and cash equivalents	30,583	46,828
Restricted and designated investments	101,269	89,835
Receivables - net:		
Retail customers	181,606	190,987
Wholesale and other	102,305	58,628
Regulatory costs to be recovered within one year	49,312	38,303
Investment derivative instruments maturing within one year	5,870	1,354
Hedging derivative instruments maturing within one year	151,349	36,620
Inventories	113,120	99,941
Prepaid gas to be delivered within one year	29,452	26,059
Prepayments and other	32,881	25,330
Total current assets	1,425,611	1,244,261
NONCURRENT ASSETS		
Regulatory costs for future recovery	764,246	703,748
Prepaid gas	637,000	666,452
Prepaid power and capacity	173	380
Investment derivative instruments	329	803
Hedging derivative instruments	85,675	37,753
Energy efficiency loans - net	732	1,298
Credit support collateral deposits	11,650	11,650
Due from affiliated entity	31,149	29,674
Prepayments and other	50,506	40,738
Total noncurrent assets	1,581,460	1,492,496
TOTAL ASSETS	7,191,063	6,916,205
DEFERRED OUTFLOWS OF RESOURCES		
Accumulated decrease in fair value of hedging derivative instruments	28,438	22,600
Deferred pension outflows	175,478	81,334
Deferred other postemployment benefits outflows	53,674	25,113
Deferred asset retirement obligations outflows	2,066	1,775
Unamortized bond losses	8,389	12,261
TOTAL DEFERRED OUTFLOWS OF RESOURCES	268,045	143,083
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	$ 7,459,108	$ 7,059,288

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2022	December 31, 2021 (restated)
	(thousands of dollars)	
LIABILITIES		
LONG-TERM DEBT - net	$ 2,885,844	$ 3,081,707
CURRENT LIABILITIES		
Commercial paper notes	150,000	-0-
Accounts payable	159,463	121,925
Purchased power payable	135,570	30,103
Credit support collateral obligation	534	3,575
Long-term debt due within one year	138,195	132,150
Accrued decommissioning	7,549	6,889
Interest payable	49,784	50,739
Accrued salaries and compensated absences	60,209	60,433
Investment derivative instruments maturing within one year	3,103	2,757
Hedging derivative instruments maturing within one year	21,636	18,232
Customer deposits and other	75,911	67,064
Total current liabilities	801,954	493,867
NONCURRENT LIABILITIES		
Net pension liability	235,451	-0-
Net other postemployment benefits liability	6,753	-0-
Accrued decommissioning	88,385	88,168
Investment derivative instruments	1,424	4,786
Hedging derivative instruments	6,802	4,368
Self insurance and other	89,910	118,146
Total noncurrent liabilities	428,725	215,468
TOTAL LIABILITIES	4,116,523	3,791,042
DEFERRED INFLOWS OF RESOURCES		
Accumulated increase in fair value of hedging derivative instruments	237,025	74,374
Regulatory credits	620,373	543,014
Deferred pension inflows	26,656	229,707
Deferred other postemployment benefits inflows	49,838	94,902
Deferred lease inflows	18,187	17,373
Unamortized bond gains	20,473	9,246
Unearned revenue	3,230	3,369
TOTAL DEFERRED INFLOWS OF RESOURCES	975,782	971,985
NET POSITION		
Net investment in capital assets	1,491,548	1,349,688
Restricted:		
Revenue bond and debt service	60,048	64,793
Net pension asset	-0-	27,738
Net other postemployment benefits asset	-0-	57,532
Other funds	29,890	18,836
Unrestricted	785,317	777,674
TOTAL NET POSITION	2,366,803	2,296,261
COMMITMENTS, CLAIMS AND CONTINGENCIES (Notes 17 and 18)		
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION	$ 7,459,108	$ 7,059,288

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Year Ended December 31, 2022	Year Ended December 31, 2021 (restated)
	(thousands of dollars)	
OPERATING REVENUES		
Residential	$ 808,906	$ 721,228
Commercial and industrial	814,584	773,311
Street lighting and other	52,122	41,739
Wholesale	406,171	248,001
Senate Bill - 1 revenue deferral	40	784
AB-32 revenue	22,760	17,880
LCFS revenue	9,775	7,599
Rate stabilization fund transfers	32,976	(20,266)
Total operating revenues	2,147,334	1,790,276
OPERATING EXPENSES		
Operations:		
Purchased power	873,436	395,572
Production	336,406	357,832
Transmission and distribution	90,242	81,484
Administrative, general and customer	256,288	153,799
Public good	54,170	46,519
Maintenance	168,500	136,849
Depreciation and amortization	249,922	242,917
Regulatory amounts collected in rates	36,688	35,369
Total operating expenses	2,065,652	1,450,341
OPERATING INCOME	81,682	339,935
NON-OPERATING REVENUES AND EXPENSES		
Other revenues and (expenses):		
Interest income	14,265	6,777
Investment income - net	27,702	8,035
Other income - net	48,077	93,302
Total other revenues and (expenses)	90,044	108,114
Interest charges:		
Interest on debt	101,184	109,300
Total interest charges	101,184	109,300
Total non-operating revenues and (expenses)	(11,140)	(1,186)
CHANGE IN NET POSITION	70,542	338,749
NET POSITION - BEGINNING OF YEAR	2,296,261	1,957,512
NET POSITION - END OF YEAR	$ 2,366,803	$ 2,296,261

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF CASH FLOWS

	Year Ended December 31, 2022	2021 (restated)
	(thousands of dollars)	
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 1,673,495	$ 1,498,124
Receipts from surplus power and gas sales	369,878	242,767
Other receipts	216,564	35,173
Payments to employees - payroll and other	(379,423)	(417,475)
Payments for wholesale power and gas purchases	(1,021,810)	(599,268)
Payments to vendors/others	(458,111)	(320,201)
Net cash provided by operating activities	400,593	439,120
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Repayment of debt	(20,550)	(18,450)
Receipts from federal and state grants	1,647	41,601
Proceeds from insurance settlements	-0-	3,135
Interest on debt	(28,568)	(29,385)
Net cash used in noncapital financing activities	(47,471)	(3,099)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Construction expenditures	(336,576)	(297,179)
Contributions in aid of construction	21,602	24,414
Net proceeds from bond issues	150,711	130,248
Repayments and refundings of debt	(269,385)	(235,970)
Issuance of commercial paper	150,000	-0-
Other receipts	16,413	9,253
Interest on debt	(120,222)	(120,874)
Lease and other payments	(26,407)	(23,185)
Cash received from leases	1,000	858
Net cash used in capital and related financing activities	(412,864)	(512,435)
CASH FLOWS FROM INVESTING ACTIVITIES		
Sales and maturities of securities	436,129	215,153
Purchases of securities	(812,821)	(106,889)
Proceeds from termination of prepaid gas contracts	-0-	2,000
Interest and dividends received	10,005	8,151
Investment revenue/expenses - net	27,619	8,036
Net cash provided by investing activities	(339,068)	126,451
Net increase in cash and cash equivalents	(398,810)	50,037
Cash and cash equivalents at the beginning of the year	788,648	738,611
Cash and cash equivalents at the end of the year	$ 389,838	$ 788,648
Cash and cash equivalents included in:		
Unrestricted cash and cash equivalents	$ 268,653	$ 584,998
Restricted and designated cash and cash equivalents	30,583	46,828
Restricted and designated assets (a component of the total of $182,953 and $288,908 at December 31, 2022 and 2021, respectively)	90,602	156,822
Cash and cash equivalents at the end of the year	$ 389,838	$ 788,648

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
SUPPLEMENTAL CASH FLOW INFORMATION

A reconciliation of the statements of cash flows operating activities to operating income as follows:

	Year Ended December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
Operating income	$ 81,682	$ 339,935
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	249,922	242,917
Regulatory amortization	36,688	35,369
Other Amortizations	22,909	20,278
Revenue deferred to (recognized from) regulatory credits - net	(33,016)	19,483
Other (receipts) payments - net	19,777	13,283
Changes in operating assets, deferred outflows, liabilities and deferred inflows:		
Receivables - retail customers, wholesale and other	(25,719)	(15,543)
Inventories, prepayments and other	(29,479)	(27,140)
Net pension and other postemployment benefits assets	85,270	(84,499)
Deferred outflows of recources	(122,706)	96,029
Payables and accruals	127,299	22,693
Decommissioning	(6,049)	(5,358)
Net pension liability	235,451	(469,820)
Net other postemployment benefits liability	6,753	-0-
Deferred inflows of resources	(248,189)	251,493
Net cash provided by operating activities	$ 400,593	$ 439,120

The supplemental disclosure of noncash financing and investing activities is as follows:

	Year Ended December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
Amortization of debt related (expenses) and premiums - net	$ 34,145	$ 34,969
Write-off unamortized premium and loss	7,576	4,465
(Loss) Gain on debt extinguishment and refundings	6,677	3,925
Unrealized holding gain (loss)	(5,890)	(2,201)
Change in valuation of derivative financial instruments	163,871	93,719
Amortization of revenue for assets contributed in aid of construction	19,226	18,208
Construction expenditures included in accounts payable	55,787	43,470
(Loss) Gain on sale and retirement of assets - net	(2,036)	(439)
Write-off capital projects and preliminary surveys	(3,720)	(2,057)

The accompanying notes are an integral part of these financial statements.

Sacramento Municipal Utility District
Notes to Financial Statements
As of and for the Years Ended December 31, 2022 and 2021

NOTE 1. ORGANIZATION

The Sacramento Municipal Utility District (SMUD) was formed and operates under the State of California Municipal Utility District Act (Act). The Act gives SMUD the rights and powers to fix rates and charges for commodities or services it furnishes, and to incur indebtedness and issue bonds or other obligations. As a community-owned utility, SMUD is not subject to regulation or oversight by the California Public Utilities Commission.

SMUD is responsible for the acquisition, generation, transmission, and distribution of electric power to its service area, which includes most of Sacramento County and small adjoining portions of Placer and Yolo Counties. The Board of Directors (Board) determines SMUD's rates.

SMUD is exempt from payment of federal and state income taxes and, under most circumstances, real and personal property taxes. SMUD is not exempt from real and personal property taxes on assets it holds outside of its service territory. In addition, SMUD is responsible for the payment of a portion of the property taxes associated with its real property in California that lies outside of its service area.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Method of Accounting. SMUD's accounting records are maintained in accordance with Generally Accepted Accounting Principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB). SMUD's accounting records generally follow the Uniform System of Accounts for Public Utilities and Licensees prescribed by the Federal Energy Regulatory Commission (FERC), except as it relates to the accounting for contributions of utility property in aid of construction. SMUD's Financial Statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows. Electric revenues and costs that are directly related to the acquisition, generation, transmission, and distribution of electricity are reported as operating revenues and expenses. All other revenues and expenses are reported as non-operating revenues and expenses.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (U.S.) requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources and disclosures of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

The Financial Reporting Entity. These Financial Statements include SMUD and its component units. Although the component units are legally separate from SMUD, they are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD. All significant inter-component transactions have been eliminated in consolidation.

Component Units. The component units include the Central Valley Financing Authority (CVFA), the Sacramento Cogeneration Authority (SCA), the Sacramento Municipal Utility District Financing Authority (SFA), the Sacramento Power Authority (SPA), the Northern California Gas Authority No. 1 (NCGA), and the Northern California Energy Authority (NCEA). The primary purpose of CVFA, SCA, SFA and SPA is to own and operate electric utility plants that supply power to SMUD. On October 26, 2021, SFA entered into Assignment and Assumption Agreements (the Agreements) with CVFA, SCA, and SPA. The Agreements transfer the assets and obligations, including ownership of the Carson Power Plant, Procter and Gamble Power Plant, Campbell Power Plant, and McClellan Power Plant (assigned Power Plants) to SFA as of

November 1, 2021. The primary purpose of NCGA is to prepay for natural gas to sell to SMUD. The primary purpose of NCEA is to prepay for commodities in the form of natural gas and electricity to sell to SMUD. SMUD's Board comprises the Commissions that govern these entities (see Note 6).

Plant in Service. Capital assets are generally defined by SMUD as tangible assets with an initial, individual cost of more than five thousand dollars and an estimated useful life in excess of two years. The cost of additions to Plant in Service and replacement property units is capitalized. Repair and maintenance costs are charged to expense when incurred. When SMUD retires portions of its Electric Utility Plant, retirements are recorded against Accumulated Depreciation and the retired portion of Electric Utility Plant is removed from Plant in Service. The costs of removal and the related salvage value, if any, are charged or credited as appropriate to Accumulated Depreciation. SMUD generally computes depreciation on Plant in Service on a straight-line, service-life basis. The average annual composite depreciation rates for 2022 and 2021 was 3.2 percent and 3.3 percent, respectively. Depreciation is calculated using the following estimated lives:

Generation	8 to 80 years
Transmission and Distribution	7 to 50 years
Gas Pipeline	10 to 90 years
General	3 to 60 years

Investment in Joint Powers Authority (JPA). SMUD's investment in the Transmission Agency of Northern California (TANC) is accounted for under the equity method of accounting and is reported as a component of Plant in Service. SMUD's share of the TANC debt service costs and operations and maintenance expense, inclusive of depreciation, is included in Transmission and Distribution expense in the Statements of Revenues, Expenses and Changes in Net Position (see Note 5).

SMUD's investment in the Balancing Authority of Northern California (BANC) is accounted for under the equity method of accounting. SMUD's share of the BANC operations and maintenance expense is included in Transmission and Distribution expense in the Statements of Revenues, Expenses and Changes in Net Position (see Note 5).

Leases. SMUD implemented Statement of Governmental Accounting Standards (SGAS) No. 87, ***"Leases"*** in 2022 (see Note 3). Leases are contracts that convey control of the right to use another entity's nonfinancial asset as specified for a period of time in an exchange or exchange-like transaction without the transfer of ownership of the asset. The lease term is the period of time where there is a noncancellable right to use the underlying asset (see Note 4).

For lessor contracts, lease receivables and deferred inflows of resources are reported at present value using SMUD's incremental borrowing rate on the Statements of Net Position. The amortization of the discount for lessor contracts is recorded as Lease receivable for SMUD on the Statements of Net Position with the offset to interest income in Interest and other income on the Statements of Revenue, Expenses and Change in Net Position (see Note 4).

For lessee contracts, lease assets and liabilities are reported at present value using SMUD's incremental borrowing rate on the Statements of Net Position. The lease assets are amortized over the shorter of the lease term or the useful life of the underlying asset. The amortization of the discount for lessee contracts is recorded as Interest payable on the Statement of Net Position with the offset to Lease interest expense for SMUD on the Statement of Revenue, Expenses and Change in Net Position (see Note 4).

Restricted and Designated Assets. Cash, cash equivalents, and investments, which are restricted by regulation or under terms of certain agreements for payments to third parties are included as restricted assets. Restricted assets include Revenue bond and debt service reserves, Nuclear decommissioning trust fund, and Other funds. Board actions limiting the use of such funds are included as designated assets. Designated assets include the Rate stabilization fund and $0.6 million of Other funds as of December 31, 2022 and 2021. When SMUD restricts or designates funds for a specific purpose, and restricted and designated and unrestricted resources are available for use, it is SMUD's policy to use restricted and designated resources first, then unrestricted resources as they are needed.

Restricted Bond Funds. SMUD's Indenture Agreements (Indenture) requires the maintenance of minimum levels of reserves for debt service on the 1997 Series K Bonds.

Nuclear Decommissioning Trust Fund. SMUD made annual contributions to its Nuclear Decommissioning Trust Fund (Trust Fund) through 2008 to cover the cost of its primary decommissioning activities associated with the Rancho Seco facility. Primary decommissioning excludes activities associated with the spent fuel storage facility after 2008 and most non-radiological decommissioning tasks. Interest earnings on the Trust Fund assets are recorded as Interest Income and are accumulated in the Trust Fund.

Asset Retirement Obligations (ARO). SMUD records asset retirement obligations (ARO) for tangible capital assets when an obligation to decommission facilities is legally required. SMUD recognizes AROs for its Rancho Seco nuclear power plant and for the CVFA power plant facility (see Note 13). The Rancho Seco ARO is recorded as Accrued Decommissioning and the unfunded portion of the ARO is recorded as current and noncurrent Regulatory Costs for Future Recovery (see Note 8) in the Statements of Net Position. Other AROs are recorded as Accrued Decommissioning and a corresponding Deferred Asset Retirement Obligation Outflows in the Statements of Net Position.

SMUD has identified potential retirement obligations related to certain generation, distribution and transmission facilities. SMUD's non-perpetual leased land rights generally are renewed continuously because SMUD intends to utilize these facilities indefinitely. GASB No. 83 requires the measurement of the ARO to be based on the probability weighting of potential outcomes. Due to the low probability that these leases will be terminated, a liability has not been recorded.

Cash and Cash Equivalents. Cash and cash equivalents include all debt instruments purchased with an original maturity of 90 days or less, deposits held at financial institutions, all investments in the Local Agency Investment Fund (LAIF), and money market funds. LAIF has an equity interest in the State of California (State) Pooled Money Investment Account (PMIA). PMIA funds are on deposit with the State's Centralized Treasury System and are managed in compliance with the California Government Code according to a statement of investment policy which sets forth permitted investment vehicles, liquidity parameters, and maximum maturity of investments.

Investments. SMUD's investments are reported at fair value in accordance with SGAS No. 72, ***"Fair Value Measurement and Application"*** (see Note 12). Realized and unrealized gains and losses are included in Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. Premiums and discounts on zero coupon bonds are amortized using the effective interest method. Premiums and discounts on other securities are amortized using the straight-line method, which approximates the effective interest method.

Electric Operating Revenues. Electric revenues are billed on the basis of monthly cycle bills and are recorded as revenue when the electricity is delivered. SMUD records an estimate for unbilled revenues earned from the dates its retail customers were last billed to the end of the month. At December 31, 2022 and 2021, unbilled revenues were $80.5 and $93.6 million, respectively.

Purchased Power Expenses. A portion of SMUD's power needs are provided through power purchase agreements (PPA). Expenses from such agreements, along with associated transmission costs paid to other utilities, are charged to Purchased Power expense in the Statements of Revenues, Expenses and Changes in Net Position in the period the power is received. The costs or credits associated with energy swap agreements (gas and electric) or other arrangements that affect the net cost of Purchased Power are recognized in the period in which the underlying power delivery occurs. Contract termination payments and adjustments to prior billings are included in Purchased Power expense once the payments or adjustments can be reasonably estimated.

Advanced Capacity Payments. Some long-term agreements to purchase energy or capacity from other providers call for up-front payments. Such costs are generally recorded as an asset and amortized over the length of the contract in Operations - Production expense on the Statements of Revenues, Expenses and Changes in Net Position.

Credit and Market Risk. SMUD enters into forward purchase and sales commitments for physical delivery of gas and electricity with utilities and power marketers. SMUD is exposed to credit risk related to nonperformance by its wholesale counterparties under the terms of these contractual agreements. In order to limit the risk of counterparty default, SMUD has a wholesale counterparty risk policy which includes using the credit agency ratings of SMUD's counterparties and other credit services, credit enhancements for counterparties that do not meet an acceptable risk level, and the use of standardized agreements that allow for the netting of positive and negative exposures associated with a single counterparty. SMUD is also subject to similar requirements for many of its gas and power purchase agreements. SMUD uses a combination of cash and securities to satisfy its collateral requirements to counterparties.

SMUD's component units, NCGA and NCEA, entered into guaranteed investment contracts and are exposed to credit risk related to nonperformance by its investment provider. For NCGA, the investment provider provides collateral if their credit ratings fall below agreed upon levels. SMUD holds deposits by counterparties and an investment provider and records the amounts as Credit Support Collateral Obligation in the Statements of Net Position.

Collateral deposits that SMUD has with counterparties are recorded as Credit Support Collateral Deposits in the Statements of Net Position.

Accounts Receivable, Allowance for Doubtful Accounts and Energy Efficiency Loans. Accounts receivable is recorded at the invoiced amount and does not bear interest, except for accounts related to energy efficiency loans. SMUD recognizes an estimate of uncollectible accounts for its receivables related to electric service, energy efficiency loans, and other non-electric billings, based upon its historical experience with collections and current energy market conditions. For large wholesale receivable balances, SMUD determines its bad debt reserves based on the specific credit issues for each account. In the Statements of Net Position, SMUD reports its receivables net of the allowance for uncollectible as current assets, and its energy efficiency loans net of the allowance for uncollectible as noncurrent assets. Due to COVID-19, SMUD suspended disconnections for non-payment beginning in March 2020 and reinstated disconnections in April 2022. At December 31, 2022 and 2021, SMUD estimated its uncollectible retail customer accounts at $38.0 million and $69.0 million, respectively, based on non-payment behaviors by aging category. SMUD records bad debts for its estimated uncollectible accounts related to electric service as a reduction to the related operating revenues in the Statements of Revenues, Expenses and Changes in Net Position. SMUD records bad debts for its estimated uncollectible accounts related to energy efficiency loans and other non-electric billings in Administrative, General and Customer expense in the Statements of Revenues, Expenses and Changes in Net Position.

SMUD's receivables, allowances for uncollectible and energy efficiency loans are presented below:

	December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
Retail customers:		
Receivables	$ 219,606	$ 259,987
Less: Allowance for uncollectible	(38,000)	(69,000)
Receivables - net	$ 181,606	$ 190,987
Wholesale and other (includes lease receivables, see Note 4):		
Receivables	$ 105,083	$ 60,883
Less: Allowance for uncollectible	(2,778)	(2,255)
Receivables - net	$ 102,305	$ 58,628
Energy efficiency loans:		
Receivables	$ 869	$ 1,517
Less: Allowance for uncollectible	(137)	(219)
Energy efficiency loans - net	$ 732	$ 1,298

Regulatory Deferrals. The Board has the authority to establish the level of rates charged for all SMUD services. As a regulated entity, SMUD's financial statements are prepared in accordance with SGAS Statement No. 62, ***"Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 Financial Accounting Standards Board (FASB) and American Institute of Certified Public Accountants Pronouncements,"*** which requires that the effects of the ratemaking process be recorded in the financial statements. Accordingly, certain expenses and credits, normally reflected in Change in Net Position as incurred, are recognized when included in rates and recovered from or refunded to customers. SMUD records various regulatory assets and credits to reflect ratemaking actions of the Board (see Note 8).

Materials and Supplies. Materials and supplies are stated at average cost, which approximates the first-in, first-out method.

Compensated Absences. SMUD accrues vacation leave and compensatory time when employees earn the rights to the benefits. SMUD does not record sick leave as a liability until it is taken by the employee, since there are no cash payments made for sick leave when employees terminate or retire. Compensated absences are recorded as Accrued Salaries and Compensated Absences in the Statements of Net Position. At December 31, 2022 and 2021, the total estimated liability for vacation and other compensated absences was $43.7 million and $41.9 million, respectively.

Public Good. Public Good expenses consist of non-capital expenditures for energy efficiency programs, low income subsidies, renewable energy resources and technologies, and research and development.

Gains/Losses on Bond Refundings. Gains and losses resulting from bond refundings are included as a component of Deferred Inflows of Resources or Deferred Outflows of Resources in the Statements of Net Position and amortized as a component of Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position over the shorter of the life of the refunded debt or the new debt using the effective interest method.

Gains/Losses on Bond Defeasances or Extinguishments. Gains and losses resulting from bond defeasances or extinguishments that were not financed with the issuance of new debt are included as a component of Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position.

Deferred Outflow of Resources. A deferred outflow of resources represents a consumption of net position that applies to a future period and will not be recognized as an outflow of resources (expense) until that future time.

Deferred Inflows of Resources. A deferred inflow of resources represents an acquisition of net position that applies to a future period and therefore will not be recognized as an inflow of resources (revenue) until that future time.

Derivative Financial Instruments. SMUD records derivative financial instruments (interest rate swap and gas price swap agreements, certain wholesale sales agreements, certain power purchase agreements and option agreements) at fair value in its Statements of Net Position. SMUD does not enter into agreements for speculative purposes. Fair value is estimated by comparing contract prices to forward market prices quoted by third party market participants and/or provided in relevant industry publications. SMUD is exposed to risk of nonperformance if the counterparties default or if the swap agreements are terminated. SMUD reports derivative financial instruments with remaining maturities of one year or less and the portion of long-term contracts with scheduled transactions over the next twelve months as current in the Statements of Net Position (see Note 9).

Interest Rate Swap Agreements. SMUD enters into interest rate swap agreements to modify the effective interest rates on outstanding debt (see Notes 9 and 10).

Gas and Electricity Price Swap and Option Agreements. SMUD uses forward contracts to hedge the impact of market volatility on gas commodity prices for its natural gas-fueled power plants and for energy prices on purchased power for SMUD's retail load (see Note 9).

Precipitation Hedge Agreements. SMUD enters into non-exchange traded precipitation hedge agreements to hedge the cost of replacement power caused by low precipitation years (Precipitation Agreements). SMUD records the intrinsic value of the Precipitation Agreements as Prepayments and Other under Current Assets in the Statements of Net Position. Settlement of the Precipitation Agreements is not performed until the end of the period covered (water year ended September 30). The intrinsic value of a Precipitation Agreement is the difference between the expected results from a monthly allocation of the cumulative rainfall amounts, in an average rainfall year, and the actual rainfall during the same period.

Insurance Programs. SMUD records liabilities for unpaid claims at their present value when they are probable in occurrence and the amount can be reasonably estimated. SMUD records a liability for unpaid claims associated with general, auto, workers' compensation, and short-term and long-term disability based upon estimates derived by SMUD's claims administrator or SMUD staff. The liability comprises the present value of the claims outstanding and includes an amount for claim events incurred but not reported based upon SMUD's experience (see Note 16).

Pollution Remediation. SGAS No. 49, ***"Accounting and Financial Reporting for Pollution Remediation Obligations,"*** (GASB No. 49) requires that a liability be recognized for expected outlays for remediating existing pollution when certain triggering events occur. SMUD recorded a pollution remediation obligation for its North City substation, which was built on a former landfill, for the former Community Linen Rental Services Property, and for obligations for several land sites, including a few sites where it will be building a substation. At December 31, 2022 and 2021, the total pollution remediation liability was $24.3 million and $20.4 million, respectively, and recorded as either Current Liabilities, Customer Deposits and Other or Noncurrent Liabilities, Self Insurance and Other in the Statements of Net Position. Costs were estimated using the expected cash flow technique prescribed under GASB No. 49, including only amounts that are reasonably estimable.

Hydro License. SMUD owns and operates the Upper American River Hydroelectric Project (UARP). The original license to construct and operate the UARP was issued in 1957 by FERC. Effective July 1, 2014, SMUD received a 50-year hydro license. As part of the hydro licensing process, SMUD entered into four contracts with government agencies whereby SMUD makes annual payments to them for various services for the term of the license. At December 31, 2022 and 2021, the liability for these contract payments was $58.5 million and $65.1 million, respectively, and recorded as either Current Liabilities, Customer Deposits and Other or Noncurrent Liabilities, Self-Insurance and Other in the Statements of Net Position (see Note 17).

Assembly Bill 32. California Assembly Bill (AB) 32 was an effort by the State of California to set a greenhouse gas (GHG) emissions reduction goal into law, and initially was set through 2020. In 2015, the state established a 2030 goal for GHG emissions at 40 percent below 1990 levels, and in July of 2017 AB-398 was approved by the Governor. Central to these initiatives is the Cap and Trade program, which covers major sources of GHG emissions in the State including power plants. AB-398 extended Cap and Trade through 2030. The Cap and Trade program includes an enforceable emissions cap that will decline over time. The State distributes allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period. SMUD is subject to AB-32 and has participated in California Air Resources Board (CARB) administered quarterly auctions in the past. In a normal water year, SMUD expects its free allocation of allowances from the CARB to cover its compliance costs associated with electricity delivered to its retail customers. SMUD expects to recover compliance costs associated with wholesale power sales costs through its wholesale power sales revenues. SMUD continues to monitor new legislation and proposed programs that could impact AB-32 and its subsequent extensions.

In addition, the Low Carbon Fuel Standards (LCFS) was enacted through AB-32. CARB is responsible for the implementation of LCFS and has established a program for LCFS credits. The LCFS program is designed to reduce greenhouse gas emissions associated with the lifecycle of transportation fuels used in California. SMUD participates in the program and receives LCFS credits from CARB for the electricity used to power electric vehicles. The LCFS credits are sold to parties (oil companies) that have a compliance obligation. CARB requires that electricity LCFS credit sales proceeds be spent in a way to benefit current or future Electric Vehicle drivers in California, for both commercial and residential vehicles.

Net Pension Asset (NPA) or Liability (NPL). The NPA or NPL is the difference between the actuarial present value of projected pension benefit payments attributable to employees' past service and the pension plan's fiduciary net position (see Note 14).

Net Other Postemployment Benefit (OPEB) Asset (NOA) or Liability (NOL). The NOA or NOL is the difference between the actuarial present value of projected OPEB benefit payments attributable to employee's past service and the OPEB plan's fiduciary net position (see Note 15).

Net Position. SMUD classifies its net position into three components as follows:

- Net investment in capital assets – This component of net position consists of capital assets, net of accumulated depreciation, reduced by the outstanding debt balances, net of unamortized debt expenses. Deferred inflows and outflows of resources that are attributable to the acquisition, construction or improvement of those assets or related debt are also included.
- Restricted – This component of net position consists of assets with constraints placed on their use, either externally or internally. Constraints include those imposed by debt indentures (excluding amounts considered in Net investment in capital assets, above), grants or laws and regulations of other governments, or by law through constitutional provisions or enabling legislation or by the Board. These restricted assets are reduced by liabilities and deferred inflows of resources related to those assets.
- Unrestricted – This component of net position consists of net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that do not meet the definition of "Net investment in capital assets" or "Restricted."

Contributions in Aid of Construction (CIAC). SMUD records CIAC from customer contributions, primarily relating to expansions to SMUD's distribution facilities, as Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. Contributions of capital are valued at acquisition value. For ratemaking purposes, the Board does not recognize such revenues when received; rather, CIAC is included in revenues as such costs are amortized over the estimated useful lives of the related distribution facilities.

Revenues and Expenses. SMUD distinguishes operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with SMUD's principal ongoing operations. The principal operating revenues of SMUD are charges to customers for sales and services. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as Non-Operating Revenues and Expenses in the Statements of Revenues, Expenses and Changes in Net Position.

Grants. SMUD receives grant proceeds from federal and state assisted programs for its projects which include, but are not limited to, advanced and renewable technologies, electric transportation, and energy efficiency. SMUD also periodically receives grant proceeds from federal or state assistance programs as partial reimbursements for costs it has incurred as a result of natural disasters, such as storm or fire damages. During 2021, SMUD received $41.4 million from the California Arrearage Payment Program (CAPP), which offers financial assistance to help reduce past due energy balances accrued during the COVID-19 pandemic. The State Budget Act of 2021 appropriated $1.0 billion from the federal American Rescue Plan Act of 2021 to support the establishment of CAPP. When applicable, these programs may be subject to financial and compliance audits pursuant to regulatory requirements. SMUD records grant proceeds related to capital projects as a Regulatory Credit (see Note 8).

SMUD has taxable Build America Bonds in which it receives an interest subsidy from the federal government equal to 35 percent of the interest paid (see Note 10). SMUD received reduced subsidy payments in 2022 and 2021 due to budget sequestration by the federal government. SMUD recognized $9.3 million in revenues in 2022 and 2021 for its Build America Bonds, as a component of Other income (expense) - net, in the Statements of Revenues, Expenses and Changes in Net Position.

Customer Sales and Excise Taxes. SMUD is required by various governmental authorities, including states and municipalities, to collect and remit taxes on certain customer sales. Such taxes are presented on a net basis and excluded from revenues and expenses in the Statements of Revenues, Expenses and Changes in Net Position.

Subsequent Events. Subsequent events for SMUD have been evaluated through February 24, 2023 (see Note 19).

Reclassifications. Certain amounts in the 2021 Financial Statements have been reclassified in order to conform to the 2022 presentation.

Recent Accounting Pronouncements, adopted. In March 2020, GASB issued SGAS No. 93, ***"Replacement of Interbank Offered Rates"*** (GASB No. 93). The objective of this statement is to address accounting and financial reporting implications that result from the replacement of an interbank offered rate (IBOR), most notably, the London Interbank Offered Rate (LIBOR), which is expected to cease to exist in its current form at the end of 2021. This statement provides exceptions for certain hedging derivative instruments to the hedge accounting termination provisions when an IBOR is replaced as the reference rate of the hedging derivative instrument's variable payment. By removing LIBOR as an appropriate benchmark interest rate for the qualitative evaluation of the effectiveness of an interest rate swap, GASB No. 93 identifies the Secured Overnight Financing Rate and the Effective Federal Funds Rate as appropriate benchmark interest rates to replace LIBOR. This statement is effective for SMUD in 2022. GASB No. 99 (see below) further states that the LIBOR is no longer an appropriate benchmark interest rate for a derivative instrument that hedges the interest rate risk of taxable debt when LIBOR ceases to be determined by the ICE Benchmark Administration using the methodology in place as of December 31, 2021. SMUD utilizes the 1-month LIBOR for its interest rate swap agreements. According to the ICE Benchmark Administration, the 1-month US dollar settings will be determined and published under the methodology until the end of June 2023. At this time, SMUD will determine an appropriate benchmark interest rate.

In April 2022, GASB issued SGAS No. 99, ***"Omnibus 2022"*** (GASB No. 99). This statement addresses a variety of topics and is effective for SMUD in 2022, 2023, or 2024 depending on the requirement. The only topic effective for SMUD in 2022 is the replacement of IBOR discussed above. SMUD chose to adopt provisions related to leases and the implementation of GASB No. 87 that were effective in 2023 early. SMUD incorporated the clarifications related to leases contained in GASB No. 99 during its implementation of GASB No. 87. SMUD is currently assessing the financial impact of adopting the remaining topics in this statement that are effective in 2023 and 2024.

Recent Accounting Pronouncements, not yet adopted. In March 2020, GASB issued SGAS No. 94, ***"Public-Private and Public-Public Partnerships and Availability Payment Arrangements"*** (GASB No. 94). The primary objective of this Statement is to provide guidance for accounting and financial reporting related to public-private and public-public partnership arrangements (PPPs) and availability payment arrangements (APAs). A PPP is an arrangement in which a government (the transferor) contracts with an operator (a governmental or nongovernmental entity) to provide public services by conveying control of the right to operate or use a nonfinancial asset, such as infrastructure or other capital asset (the underlying PPP asset), for a period of time in an exchange or exchange-like transaction. An APA is an arrangement in which a government compensates an operator for services that may include designing, constructing, financing, maintaining, or operating an underlying nonfinancial asset for a period of time in an exchange or exchange-like transaction. This statement is effective for SMUD in 2023. SMUD is currently assessing the financial impact of adopting this statement but does not expect it to be material.

In May 2020, GASB issued SGAS No. 96, ***"Subscription-Based Information Technology Arrangements"*** (GASB No. 96). This statement provides guidance on the accounting and financial reporting for subscription-based information technology arrangements (SBITAs) for governments. The statement (1) defines a SBITA as a contract that conveys control of the right to use another party's information technology software, alone or in combination with tangible capital assets, as specified in the contract for a period of time in an exchange or exchange-like transaction; (2) establishes that a SBITA results in a right-to-use subscription asset and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. To the extent relevant, the standards for SBITAs are based on the standards established in GASB No. 87, *Leases*, as amended. This statement is effective for SMUD in 2023. SMUD is currently assessing the financial statement impact of adopting this statement.

In June 2022, GASB issued SGAS No. 100, "***Accounting Changes and Error Corrections – an amendment of GASB Statement No. 62***" (GASB No. 100), to enhance accounting and financial reporting requirements for accounting changes and error corrections. The statement defines accounting changes and sets forth requirements for reporting changes and error corrections in the financial statements. In addition, the statement contains requirements for disclosure in notes to financial statements of information about accounting changes and error corrections. Furthermore, for periods that are earlier than those included in the financial statements, information presented in required supplementary information and supplementary information should be restated for error corrections, but not for changes in accounting principles. This statement is effective for SMUD in fiscal year 2024. SMUD is currently assessing the financial statement impact of adopting this statement.

In June 2022, GASB issued SGAS No. 101, "***Compensated Absences***" (GASB No. 101), to better meet the information needs of financial statement users by updating the recognition and measurement guidance for compensated absences. The unified recognition and measurement model in this Statement will result in a liability for compensated absences that more appropriately reflects when a government incurs an obligation. This statement is effective for SMUD in fiscal year 2024. SMUD is currently assessing the financial statement impact of adopting this statement.

NOTE 3. ACCOUNTING CHANGE

In June 2017, GASB issued SGAS No. 87, "Leases" (GASB No. 87), to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. The statement requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. GASB No. 87 establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under GASB No. 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. SMUD implemented GASB No. 87 in fiscal year 2022, retroactive to the beginning of fiscal year 2021. SMUD has assessed whether its leases meet the requirements of GASB No. 87. The implementation impacted the Statements of Net Position when the lease assets, receivables, liabilities and deferred inflow of resources were recorded. The implementation also impacted the Statements of Revenues, Expenses and Changes in Net Position as lease revenue, amortization expense, interest income, and interest expense were also recorded. Net Position was reduced by $0.8 million for 2021 due to the restatement (see Note 4).

SMUD has restated amounts of the affected balances within the financial statements for the period ended December 31, 2021, as follows:

STATEMENTS OF NET POSITION

	December 31, 2021 (restated)	December 31, 2021
Assets		
Electric Utility Plant		
Plant in service	$ 6,864,040	$ 6,782,493
Less accumulated depreciation and depletion	(3,340,797)	(3,314,820)
Current Assets		
Receivables – net:		
Wholesale and other	58,628	58,202
Noncurrent Assets		
Due from affiliated entity	29,674	29,687
Prepayments and other	40,738	23,576
Current Liabilities		
Interest payable	50,739	50,709
Customer deposits and other	67,064	41,003
Noncurrent Liabilities		
Self insurance and other	118,146	87,617
Deferred Inflows of Resources		
Regulatory credits	543,014	543,027
Deferred lease inflows	17,373	-0-
Net Position		
Net investment in capital assets	1,349,688	1,350,709
Revenue bond and debt service	64,793	64,823
Unrestricted	777,674	777,459

STATEMENTS OF REVENUE, EXPENSES AND CHANGES IN NET POSITION

	December 31, 2021 (restated)	December 31, 2021
Operating Revenues		
Street lighting and other	$ 41,739	$ 42,031
Operating Expenses		
Purchased power	395,572	420,350
Production	357,832	358,162
Administrative, general and customer	153,799	153,978
Depreciation and amortization	242,917	216,940
Non-operating revenues (expenses)		
Interest income	6,777	6,501
Other income - net	93,302	93,432
Change in Net Position	338,749	339,585
Net Position – End of Year	2,296,261	2,297,097

STATEMENTS OF CASH FLOWS

	December 31, 2021 (restated)	December 31, 2021
Cash flows from operating activities		
Receipts from customers	$ 1,498,124	$ 1,498,982
Payments for wholesale power and gas purchases	(599,268)	(621,944)
Payments to vendors/others	(320,201)	(320,710)
Cash flows from capital and related financing activities		
Lease and other payments	(23,185)	-0-
Cash received from leases	858	-0-
Reconciliation of operating income to net cash provided by operating activities:		
Operating income	339,935	340,917
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	242,917	216,940
Other (receipts) payments – net	13,283	15,951

NOTE 4. ELECTRIC UTILITY PLANT

The summarized activity of SMUD's Electric Utility Plant during 2022 is presented below:

	Balance January 1, 2022	Additions	Transfers and Disposals	Balance December 31, 2022
		(thousands of dollars)		
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 169,544	$ 1,072	$ -0-	$ 170,616
CWIP	367,297	353,439	(372,978)	347,758
Total nondepreciable electric utility plant	536,841	354,511	(372,978)	518,374
Depreciable Electric Utility Plant:				
Generation	1,751,920	21,801	(7,324)	1,766,397
Transmission	522,765	112,301	(341)	634,725
Distribution	2,651,039	147,235	(12,699)	2,785,575
Investment in JPAs	34,761	5,947	-0-	40,708
Intangibles	526,923	44,394	-0-	571,317
General	1,125,541	45,634	(23,361)	1,147,814
	6,612,949	377,312	(43,725)	6,946,536
Lease Assets:				
Land	1,764	-0-	-0-	1,764
Generation	76,804	-0-	-0-	76,804
General	2,979	2,577	-0-	5,556
	81,547	2,577	-0-	84,124
Less: accumulated depreciation and amortization	(3,333,205)	(248,672)	41,787	(3,540,090)
Less: accumulated amortization on JPAs	(7,592)	(313)	-0-	(7,905)
	(3,340,797)	(248,985)	41,787	(3,547,995)
Total depreciable plant	3,353,699	130,904	(1,938)	3,482,665
Total Electric Utility Plant - net	$ 3,890,540	$ 485,415	$ (374,916)	$ 4,001,039

The summarized activity of SMUD's Electric Utility Plant during 2021 is presented below:

	Balance January 1, 2021	Additions	Transfers and Disposals	Balance December 31, 2021 (Restated)
		(thousands of dollars)		
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 159,515	$ 10,835	$ (806)	$ 169,544
CWIP	461,319	298,426	(392,448)	367,297
Total nondepreciable electric utility plant	620,834	309,261	(393,254)	536,841
Depreciable Electric Utility Plant:				
Generation	1,710,420	49,594	(8,094)	1,751,920
Transmission	410,567	113,776	(1,578)	522,765
Distribution	2,498,526	162,177	(9,664)	2,651,039
Investment in JPAs	30,012	4,749	-0-	34,761
Intangibles	517,415	18,016	(8,508)	526,923
General	1,098,911	39,861	(13,231)	1,125,541
	6,265,851	388,173	(41,075)	6,612,949
Lease Assets:				
Land	-0-	1,764	-0-	1,764
Generation	-0-	76,804	-0-	76,804
General	-0-	2,979	-0-	2,979
	-0-	81,547	-0-	81,547
Less: accumulated depreciation and amortization	(3,132,247)	(242,313)	41,355	(3,333,205)
Less: accumulated amortization on JPAs	(7,279)	(313)	-0-	(7,592)
	(3,139,526)	(242,626)	41,355	(3,340,797)
Total depreciable plant	3,126,325	171,524	280	3,353,699
Total Electric Utility Plant - net	$ 3,747,159	$ 536,355	$ (392,974)	$ 3,890,540

Leases. SMUD engages in lease contracts for land, communication sites, buildings, and a power plant. SMUD leases land to SFA, a component unit, and as described in Note 2, all of the activities and balances of the component units are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD.

Lessor. Lease agreements include land, communication sites, and a building. Lease terms range from 19 to 35 years including options to extend the lease term after completion of the initial contracted term. The likelihood that the renewal options will be exercised has been evaluated and it has been determined that Lessees will exercise the renewal options with reasonable certainty. The agreements allow for periodic increases to the lease payments. The interest rates range between 0.7 percent to 4.2 percent based on the AAA Muni Curve with the number of years to maturity that corresponds to the lease term, plus an additional credit spread to account for a different credit rating and other factors. At December 31, 2022 and 2021, lease receivables included in current assets, Receivables – Wholesale and other (see Note 2), were $0.8 million and $0.4 million, respectively, and lease receivables included in noncurrent assets, Prepayments and other, were $17.8 million and $17.2 million, respectively. As of December 31, 2022 and 2021, deferred lease inflows were $18.2 million and $17.4 million, respectively. SMUD recognized lease revenue of $0.7 million and $0.6 million in 2022 and 2021, respectively, which is reported in Street lighting and other on the Statements of Revenues, Expenses and Changes in Net Position. SMUD recognized interest income of $0.03 million in 2022 and 2021. There were no variable lease payments received in 2022 or 2021.

Lessee. Lessee agreements include land, buildings, and a power plant. Lease terms range from 3 to 25 years including options to extend the lease term after completion of the initial contracted term. The likelihood that the renewal options will be exercised has been evaluated and it has been determined that the lease agreements will be renewed with reasonable certainty. The agreements allow for periodic increases to the lease payments. The interest rates range between 0.1 percent to 4.2 percent based on the AAA Muni Curve with the number of years to maturity that corresponds to the lease term, plus an additional credit spread to account for a different credit rating and other factors. As of December 31, 2022 and 2021, assets recorded under leases were $84.1 million and $81.5 million, respectively, and accumulated amortization associated with lease assets was $52.0 million and $26.0 million, respectively. SMUD recognized amortization expense of $26.0 million in 2022 and 2021 which is reported as Depreciation and amortization on the Statements of Revenues, Expenses and Changes in Net Position. As of December 31, 2022 and 2021, lease obligations included in current liabilities, Customer deposits and other, were $26.8 million and $26.1 million, respectively, and lease obligations included in noncurrent liabilities, Self insurance and other, were $6.3 million and $30.5 million, respectively. There were no lease impairments in 2022 or 2021. There were no payments recorded in the current period that were not included in the measurement of the lease liability. There is one lease commitment for which the lease term begins in 2024 and will be recorded as a lease asset and lease liability upon commencement of the lease term.

The following table summarizes the future lease principal and interest payments as of December 31, 2022:

	Principal	Interest	Total
2023	$ 26,767	$ 174	$ 26,941
2024	402	142	544
2025	419	137	556
2026	429	132	561
2027	438	127	565
2028-2032 (combined)	1,816	548	2,364
2033-2037 (combined)	939	422	1,361
2038-2042 (combined)	979	273	1,252
2043-2046 (combined)	919	99	1,018
Total	$ 33,108	$ 2,054	$ 35,162

NOTE 5. INVESTMENT IN JOINT POWERS AUTHORITY

TANC. SMUD and fourteen other California municipal utilities are members of TANC, a JPA. TANC, along with the other California municipal utilities, own and operate the California-Oregon Transmission Project (COTP), a 500-kilovolt transmission line between central California and southern Oregon. SMUD is obligated to pay approximately 39 percent of TANC's COTP debt service and operations costs in exchange for entitlement to approximately 536 megawatts (MW) of TANC's 1,390 MW transfer capability. Additionally, SMUD has a 48 MW share of TANC's 300 MW firm, bi-directional transmission over Pacific Gas and Electric Company's (PG&E) system between PG&E's Tesla and Midway substations (SOT). The total entitlement shares for the COTP and SOT described above include the long-term agreements listed below.

In 2009, SMUD entered into a 15-year long-term layoff agreement with TANC and certain members, expiring January 31, 2024. This agreement provides for the assignment of all rights and obligations of the City of Palo Alto and the City of Roseville related to their COTP and SOT entitlements. This agreement increased SMUD's COTP entitlement by 36 MW and SOT entitlement by 2 MW. On July 1, 2014, an amendment returned to the City of Roseville all rights and obligations related to the COTP entitlements, which decreased SMUD's COTP entitlement by 13 MW.

Effective July 1, 2014, SMUD entered into a 25-year long-term layoff agreement with TANC and certain members that provides for the assignment of all rights and obligations of Northern California Power Agency and partial rights and obligations of the City of Santa Clara related to their COTP entitlements. This agreement increased SMUD's COTP entitlements by 130 MW.

The long-term debt of TANC, which totals $167.8 million (unaudited) at December 31, 2022, is collateralized by a pledge and assignment of net revenues of TANC supported by take or pay commitments of SMUD and other members. Should other members default on their obligations to TANC, SMUD would be required to make additional payments to cover a portion of such defaulted payments, up to 25 percent of its current obligation. SMUD recorded transmission expenses related to TANC of $16.9 million and $16.5 million in 2022 and 2021, respectively.

Summary financial information for TANC is presented below:

	December 31,	
	2022 (Unaudited)	2021(restated) (Unaudited)
	(thousands of dollars)	
Total Assets	$ 389,258	$ 372,434
Total Deferred Outflows of Resources	106	349
Total Assets and Deferred Outflows of Resources	$ 389,364	$ 372,783
Total Liabilities	$ 309,291	$ 307,554
Total Deferred Inflows of Resources	995	1,079
Total Net Position	79,078	64,150
Total Liabilities and Net Position	$ 389,364	$ 372,783
Changes in Net Position for the Six Months Ended December 31	$ 7	$ -0-

Copies of the TANC annual financial reports may be obtained from SMUD at P.O. Box 15830, Sacramento, California 95852 or online at www.tanc.us.

BANC. SMUD, City of Redding, City of Roseville, Modesto Irrigation District (MID), City of Shasta Lake, and Trinity Public Utilities District are members of BANC, a JPA formed in 2009. In 2011, operational control of Balancing Authority Area (BAA) operations was transferred from SMUD to BANC. BANC performs FERC approved BAA reliability functions that are managed by North American Electric Reliability Corporation (NERC), nationally, and by Western Electricity Coordinating Council functions in the west. SMUD recorded expenses related to BANC of $3.9 million and $3.7 million in 2022 and 2021, respectively.

Summary financial information for BANC is presented below:

	December 31,	
	2022 (Audited)	2021 (Audited)
	(thousands of dollars)	
Total Assets	$ 15,028	$ 7,097
Total Liabilities	$ 15028	$ 7,097
Total Net Position	-0-	-0-
Total Liabilities and Net Position	$ 15,028	$ 7,097
Changes in Net Position for the Year Ended December 31	$ -0-	$ -0-

Copies of the BANC annual financial reports may be obtained from SMUD at P.O. Box 15830, Sacramento, California 95852.

NOTE 6. COMPONENT UNITS

CVFA Carson Power Plant Cogeneration Project. CVFA is a JPA formed by SMUD and the Sacramento Regional County Sanitation District. CVFA operates the Carson Power Plant Project, a 65 MW (net) natural gas-fired cogeneration facility and a 42 MW (net) natural gas-fired simple cycle peaking plant. On November 1, 2021, CVFA transferred the assets and obligations, including the ownership of the Carson Power Plant to SFA (see Note 2).

SCA Procter & Gamble Power Plant Cogeneration Project. SCA is a JPA formed by SMUD and the SFA. SCA operates the Procter & Gamble Power Plant Project, a 136 MW (net) natural gas-fired cogeneration facility and a 50 MW (net) natural gas-fired simple cycle peaking plant. On November 1, 2021, SCA transferred the assets and obligations, including the ownership of the Procter & Gamble Power Plant to SFA (see Note 2).

SFA Cosumnes Power Plant Project. SFA is a JPA formed by SMUD and MID. SFA operates the Cosumnes Power Plant Project, a 602 MW (net) natural gas-fired, combined cycle facility. The revenue stream to pay the SFA bonds' debt service is provided by a "take-or-pay" power purchase agreement between SMUD and SFA. On November 1, 2021, CVFA, SCA and SPA assets and obligations, including ownership of the assigned Power Plants, were transferred to SFA (see Note 2).

SPA Campbell Soup Power Plant Cogeneration Project. SPA is a JPA formed by SMUD and the SFA. SPA operates the Campbell Soup Power Plant Project, a 160 MW (net) natural gas-fired cogeneration facility, and the McClellan Power Plant Project, a 72 MW (net) natural gas-fired simple cycle peaking plant. On November 1, 2021, SPA transferred the assets and obligations, including the ownership of the Campbell and McClellan Power Plants to SFA (see Note2).

NCGA. NCGA is a JPA formed by SMUD and the SFA. NCGA has a prepaid gas contract with Morgan Stanley Capital Group (MSCG) expiring in 2027, which is financed primarily by NCGA revenue bonds. SMUD has contracted with NCGA to purchase all the gas delivered by MSCG to NCGA, based on market prices. NCGA is obligated to pay the principal and interest on the bonds. Neither SMUD nor SFA is obligated to make debt service payments on the bonds. NCGA can terminate the prepaid gas contract under certain circumstances, including a failure by MSCG to meet its gas delivery obligation to NCGA or a drop in MSCG's credit rating below a specified level. If this occurs, MSCG will be required to make a termination payment to NCGA based on the unamortized prepayment proceeds received by MSCG.

NCEA. NCEA is a JPA formed by SMUD and the SFA. NCEA has a prepaid natural gas and electricity (commodity) contract with J. Aron & Company LLC (J. Aron) expiring in 2049, which is financed primarily by NCEA revenue bonds. SMUD has contracted with NCEA to purchase all the commodity delivered by J. Aron to NCEA, based on market prices. NCEA is obligated to pay the principal and interest on the bonds. Neither SMUD nor SFA is obligated to make debt service payments on the bonds. NCEA can terminate the prepaid commodity contract under certain circumstances, including a failure by J. Aron to meet its commodity delivery obligation to NCEA. If this occurs, J. Aron will be required to make a termination payment to NCEA based on the unamortized prepayment proceeds received by J. Aron.

The summarized activity of SMUD's component units for 2022 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2022
(thousands of dollars)

	SFA	NCGA	NCEA
Assets			
Electric Utility Plant - net	$ 309,606	$ -0-	$ -0-
Current Assets	109,011	40,591	36,148
Noncurrent Assets	682	112,872	524,549
Total Assets	419,299	153,463	560,697
Deferred Outflows of Resources	3,258	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 422,557	$ 153,463	$ 560,697
Liabilities			
Long-Term Debt - net	$ 95,553	$ 120,070	$ 544,562
Current Liabilities	44,332	24,404	20,537
Noncurrent Liabilities	15,215	-0-	208
Total Liabilities	155,100	144,474	565,307
Net Position	267,457	8,989	(4,610)
Total Liabilities and Net Position	$ 422,557	$ 153,463	$ 560,697

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2022
(thousands of dollars)

	SFA	NCGA	NCEA
Operating Revenues	$ 115,247	$ 28,472	$ 22,955
Operating Expenses	94,435	22,520	3,845
Operating Income	20,812	5,952	19,110
Non-Operating Revenues and Expenses			
Other Revenues	1,155	326	-0-
Interest Charges and Other	(3,126)	(6,610)	(16,354)
Change in Net Position Before Distributions and Contributions	18,841	(332)	2,756
Distribution to Member	(35,000)	(590)	(941)
Member Contributions	-0-	73	140
Change in Net Position	(16,159)	(849)	1,955
Net Position – Beginning of Year	283,616	9,838	(6,565)
Net Position – End of Year	$ 267,457	$ 8,989	$ (4,610)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2022
(thousands of dollars)

	SFA	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 47,786	$ 25,312	$ 22,955
Net Cash Provided by (Used in) Noncapital Financing Activities	(35,000)	(27,955)	(22,694)
Net Cash Used in Capital Financing Activities	(41,839)	-0-	-0-
Net Cash Provided by (Used in) Investing Activities	384	536	(8,579)
Net Decrease in Cash and Cash Equivalents	(28,669)	(2,107)	(8,318)
Cash and Cash Equivalents at the Beginning of the Year	69,630	14,823	10,877
Cash and Cash Equivalents at the End of the Year	$ 40,961	$ 12,716	$ 2,559

The summarized activity of SMUD's component units for 2021 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2021
(thousands of dollars)

	SFA (Restated)	NCGA	NCEA
Assets			
Electric Utility Plant - net	$ 309,574	$ -0-	$ -0-
Current Assets	133,673	39,938	28,879
Noncurrent Assets	790	138,186	528,808
Total Assets	444,037	178,124	557,687
Deferred Outflows of Resources	3,267	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 447,304	$ 178,124	$ 557,687
Liabilities			
Long-Term Debt - net	$ 99,421	$ 142,935	$ 551,815
Current Liabilities	49,507	25,351	12,277
Noncurrent Liabilities	14,760	-0-	160
Total Liabilities	163,688	168,286	564,252
Net Position	283,616	9,838	(6,565)
Total Liabilities and Net Position	$ 447,304	$ 178,124	$ 557,687

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2021
(thousands of dollars)

	SFA (Restated)	NCGA	NCEA
Operating Revenues	$ 143,050	$ 27,092	$ 21,406
Operating Expenses	137,234	19,980	3,573
Operating Income	5,816	7,112	17,833
Non-Operating Revenues and Expenses			
Other Revenues	51	492	459
Interest Charges and Other	(3,464)	(7,449)	(16,774)
Change in Net Position Before Distributions, Contributions and Special Item	(3,413)	155	1,518
Distribution to Member	-0-	(544)	(843)
Member Contributions	-0-	81	79
Special Item	161,298	-0-	-0-
Change in Net Position	163,701	(308)	754
Net Position – Beginning of Year	119,915	10,146	(7,319)
Net Position – End of Year	$ 283,616	$ 9,838	$ (6,565)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2021
(thousands of dollars)

	SFA (Restated)	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 25,536	$ 26,145	$ 21,405
Net Cash Provided by (Used in) Noncapital Financing Activities	37,999	(26,626)	(22,595)
Net Cash Used in Capital Financing Activities	(17,827)	-0-	-0-
Net Cash Provided by Investing Activities	56	492	1,190
Net Increase in Cash and Cash Equivalents	45,764	11	-0-
Cash and Cash Equivalents at the Beginning of the Year	23,866	14,812	10,877
Cash and Cash Equivalents at the End of the Year	$ 69,630	$ 14,823	$ 10,877

As described in Note 2, all of the activities and balances of the component units are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD. Copies of SFA's, NCGA's and NCEA's annual financial reports may be obtained from their Executive Office at P.O. Box 15830, Sacramento, California 95852 or online at www.smud.org.

NOTE 7. CASH, CASH EQUIVALENTS, AND INVESTMENTS

Cash Equivalents and Investments. SMUD's investment policy is governed by the California State and Municipal Codes and its Indenture, which allow SMUD's investments to include: obligations which are unconditionally guaranteed by the U.S. Government or its agencies or instrumentalities; direct and general obligations of the State or any local agency within the State; bankers' acceptances; commercial paper; certificates of deposit; repurchase and reverse repurchase agreements; medium term corporate notes; LAIF; and money market funds. SMUD's investment policy includes restrictions for investments relating to maximum amounts invested as a percentage of total portfolio and with a single issuer, maximum maturities, and minimum credit ratings.

Credit Risk. This is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. To mitigate this risk, SMUD limits investments to those rated, at a minimum, "A-1" or equivalent for short-term investments and "A" or equivalent for medium-term corporate notes by a nationally recognized rating agency, with the exception of the Guaranteed Investment Contracts (GICs) held by NCEA. NCEA's GICs are rated at the credit rating of the commodity supplier, or, if not rated, the guarantor of the commodity supplier which is currently Goldman Sachs rated as "BBB+".

Custodial Credit Risk. This is the risk that, in the event of the failure of a depository financial institution or counterparty to a transaction, SMUD's deposits and investments may not be returned or SMUD will not be able to recover the value of its deposits, investments or collateral securities that are in the possession of another party. SMUD does not have a deposit or investment policy for custodial credit risk.

As of December 31, 2022 and 2021, $9.7 million and $21.9 million in deposits were uninsured, respectively. The bank balance is also, per a depository pledge agreement between SMUD and SMUD's bank, collateralized at 128 percent and 129 percent of the collective funds on deposit (increased by the amount of accrued but uncredited interest, reduced by deposits covered by Federal Deposit Insurance Corporation) at December 31, 2022 and 2021, respectively. SMUD had money market funds of $185.7 million and $141.6 million which were uninsured at December 31, 2022 and 2021, respectively. SMUD's investments and money market funds are held in SMUD's name.

Concentration of Credit Risk. This is the risk of loss attributed to the magnitude of an entity's investment in a single issuer. SMUD places no limit on the amounts invested in any one issuer for repurchase agreements, US Treasuries, federal agency, and state and municipal securities.

The following are the concentrations of risk greater than five percent in either year:

	December 31,	
	2022	2021
Investment Type:		
Federal Home Loan Banks	68%	30%
Freddie Mac	N/A	13%
Corporate Note – Toyota Motor Credit Corp	5%	N/A
Municipal Bond – CA Department of Water Resources	N/A	18%
Municipal Bond – State of Florida	5%	16%
Municipal Bond – State of California	N/A	7%
Federal Farm Credit Bank	6%	N/A
Ebury	N/A	7%
Guaranteed Investment Contracts	4%	7%

Interest Rate Risk. This is the risk of loss due to the fair value of an investment declining due to interest rates rising. Though SMUD has restrictions as to the maturities of some of the investments, it does not have a formal policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates. SMUD is exposed to interest rate risk on its interest rate swaps (see Note 9).

The following schedules indicate the credit and interest rate risk at December 31, 2022 and 2021. The credit ratings listed are from Standard & Poor's (S&P) or Moody's. (N/A is defined as not applicable to the rating disclosure requirements.)

At December 31, 2022, SMUD's cash, cash equivalents, and investments consist of the following:

		Remaining Maturities (in years)			
Description	Credit Rating	Less Than 1	1-5	More Than 5	Total Fair Value
		(thousands of dollars)			
Cash and Cash Equivalents:					
Cash	N/A	$ 2,453	$ -0-	$ -0-	$ 2,453
LAIF	Not Rated	85,502	-0-	-0-	85,502
Money Market Funds	AAAm	185,709	-0-	-0-	185,709
Deposit at Notice	N/A	103,597	-0-	-0-	103,597
Commercial Paper	A-1	12,577	-0-	-0-	12,577
Total cash and cash equivalents		389,838	-0-	-0-	389,838
Investments:					
Federal Home Loan Bank	AA+	218,532	123,332	-0-	341,864
Federal Farm Credit Bank	AA+	-0-	29,377	-0-	29,377
U.S. Treasury Obligations	Aaa	39,569	24,272	-0-	63,841
Corporate Notes	AAA/AA+/A-/A+/A	-0-	48,490	-0-	48,490
Municipal Bonds	AAA/AA+/AA-	24,582	25,327	-0-	49,909
Guaranteed Investment Contracts	BBB+	-0-	19,350	-0-	19,350
Total investments		282,683	270,148	-0-	552,831
Total cash, cash equivalents, and investments		$ 672,521	$ 270,148	$ -0-	$ 942,669

At December 31, 2021, SMUD's cash, cash equivalents, and investments consist of the following:

		Remaining Maturities (in years)			
Description	Credit Rating	Less Than 1	1-5	More Than 5	Total Fair Value
		(thousands of dollars)			
Cash and Cash Equivalents:					
Cash	N/A	$ 4,931	$ -0-	$ -0-	$ 4,931
LAIF	Not Rated	526,297	-0-	-0-	526,297
Money Market Funds	AAAm	141,605	-0-	-0-	141,605
Deposit at Notice	N/A	105,922	-0-	-0-	105,922
Commercial Paper	A-1	9,893	-0-	-0-	9,893
Total cash and cash equivalents		788,648	-0-	-0-	788,648
Investments:					
Federal Home Loan Bank	AA+	44,992	-0-	-0-	44,992
Freddie Mac	AA+	20,013	-0-	-0-	20,013
U.S. Treasury Obligations	AA+	39,993	-0-	-0-	39,993
Corporate Notes	AA+	3,975	-0-	-0-	3,975
Municipal Bonds	AAA/AA+/AA-	37,947	24,851	-0-	62,798
Guaranteed Investment Contracts	BBB+	-0-	10,258	-0-	10,258
Total investments		146,920	35,109	-0-	182,029
Total cash, cash equivalents, and investments		$ 935,568	$ 35,109	$ -0-	$ 970,677

SMUD's cash, cash equivalents, and investments are classified in the Statements of Net Position as follows:

	December 31,	
	2022	2021
	(thousands of dollars)	
Cash, Cash Equivalents, and Investments:		
Revenue bond reserve and debt service funds:		
Revenue bond reserve fund	$ 2,004	$ 2,931
Debt service fund	81,263	78,922
Component unit bond reserve and debt service funds	36,118	38,171
Total revenue bond reserve and debt service funds	119,385	120,024
Nuclear decommissioning trust fund	8,980	8,874
Rate stabilization fund	156,016	188,992
Component unit other restricted funds	3,015	6,575
Escrow fund	12,484	15,182
Other restricted funds	14,925	654
Unrestricted funds	627,864	630,376
Total cash, cash equivalents, and investments	$ 942,669	$ 970,677

NOTE 8. REGULATORY DEFERRALS

The Board has taken various regulatory actions that result in differences between the recognition of revenues and expenses for ratemaking purposes and their treatment under generally accepted accounting principles for non-regulated entities (see Note 2). These actions result in regulatory assets and deferred inflow of resources, which are summarized in the tables below. Changes to these balances, and their inclusion in rates, occur only at the direction of the Board.

Regulatory Assets (Costs)

Decommissioning. SMUD's regulatory asset relating to the unfunded portion of its decommissioning liability for the Rancho Seco nuclear power plant is being collected through interest earnings on the Trust Fund. Nuclear fuel storage costs and non-radiological decommissioning costs have been collected in rates since 2009.

Derivative Financial Instruments. SMUD's regulatory costs and/or credits relating to investment derivative instruments are intended to defer the net difference between the fair value of derivative instruments and their cost basis, if any. Investment derivative instruments are reflected in rates at contract cost and as such, the balance is charged or credited into rates as the related asset or deferred inflow of resource is utilized (see Note 9).

Debt Issuance Costs. SMUD established a regulatory asset for costs incurred in connection with the issuance of debt obligations, principally underwriter fees and legal costs. The regulatory asset is amortized through 2022 for the portion related to SMUD's debt issuance costs and over the life of the bonds for the portion related to the component units' debt issuance costs. Debt issuance costs after December 31, 2013 are expensed.

Pension. SMUD established a regulatory asset for pension costs related to the implementation of GASB No. 68 which requires SMUD to record a net pension asset or a net pension liability. The regulatory asset is being amortized over a period of 25 years starting in 2018.

OPEB. SMUD established a regulatory asset for OPEB costs related to the implementation of GASB No. 75 which requires SMUD to record a net OPEB asset or net OPEB liability. The regulatory asset will be amortized over a period of 25 years starting in 2020.

Pension/OPEB. In 2022, SMUD established regulatory accounting for pension and OPEB regulatory costs and/or credits to defer recognition of certain expenses related to the amortization of the pension and OPEB deferred outflows and deferred inflows of resources to match such costs in the appropriate accounting period for rate-making purposes.

SMUD's total regulatory costs for future recovery are presented below:

	December 31,	
	2022	2021
	(thousands of dollars)	
Regulatory Costs:		
Decommissioning	$ 83,882	$ 83,846
Derivative financial instruments	1,095	5,387
Debt issuance costs	1,255	1,464
Pension – implementation costs	340,544	357,571
Pension – deferred outflows	86,574	-0-
OPEB – implementation costs	281,010	293,783
OPEB – deferred outflows	19,198	-0-
Total regulatory costs	813,558	742,051
Less: regulatory costs to be recovered within one year	(49,312)	(38,303)
Total regulatory costs for future recovery - net	$ 764,246	$ 703,748

Regulatory Credits

CIAC. In 2022 and 2021, SMUD added CIAC totaling $23.9 million and $24.2 million, respectively, to Regulatory Credits in the Statements of Net Position and recorded $14.8 million and $14.2 million of amortization, respectively, to Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. SMUD's regulatory credit relating to CIAC is intended to offset the revenue and expense associated with this accounting treatment. Thus, this regulatory credit is being amortized into rates over the depreciable lives of the related assets in order to offset the earnings effect of these non-exchange transactions.

Rate Stabilization. SMUD's regulatory credit relating to Rate Stabilization is intended to defer the need for future rate increases when costs exceed existing rates. At the direction of the Board, amounts may be either deferred into this fund (which reduces revenues), or amounts are recognized out of this fund (which increases revenues). The Board authorizes Rate Stabilization Fund (RSF) deferrals on an event driven basis.

In 2022 and 2021, $30.0 million and $11.4 million, respectively, was recognized as revenue from the RSF as a result of lower than budgeted energy deliveries from the Western Area Power Administration.

SMUD participates in the carbon allowance auctions under AB-32, the Global Warming Solutions Act (see Note 2). The Board authorized deferral of AB-32 auction proceeds to match the revenue recognition with the related expenses. The difference between the auction proceeds received and the funds spent on AB-32 programs are deferred into future years. In 2022 and 2021, the Board authorized deferring the difference into the RSF and $23.0 million and $16.2 million, respectively, was deferred from revenue to the RSF.

SMUD sells LCFS credits under AB-32, the Global Warming Solutions Act (see Note 2). In 2019, the Board authorized deferral of LCFS credit sales to match the revenue recognition with the related expenses. The difference between the LCFS credit sales and the funds spent on LCFS programs are deferred into future years. In 2022, the Board authorized deferring the difference and $0.7 million was deferred from revenue to the RSF. In 2021, the Board authorized recognizing the difference and $0.9 million was recognized from the RSF to revenue.

In 2021, the Board authorized SMUD to defer $35.0 million from revenue to the RSF to offset future one-time specific expenses which may have a significant financial impact on SMUD. In 2022, the Board authorized the use of $41.0 million of deferred operating revenue to offset future Community Impact Plan expenditures from 2022 through 2025, and $1.5 million was recognized from the RSF to revenue.

Hydro Rate Stabilization. The Hydro Rate Stabilization Fund (HRSF) was established through the Hydro Generation Adjustment (HGA) mechanism, which helps manage volatility in energy costs. The HGA mechanism applies a formula based on precipitation and wholesale electricity prices to calculate needed withdrawals from or deposits to the HRSF. The maximum balance of the HRSF is 6 percent of the budgeted retail revenue and the maximum annual transfer in or out of the HRSF is 4 percent of budgeted retail revenue. If the HRSF is depleted, SMUD will apply a hydro rate surcharge to customers' bills up to 4 percent. When the HRSF reaches the 6 percent cap, the Board may authorize a hydro rebate to customers or direct the funds for another purpose. In 2022 and 2021, $25.1 million and $18.6 million, respectively, was recognized from the HRSF to revenue as a result of low precipitation.

Senate Bill 1. SMUD implemented a per kilowatt hour solar surcharge, effective January 1, 2008 in order to fund investments in solar required by Senate Bill 1 (SB-1). The difference between the surcharge revenues received and the funds spent on solar initiatives will be recognized or deferred into future years. SMUD has spent less than it collected in SB-1 revenues and has recorded a regulatory credit. Collection of the solar surcharge ended in December 2017 when total collections reached $130.0 million. In 2022 and 2021, $0.04 million and $0.8 million was spent for SB-1 programs, respectively.

Grant Revenues. In 2009, SMUD was awarded several large grants under the American Recovery and Reinvestment Act, which provided significant reimbursements for capital expenditures. In 2010, the Board authorized the deferral of grant income for capital expenditures as regulatory liabilities. Thus, this regulatory credit was deferred to match the depreciable lives of the related capital assets in order to offset the earnings effect of these non-exchange transactions.

TANC Operations Costs. SMUD's cash payments to TANC exceeded TANC's accrual-based costs and SMUD has recorded a regulatory credit.

SMUD's total regulatory credits for future revenue recognition are presented below:

	December 31,	
	2022	2021 Restated
	(thousands of dollars)	
Regulatory Credits:		
CIAC	$ 298,026	$ 288,856
Derivative Financial Instruments	2,767	-0-
Rate stabilization	125,032	132,876
Hydro rate stabilization	30,984	56,117
Senate Bill 1	3,430	3,470
Pension – deferred inflows	68,082	-0-
OPEB – deferred inflows	32,983	-0-
Grant revenues	27,920	32,021
TANC operations costs	31,149	29,674
Total regulatory credits	$ 620,373	$ 543,014

NOTE 9. DERIVATIVE FINANCIAL INSTRUMENTS

To help provide stable electric rates and to meet the forecasted power needs of its retail customers reliably, SMUD enters into various physical and financial fixed price purchase contracts for electricity and natural gas. These fixed price contracts and swap agreements are intended to hedge the exposure due to highly volatile commodity prices. SMUD also enters into interest rate swap agreements to reduce interest rate risk. SMUD utilizes these derivative financial instruments to mitigate its exposure to certain market risks associated with ongoing operations. SMUD has established policies set by an executive committee for the use of derivative financial instruments for trading purposes. These contracts are evaluated pursuant to SGAS No. 53,

"Accounting and Financial Reporting for Derivative Instruments," (GASB No. 53) to determine whether they meet the definition of derivative instruments, and if so, whether they effectively hedge the expected cash flows associated with interest rate and commodity price risk exposures.

SMUD applies hedge accounting for derivative instruments that are deemed effective hedges. Under hedge accounting, the increase or (decrease) in the fair value of a hedge is reported as a Deferred Inflow or Deferred Outflow in the Statements of Net Position. Accumulated gains and losses from derivative instruments that do not meet the effectiveness tests are deferred for ratemaking purposes as regulatory assets on the Statements of Net Position (see Note 8).

SMUD executed numerous new gas and power related purchase agreements, some of which are recorded as hedging or investment derivative instruments and are therefore included in the following table. All hedging or investment derivative instruments are recorded at fair value in the Statements of Net Position (see Note 12).

The following is a summary of the fair value, changes in fair value and notional amounts of derivative instruments, grouped by trading strategy, outstanding at December 31, 2022 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2022 Changes in Fair Value		Fair Value at December 31, 2022		
	Current Amount	Noncurrent Amount	Current Amount	Noncurrent Amount	Notional
Cash Flow Hedges:					
(thousands of dollars)					
(thousands of Dekatherms (Dth))					
Asset: Investment Derivative Instruments					
Gas – Commodity	$ 1,936	$ (474)	$ 3,110	$ 329	688 Dth
Gas – Storage	87	-0-	87	-0-	77 Dth
Gas – Transportation	2,493	-0-	2,673	-0-	155 Dth
Total Investment Derivative Instruments	$ 4,516	$ (474)	$ 5,870	$ 329	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ 64,093	$ 19,348	$ 95,386	$ 52,029	57,997 Dth
Gas – Storage	11	-0-	502	-0-	303 Dth
Gas – Transportation	49,472	-0-	53,024	-0-	10,102 Dth
Interest Rate	1,153	28,574	2,437	33,646	$245,865
Total Hedging Derivative Instruments	$ 114,729	$ 47,922	$ 151,349	$ 85,675	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ (2,071)	$ 169	$ 2,076	$ 70	927 Dth
Gas – Storage	(90)	-0-	90	-0-	78 Dth
Gas – Transportation	-0-	-0-	-0-	-0-	
Interest Rate	1,815	3,193	937	1,354	$68,450
Total Investment Derivative Instruments	$ (346)	$ 3,362	$ 3,103	$ 1,424	
Liability: Hedging Derivative Instruments					
Gas – Commodity	$ 2,493	$ (5,314)	$ 12,859	$ 6,802	30,655 Dth
Gas – Storage	(7,637)	-0-	8,255	-0-	302 Dth
Gas – Transportation	1,040	-0-	522	-0-	4,188 Dth
Interest Rate	700	2,880	-0-	-0-	$0
Total Hedging Derivative Instruments	$ (3,404)	$ (2,434)	$ 21,636	$ 6,802	

The following is a summary of the fair value, changes in fair value and notional amounts of derivative instruments, grouped by trading strategy, outstanding at December 31, 2021 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2021 Changes in Fair Value		Fair Value at December 31, 2021		
	Current Amount	Noncurrent Amount	Current Amount	Noncurrent Amount	Notional
Cash Flow Hedges:					
(thousands of dollars)					
(thousands of Dekatherms (Dth))					
Asset: Investment Derivative Instruments					
Gas – Commodity	$ 1,174	$ 770	$ 1,174	$ 803	2,445 Dth
Gas – Storage	-0-	-0-	-0-	-0-	
Gas – Transportation	180	-0-	180	-0-	78 Dth
Total Investment Derivative Instruments	$ 1,354	$ 770	$ 1,354	$ 803	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ 29,964	$ 30,356	$ 31,293	$ 32,681	76,850 Dth
Gas – Storage	190	-0-	491	-0-	380 Dth
Gas – Transportation	2,062	-0-	3,552	-0-	9,395 Dth
Interest Rate	(509)	(1,209)	1,284	5,072	$263,535
Total Hedging Derivative Instruments	$ 31,707	$ 29,147	$ 36,620	$ 37,753	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ 4	$ 24	$ 5	$ 239	1,223 Dth
Gas – Storage	-0-	-0-	-0-	-0-	
Gas – Transportation	-0-	-0-	-0-	-0-	
Interest Rate	(1,360)	3,093	2,752	4,547	$74,375
Total Investment Derivative Instruments	$ (1,356)	$ 3,117	$ 2,757	$ 4,786	
Liability: Hedging Derivative Instruments					
Gas – Commodity	$ 5,314	$ 17,210	$ 15,352	$ 1,488	12,983 Dth
Gas – Storage	479	-0-	618	-0-	380 Dth
Gas – Transportation	(1,562)	-0-	1,562	-0-	3,805 Dth
Interest Rate	(179)	7,718	700	2,880	$157,785
Total Hedging Derivative Instruments	$ 4,052	$ 24,928	$ 18,232	$ 4,368	

Objectives and Terms of Hedging Derivative Instruments. The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2022 are summarized in the table below. The table is aggregated by the trading strategy. Credit ratings of SMUD's counterparties can be found in the table under Credit Risk. Details of SMUD's interest rate derivative instruments can be found in Note 10.

	Notional Amount Dth	Beginning Date	Ending Date	Minimum Price/Dth	Maximum Price/Dth
Gas – Commodity	90,267	01/01/23	12/31/25	$ 1.18	$ 50.38
Gas – Storage	760	01/01/23	02/28/23	1.19	20.50
Gas – Transportation	14,445	01/01/23	12/31/23	(2.86)	16.00

The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2021 are summarized in the table below. The table is aggregated by the trading strategy.

	Notional Amount Dth	Beginning Date	Ending Date	Minimum Price/Dth	Maximum Price/Dth
Gas – Commodity	95,478	01/01/08	12/31/25	$ 1.00	$ 7.80
Gas – Storage	760	01/01/22	02/28/22	.85	6.20
Gas – Transportation	13,278	01/01/22	12/31/22	(1.30)	1.35

SMUD hedges its interest rate exposure with swaps. One swap is used to convert some of the interest expense associated with the 1997 Series K fixed rate bonds to a variable rate interest expense (see note 10). SMUD also has a swap that is designed to fix the interest expense associated with commercial paper (see Note 11). SMUD has two forward starting swaps that are designed to synthetically fix the interest expense associated with refunding bonds that are expected to be issued to refund the 2013 Series A and 2013 Series B bonds in 2023 (see Note 10).

SMUD hedges its power and natural gas costs so that it can offer predictable rates to its retail electric customers and support its credit rating. SMUD maintains a risk management program to control the price, credit, and operational risks arising from its power and natural gas market activities. Under the program, authorized SMUD employees assemble a portfolio of swaps, futures, and forward contracts over time with the goal of making SMUD's purchased power and fuel budget more predictable.

The hedged risks include those related to interest rate and commodity price fluctuations associated with certain forecasted transactions, including interest rate risk on long-term debt, and forward purchases of gas and electricity to meet load.

Derivative Instruments Not Designated as Hedging Derivative Instruments

Gas and Electric Contracts. SMUD utilizes certain gas swap and electric swap agreements under GASB No. 53 not designated as hedging derivative instruments to mitigate exposure to changes in the market price of natural gas and electricity. The fair value of each agreement, excluding the actual settlements to be paid or received as of the end of the period, is recorded in the Statements of Net Position in either Current or Noncurrent Assets, Investment Derivative Instruments if in an asset position or Current or Noncurrent Liabilities, Investment Derivative Instruments if in a liability position. An offsetting amount is included in Current or Noncurrent Regulatory Costs or Regulatory Credits for future recovery in the Statements of Net Position. The actual settlement payable is recorded in Accounts Payable in the Statements of Net Position, and the actual settlement receivable is recorded in Receivables - net: Wholesale and Other in the Statements of Net Position. The payments and receipts of the actual settlement are recorded as Investment Expense in the Statements of Revenues, Expenses and Changes in Net Position.

Interest Rate Contracts. SMUD utilizes certain interest rate swap agreements not designated as hedging derivative instruments under GASB No. 53 to mitigate exposure to fluctuations in interest rates. The fair value of each agreement, excluding the balance of interest to be paid or received as of the end of the period, is recorded in the Statements of Net Position in either Current or Noncurrent Assets, Investment Derivative Instruments if in an asset position or Current or

Noncurrent Liabilities, Investment Derivative Instruments if in a liability position. An offsetting amount is included in Current or Noncurrent Regulatory Costs or Deferred Outflows or Inflows of Resources in the Statements of Net Position. The interest receivable is recorded in Receivables - net: Wholesale and Other in the Statements of Net Position and the accrued interest is recorded in Interest Payable in the Statements of Net Position. The payments or receipts of the actual settlement are recorded as Investment Expense in the Statements of Revenues, Expenses and Changes in Net Position.

The Board has deferred recognition of the effects of reporting the fair value of Investment Derivative Instruments for ratemaking purposes and maintains regulatory accounts to defer the accounting impact of these accounting adjustments (see Note 8). Fair values may have changed significantly since December 31, 2022.

Basis Risk. This is the risk that arises when a hedged item and a derivative instrument that is attempting to hedge that item are based on different indices. SMUD is exposed to basis risk when it hedges its natural gas purchases, which are priced at various locations, and with NYMEX futures contracts, which settle based on the price at Henry Hub, Louisiana. SMUD enters into basis swaps to hedge against this risk.

Termination Risk. This is the risk that a derivative instrument will terminate prior to its scheduled maturity due to a contractual event. Contractual events include bankruptcy, illegality, default, credit events upon merger, and other events. One aspect of termination risk is that SMUD would lose the hedging benefit of a derivative instrument that becomes subject to a termination event. Another aspect of termination risk is that, if at the time of termination, the mark to market value of the derivative instrument was a liability to SMUD, SMUD could be required to pay that amount to the counterparty. Termination risk is associated with all of SMUD's derivative instruments up to the fair value amounts.

Counterparty Credit Risk. This is the risk of loss resulting when the counterparty is unable or unwilling to fulfill its present and future financial obligations. SMUD can be exposed to significant counterparty credit risk on all derivative instruments. SMUD seeks to minimize credit risk by transacting with creditworthy counterparties. SMUD has established and maintained strict counterparty credit guidelines. SMUD continuously monitors counterparty credit risk and utilizes numerous counterparties to diversify the exposure to potential defaults. Under certain conditions as outlined in SMUD's credit risk management policy, SMUD may require additional credit support under its trading agreements.

Some of SMUD's derivative instrument master agreements contain credit contingent provisions that enable SMUD to maintain unsecured credit as a result of positive investment quality credit ratings from each of the major credit rating agencies. If SMUD's credit rating was to be downgraded, there could be a step-down in SMUD's unsecured credit thresholds, and SMUD's counterparties would require additional collateral. If SMUD's credit rating was to decrease below investment grade, SMUD's unsecured credit thresholds would be reduced to zero, and counterparties to the derivative instruments would demand ongoing full collateralization on derivative instruments in net out of the money positions (see Note 2).

The counterparties' credit ratings at December 31, 2022 and 2021 are shown in the table below. The credit ratings listed are from S&P or Moody's.

	December 31, 2022	December 31, 2021
Counterparty Gas Contracts:		
Bank of Montreal	A+	A+
Barclays Bank PLC	A	A
Citigroup Inc.	BBB+	BBB+
EDF Trading Group	Baa2	Baa2
J.P. Morgan Ventures Energy Corp.	A-	A-
Merrill Lynch	A2	A2
Mitsui Bussan	A	A
Morgan Stanley Capital Group, Inc.	BBB+	BBB+
Nextera	A-	A-
Royal Bank of Canada	AA-	AA-
Shell Trading Market Risk	A	A
Interest Rate Contracts:		
Barclays Bank PLC	A	A
Goldman Sachs Capital Markets, L.P. (J. Aron)	BBB+	BBB+
Morgan Stanley Capital Services, Inc.	A+	A+

NOTE 10. LONG-TERM DEBT

SMUD's total long-term debt is presented below:

	December 31, 2022	December 31, 2021
	(thousands of dollars)	
Electric revenue bonds, 2.13%-6.32%, 2023-2050	$ 1,841,715	$ 1,966,925
Subordinated electric revenue bonds, 5.0%, 2023-2049	200,000	200,000
Total electric revenue bonds	2,041,715	2,166,925
Component unit project revenue bonds, 5.0%, 2023-2030	89,735	101,185
Gas and Commodity supply revenue bonds, index rates and 4.0%-5.0%, 2023-2049	682,550	703,100
Total long-term debt outstanding	2,814,000	2,971,210
Bond premiums - net	210,039	242,647
Total long-term debt	3,024,039	3,213,857
Less: amounts due within one year	(138,195)	(132,150)
Total long-term debt - net	$ 2,885,844	$ 3,081,707

The summarized activity of SMUD's long-term debt during 2022 is presented below:

	January 1, 2022	Additions	Defeasance Payments or Amortization	December 31, 2022	Amounts Due Within One Year
	(thousands of dollars)				
Electric revenue bonds	$ 1,966,925	$ 132,725	$ (257,935)	$ 1,841,715	$ 111,165
Subordinate electric revenue bonds	200,000	-0-	-0-	200,000	-0-
Component unit project revenue bonds	101,185	-0-	(11,450)	89,735	1,845
Gas and Commodity supply revenue bonds	703,100	-0-	(20,550)	682,550	25,185
Total	2,971,210	132,725	(289,935)	2,814,000	$ 138,195
Unamortized premiums - net	242,647	17,986	(50,594)	210,039	
Total long-term debt	$ 3,213,857	$ 150,711	$ (340,529)	$ 3,024,039	

The summarized activity of SMUD's long-term debt during 2021 is presented below:

	January 1, 2021	Additions	Defeasance Payments or Amortization	December 31, 2021	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 2,085,120	$ 106,875	$ (225,070)	$ 1,966,925	$ 100,150
Subordinate electric revenue bonds	200,000	-0-	-0-	200,000	-0-
Component unit project revenue bonds	112,085	-0-	(10,900)	101,185	11,450
Gas and Commodity supply revenue bonds	721,550	-0-	(18,450)	703,100	20,550
Total	3,118,755	106,875	(254,420)	2,971,210	$ 132,150
Unamortized premiums - net	267,947	23,373	(48,673)	242,647	
Total long-term debt	$ 3,386,702	$ 130,248	$ (303,093)	$ 3,213,857	

At December 31, 2022 scheduled annual principal maturities and interest are as follows:

	Principal	Interest	Total
		(thousands of dollars)	
2023	$ 138,195	$ 139,057	$ 277,252
2024	139,330	129,638	268,968
2025	151,115	122,436	273,551
2026	157,575	113,645	271,220
2027	166,245	105,782	272,027
2028 – 2032 (combined)	536,515	429,877	966,392
2033 – 2037 (combined)	575,125	278,362	853,487
2038 – 2042 (combined)	403,785	158,167	561,952
2043 – 2047 (combined)	362,275	79,450	441,725
2048 – 2050 (combined)	183,840	13,131	196,971
Total requirements	$ 2,814,000	$ 1,569,545	$ 4,383,545

Interest in the preceding table includes interest requirements for fixed rate debt at their stated rates, variable rate debt covered by interest rate swaps at their fixed rate, and variable rate debt not covered by interest rate swaps using the debt interest rate of 70.0 percent of 1 month London Interbank Offered Rate (LIBOR) plus a fixed fee. The LIBOR rate is based on the rate in effect at December 31, 2022 for the issues. The 2019 Series A and 2019 Series B Put Bonds assume a 3.0 percent fixed rate coupon after mandatory remarketing. The 2018 NCEA Put Bonds assume a 4.0 percent fixed rate coupon after mandatory remarketing. Principal in the preceding table includes known principal payments and the amortization schedule for mandatory remarketing bonds.

The following bonds have been issued and are outstanding at December 31, 2022:

Date	Issue	Final Maturity	Interest Rate	Original Amount	Outstanding Amount
				(thousands of dollars)	
Electric Revenue Bonds					
06/15/1997	1997 Series K Bonds	07/01/2024	5.25%	$ 131,030	$ 38,165
05/15/2009	2009 Series V Bonds	05/15/2036	6.322%	200,000	200,000
07/29/2010	2010 Series W Bonds	05/15/2036	6.156%	250,000	250,000
05/21/2013	2013 Series A Bonds	08/15/2041	3.75% - 5.0%	132,020	132,020
05/21/2013	2013 Series B Bonds	08/15/2033	3.0% - 5.0%	118,615	81,820
07/14/2016	2016 Series D Bonds	08/15/2028	2.125% - 5.0%	149,890	104,060
12/14/2017	2017 Series E Bonds	08/15/2028	5.0%	202,500	111,585
07/12/2018	2018 Series F Bonds	08/15/2028	5.0%	165,515	103,245
07/25/2019	2019 Series G Bonds	08/15/2041	2.375% - 5.0%	191,875	191,875
05/07/2020	2020 Series H Bonds	08/15/2050	4.0% - 5.0%	400,000	400,000
07/14/2021	2021 Series I Bonds	08/15/2028	5.0%	106,875	96,220
06/23/2022	2022 Series J Bonds	08/15/2033	5.0%	132,725	132,725
Subordinated Electric Revenue Bonds					
07/25/2019	2019 Series A Bonds	08/15/2049	5.0%	100,000	100,000
07/25/2019	2019 Series B Bonds	08/15/2049	5.0%	100,000	100,000
JPA Revenue Bonds					
06/03/2015	2015 SFA Bonds	07/01/2030	5.0%	193,335	89,735
05/31/2007	2007B NCGA#1 Bonds	07/01/2027	Index Rate	668,470	142,935
12/19/2018	2018 NCEA Bonds	07/01/2049	4.0% - 5.0%	539,615	539,615

2022 Bond Issuances. In June 2022, SMUD issued $132.7 million of 2022 Series J Revenue Refunding Bonds. The purpose of this transaction was to refund the fixed rate debt associated with 2012 Series Y bonds. Proceeds from the 2022 Series J bonds combined with swap termination receipt defeased all the outstanding Series 2012 Series Y bonds. A total of $157.8 million of bonds were defeased through a legal defeasance, and accordingly, the liability for the defeased bonds has been removed from Long-Term Debt - net in the Statements of Net Position. The refunding resulted in the recognition of a deferred accounting gain of $6.7 million, which is being amortized over the life of the refunding issue. The 2022 refunding reduced future aggregate debt service payments by $30.9 million and resulted in a total economic gain of $28.6 million, which is the difference between the present value of the old and new debt service payments.

2021 Bond Issuances. In July 2021, SMUD issued $106.9 million of 2021 Series I Revenue Refunding Bonds. The purpose of this transaction was to refund the fixed rate debt associated with 2011 Series X bonds. Proceeds from the 2021 Series I bonds defeased all the outstanding Series 2011 Series X bonds and funded the associated swap termination payment. A total of $127.0 million of bonds were defeased through a legal defeasance, and accordingly, the liability for the defeased bonds has been removed from Long-Term Debt - net in the Consolidated Statements of Net Position. The refunding resulted in the recognition of a deferred accounting gain of $3.9 million, which is being amortized over the life of the refunding issue. The termination payments of the interest rate swaps are being amortized over the life of the refunding issue. The 2021 refunding reduced future aggregate debt service payments by $23.8 million and resulted in a total economic gain of $22.5 million, which is the difference between the present value of the old and new debt service payments.

Component Unit Bond Defeasances. In September 2019, SCA defeased $12.9 million of 2009 Series Bonds maturing July 2020 and July 2021, along with the accrued interest using SCA's available funds and $7.9 million from SMUD. The corresponding amount was placed in an irrevocable trust which had a remaining balance of $6.9 million as of December 31, 2020. In July 2021, the remaining balance was paid down to zero.

Terms of Debt Indentures. Debt indentures contain a provision that in an event of default, the holders of the majority of the debt outstanding are entitled to declare the outstanding amounts due immediately.

Interest Rate Swap Agreements. A summary of SMUD's four interest rate swap agreements as of December 31, 2022 are as follows. The credit ratings listed are from S&P.

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 38,165	Variable	5.166%	SIFMA	07/01/24	BBB+
68,450	Fixed	2.894%	63% of 1 M LIBOR	08/15/28	A+
132,020	Fixed	0.7179%	70% of 1M LIBOR	08/15/41	A
75,680	Fixed	0.5543%	70% of 1M LIBOR	08/15/33	A

A summary of SMUD's five interest rate swap agreements as of December 31, 2021 are as follows:

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 55,835	Variable	5.166%	SIFMA	07/01/24	BBB+
74,375	Fixed	2.894%	63% of 1 M LIBOR	08/15/28	A+
157,785	Fixed	1.607%	SIFMA	08/15/33	A+
132,020	Fixed	0.7179%	70% of 1M LIBOR	08/15/41	A
75,680	Fixed	0.5543%	70% of 1M LIBOR	08/15/33	A

At December 31, 2022 and 2021, SMUD had a fixed-to-variable interest rate swap agreement with a notional amount of $38.2 million and $55.8 million, respectively, which is equivalent to the principal amount of SMUD's 1997 Series K Electric Revenue Bonds. Under this swap agreement, SMUD pays a variable rate equivalent to the Securities Industry and Financial Markets Association (SIFMA) Index (3.66 percent and .10 percent at December 31, 2022 and 2021, respectively) and receives fixed rate payments of 5.166 percent as of December 31, 2022 and 2021. In connection with the swap agreement, SMUD has a put option agreement, also with a notional amount of $38.2 million and $55.8 million as of December 31, 2022 and 2021, respectively, which gives the counterparty the right to sell to SMUD, at par, either the 1997 Series K Bonds, or a portfolio of securities sufficient to defease the 1997 Series K Bonds. SMUD receives fixed rate payments of 0.01 percent as of December 31, 2022 and 2021, in connection with the put option agreement. The exercise of the option terminates the swap at no cost to SMUD. The term of both the swap and the put is equal to the maturity of the 1997 Series K Bonds.

At December 31, 2022 and 2021, SMUD had one variable-to-fixed interest rate swap agreement with a notional amount of $68.5 million and $74.4 million, respectively. This swap was originally entered into for the purpose of fixing the effective interest rate associated with certain of its subordinated bonds that were refunded during 2008. The notional value of the swap is amortized over the life of the swap agreement. SMUD can terminate the swap agreement at any time, with payment or receipt of the fair market value of the swap as of the date of termination. The obligations of SMUD under the swap agreement are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

Additionally, in June 2020, SMUD executed a variable-to-fixed interest rate swap agreement with Barclays Bank PLC with a notional amount of $132.0 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2013 Series A Bonds. The Barclays 2013 Series A swap becomes effective in July 2023. Also, in June 2020, SMUD executed a variable-to-fixed interest rate swap agreement with Barclays Bank PLC with a notional amount of $75.7 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2013 Series B Bonds. The Barclays 2013 Series B swap becomes effective in July 2023. The notional values of the two swaps are amortized over the life of their respective swap agreements. SMUD can terminate both swap agreements at any time, with payment or receipt of the fair market value of the swaps as of the date of termination. The obligations of SMUD under the swap agreements are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

In December 2019, SMUD executed a variable-to-fixed interest rate swap agreement with J. Aron with a notional amount of $127.0 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2011 Series X Bonds. The J. Aron swap became effective in July 2021. The J. Aron swap was terminated in July 2021. As part of the termination, SMUD made a termination payment to J. Aron in the amount of $3.0 million. Also, in December 2019, SMUD executed a variable-to-fixed interest rate swap agreement with Morgan Stanley Capital Services with a notional amount of $157.8 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2012 Series Y Bonds. The Morgan Stanley Capital Services swap was due to become effective in July 2022 but was terminated in June 2022.

Component Unit Interest Rate Swap Agreements. NCGA had one interest rate swap agreement as of December 31, 2022, which is summarized as follows. The credit ratings listed are from S&P.

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 142,935	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

NCGA had one interest rate swap agreement as of December 31, 2021, which are summarized as follows:

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 163,485	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

At December 31, 2022 and 2021, NCGA had a variable-to-fixed interest rate swap agreement with a counterparty for the purpose of fixing the effective interest rate associated with the 2007 Series B Bonds. NCGA pays the counterparty a fixed rate on the notional amount and receives a floating rate equal to 67 percent of the three-month LIBOR (4.77 percent and 0.10 percent at December 31, 2022 and 2021, respectively) plus an interest rate spread, as specified in the swap agreement. The total notional amount of the swap at December 31, 2022 and 2021 was $142.9 million and $163.5 million, respectively, and was equivalent to the outstanding principal balance on the NCGA Bonds. The swap is amortized over the life of the swap agreement in a manner corresponding to the principal repayment schedule of the NCGA Bonds. Early termination of the swap would occur upon termination of the prepaid agreement for any reason. Upon early termination, the swap would have no value to either party.

Subordinated Electric Revenue Bonds. Payment of and interest on the Subordinated Electric Revenue Bonds is subordinate to the payment of the principal and interest on SMUD's Electric Revenue Bonds.

Component Unit Bonds. The component units of SMUD have each issued bonds to finance their respective projects. The revenue stream to pay SFA bonds' debt service is provided by a "take-or-pay" power purchase agreement and is therefore not dependent on the successful operation of the project. SMUD guarantees to make payments sufficient to pay principal and interest and all other payments required to be made under SFA's indenture of trust. SFA is not required to repay SMUD for any amounts paid under this guarantee. The revenue stream to pay NCGA and NCEA bonds' debt service is provided by "take-and-pay" purchase agreements. Therefore, principal and interest associated with these bonds are paid solely from the revenues and receipts collected in connection with the operation of the project. Most operating revenues earned by NCGA and NCEA are collected from SMUD in connection with the sale of gas or electricity to SMUD. The ability for NCGA and NCEA to service debt is dependent on various parties (particularly MSCG, as gas supplier for NCGA and J. Aron, as commodity supplier for NCEA) meeting their contractual obligations.

Callable Bonds. SMUD has $488.8 million of Electric Revenue Bonds that are currently callable, $450.0 million of which are fixed rate Build America Bonds debt and $38.8 million of 2016 Series D Bonds. SMUD also has $207.7 million of bonds that become callable from 2023 through 2027, and these bonds can be called until maturity. SMUD also has a four-month call period on the 2019 Series A and 2019 Series B Bonds in advance of their mandatory remarketing purchase date in 2023 and 2025, respectively.

Collateral. The principal and interest on SMUD's bonds are payable exclusively from, and are collateralized by, a pledge of the net revenues of SMUD's electric system. Neither the credit nor the taxing power of SMUD is pledged to the payment of the bonds and the general fund of SMUD is not liable for the payment thereof.

Covenants. SMUD's bond resolutions contain various covenants that include requirements to maintain minimum debt service coverage ratios, certain other financial ratios, stipulated minimum funding of revenue bond reserves, and various other requirements including a rate covenant to raise rates to maintain minimum debt service coverage.

SMUD has pledged future net electric revenues, component unit net project revenues, and net gas supply prepayment revenues to repay, in electric revenue, component unit project revenue, and gas supply prepayment revenue bonds issued from 1997 through 2022. Proceeds from the bonds provided financing for various capital improvement projects, component unit capital projects, and the prepayments of a twenty-year supply of natural gas and a thirty-year supply of commodity. The bonds are payable solely from the net revenues generated by SMUD's electrical sales, component unit project revenues, and gas supply prepayment revenues and are payable through 2050 at December 31, 2022.

GASB Statement No. 48, ***"Sales and Pledges of Receivables and Future Revenues and Intra-Entity Transfers of Assets and Future Revenues,"*** disclosures for pledged revenues are as follows:

	December 31,	
	2022	2021
	(thousands of dollars)	
Pledged future revenues	$ 2,814,000	$ 2,971,210
Principal and interest payments for the year ended	$ 438,725	$ 404,679
Total net revenues for the year ended	$ 574,300	$ 720,414
Total remaining principal and interest to be paid	$ 4,383,545	$ 4,693,100
Annual principal and interest payments as a percent of net revenues for the year ended	76%	56%

NOTE 11. COMMERCIAL PAPER NOTES

SMUD issues Commercial Paper Notes (Notes) to finance or reimburse capital expenditures. SMUD's commercial paper program is $400.0 million. At December 31, 2022, there were $150.0 million Notes outstanding and at December 31, 2021, there were no Notes outstanding. SMUD's commercial paper program is backed by $407.4 million in letter of credit agreements (LOCs) and a revolving credit agreement with three separate banks. The LOCs are calculated as the sum of the maximum principal amount of the Notes plus interest thereon at a maximum rate of ten percent per annum for a period of 90 days calculated on the basis of a year of 365 days and the actual number of days elapsed. There have not been any term advances under the LOCs or the revolving credit agreement. The LOCs and revolving credit agreement contain a provision that in an event of default, the outstanding amounts may become immediately due.

The summarized activity of SMUD's Notes during 2022 and 2021 is presented below:

	Balance at Beginning of Year	Additions	Reductions	Balance at End of Year
	(thousands of dollars)			
December 31, 2022	$ -0-	$ 150,000	$ -0-	$ 150,000
December 31, 2021	$ -0-	$ -0-	$ -0-	$ -0-

NOTE 12. FAIR VALUE MEASUREMENT

GASB No. 72 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). SMUD utilizes market data or assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and the risks inherent in the inputs to the valuation technique.

GASB No. 72 establishes a fair value hierarchy that prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy defined by GASB No. 72 are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included in Level 1 that are observable for an asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs that reflect SMUD's own assumptions about factors that market participants would use in pricing the asset or liability.

The valuation methods of the fair value measurements are as follows:

- LAIF – uses the fair value of the pool's share price multiplied by the number of shares held. This pool can include a variety of investments such as U.S. government securities, federal agency securities, negotiable certificates of deposit, bankers' acceptances, commercial paper, corporate bonds, bank notes, and other investments. The fair values of the securities are generally based on quoted and/or observable market prices.
- U.S. Government Agency Obligations – uses a market based approach which considers yield, price of comparable securities, coupon rate, maturity, credit quality and dealer-provided prices.
- U.S. Treasury Obligations – uses a market approach based on institutional bond quotes. Evaluations are based on various market and industry inputs.
- Corporate Notes – uses a market based approach. Evaluations are based on various market and industry inputs.
- Municipal Bonds – uses a market approach based on institutional bond quotes. Evaluations are based on various market and industry inputs.
- Investment and Hedging Derivative Instruments (see Note 9):
  - Interest rate swap agreements – uses the present value technique. The fair value of the interest rate swap agreements are calculated by discounting the expected cash flows at their corresponding zero coupon rate. The cash flows and discount rates are estimated based on a 1-month LIBOR forward curve from Bloomberg and assuming SIFMA is equal to 70.0 percent of 1-month LIBOR.
  - Electricity and Gas related agreements – uses the market approach based on monthly quoted prices from an independent external pricing service. The fair values for natural gas and electricity derivative financial instruments are estimated by comparing contract prices to prevailing market quotes in active markets (i.e., Henry Hub and So Cal) where identical contracts are available. When external quoted market prices are not available, SMUD uses an internally developed valuation model utilizing short-term observable inputs.

The following tables identify the level within the fair value hierarchy that SMUD's financial assets and liabilities were accounted for on a recurring basis as of December 31, 2022 and 2021, respectively. As required by GASB No. 72, financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. SMUD's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of the fair value of liabilities and their placement within the fair value hierarchy levels.

Recurring Fair Value Measures	At fair value as of December 31, 2022		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 85,502	$ 85,502
U.S. Government Agency Obligations	-0-	371,241	371,241
U.S. Treasury Obligations	63,841	-0-	63,841
Corporate Notes	-0-	48,490	48,490
Municipal Bonds	-0-	49,909	49,909
Total Investments, including cash and cash equivalents	$ 63,841	$ 555,142	$ 618,983
Investment Derivative Instrument Assets:			
Gas related agreements	$ 6,199	$ -0-	$ 6,199
Total Investment Derivative Instrument Assets	$ 6,199	$ -0-	$ 6,199
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 200,941	$ -0-	$ 200,941
Interest rate swap agreements	-0-	36,083	36,083
Total Hedging Derivative Instrument Assets	$ 200,941	$ 36,083	$ 237,024
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 2,236	$ -0-	$ 2,236
Interest rate swap agreements	-0-	2,291	2,291
Total Investment Derivative Instrument Liabilities	$ 2,236	$ 2,291	$ 4,527
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 28,438	$ -0-	$ 28,438
Interest rate swap agreements	-0-	-0-	-0-
Total Hedging Derivative Instrument Liabilities	$ 28,438	$ -0-	$ 28,438

Recurring Fair Value Measures	At fair value as of December 31, 2021		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 526,297	$ 526,297
U.S. Government Agency Obligations	-0-	65,005	65,005
U.S. Treasury Obligations	39,993	-0-	39,993
Corporate Notes	-0-	3,975	3,975
Municipal Bonds	-0-	62,798	62,798
Total Investments, including cash and cash equivalents	$ 39,993	$ 658,075	$ 698,068
Investment Derivative Instrument Assets:			
Gas related agreements	$ 2,157	$ -0-	$ 2,157
Total Investment Derivative Instrument Assets	$ 2,157	$ -0-	$ 2,157
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 68,017	$ -0-	$ 68,017
Interest rate swap agreements	-0-	6,356	6,356
Total Hedging Derivative Instrument Assets	$ 68,017	$ 6,356	$ 74,373
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 245	$ -0-	$ 245
Interest rate swap agreements	-0-	7,298	7,298
Total Investment Derivative Instrument Liabilities	$ 245	$ 7,298	$ 7,543
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 19,020	$ -0-	$ 19,020
Interest rate swap agreements	-0-	3,580	3,580
Total Hedging Derivative Instrument Liabilities	$ 19,020	$ 3,580	$ 22,600

NOTE 13. ACCRUED DECOMMISSIONING LIABILITY

Asset Retirement Obligations (ARO). SMUD recognizes AROs for its Rancho Seco nuclear power plant facility and the CVFA power plant facility. This statement requires measurement of the ARO be based on the best estimate of the current value of outlays expected to be incurred. The best estimate should be determined using all available evidence and requires probability weighting of potential outcomes when sufficient evidence is available. This statement also requires the current value be adjusted for the effects of the general inflation or deflation and an evaluation of relevant factors that may significantly change the estimated asset retirement outlays at least annually.

Rancho Seco Nuclear Power Plant. With the completion of nuclear decommissioning of the former 913 MW nuclear power plant, and the subsequent termination of the 10 Code of Federal Regulations (CFR) 50 license by the Nuclear Regulatory Commission (NRC) effective August 31, 2018, all remaining Rancho Seco decommissioning liability relates to the Independent Spent Fuel Storage Installation (ISFSI) licensed under 10 CFR Part 72. Nuclear decommissioning is the process of safely removing nuclear facilities from service and reducing residual radioactivity to a level that permits termination of the NRC licenses and release of the property for unrestricted use. Final decommissioning of the ISFSI will occur after the spent nuclear fuel (SNF) and Greater Than Class C (GTCC) radioactive waste are removed from the site and SMUD demonstrates that the site is suitable for release in accordance with release criteria specified in 10 CFR 20, Subpart E and an approved License Termination Plan.

The Department of Energy (DOE), under the Nuclear Waste Policy Act (NWPA) of 1982 as amended, is responsible for permanent disposal of spent nuclear fuel and GTCC radioactive waste, which are currently stored in the Part 72 licensed ISFSI. SMUD has a contract with the DOE for the removal and disposal of SNF and GTCC waste. All SMUD's SNF and GTCC waste are currently stored in sealed canisters in the ISFSI. However, the date when DOE will remove the fuel and GTCC waste is uncertain. In 2010, the DOE formally withdrew the application for licensing of Yucca Mountain as a high-level waste repository. While the court-ordered reinstatement of NRC license review activities of Yucca Mountain have yielded generally positive results, Yucca Mountain remains speculative as a disposal option for SMUD's used nuclear fuel. The DOE also announced in January 2010 the creation of a Blue-Ribbon Commission to study alternatives for developing a repository for the nation's used nuclear fuel. The Commission provided a final report on alternatives in January 2012. The DOE evaluated the recommendations and published the report "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste" in January 2013.

The next phase of the process will be for Congress and the President of the United States to consider the recommendations and enact legislation to implement the recommendations. At this time, two license applications have been submitted to the NRC for the construction and operation of Consolidated Interim Storage Facility(s) that would store SNF and GTCC waste on an interim basis. One of these applications has been approved (and a license issued) and one application is currently under review by the NRC. Should the NRC license one or both facilities, Congress will have to modify the NWPA to allow for its use. In May 2018, the U.S. House of Representatives passed H.R. 3053 – the Nuclear Waste Policy Amendments Act, which was co-sponsored by Representative Doris Matsui and 109 other members of Congress. This bill includes a provision to allow a Consolidated Interim Storage Facility to store fuel from permanently shut down sites like Rancho Seco. The U.S. Senate did not act on the bill. Until legislation is passed which includes a significant step towards removal of the used nuclear fuel at the Rancho Seco facility, SMUD is committed to the safe and secure storage of its SNF and GTCC waste under its Part 72 license until DOE fulfills its obligation to dispose of this material in accordance with NWPA. In support of this commitment, SMUD submitted its ISFSI license renewal application to the NRC in March of 2018. The NRC issued Renewed Licensee No. SNM-2510 on March 9, 2020. This renewed license authorizes the continued storage of SMUD's SNF and GTCC until June 30, 2060.

The Rancho Seco decommissioning liability is based on an internal study of the remaining decommissioning costs, which consist of: 1) annual spent fuel management costs, 2) transportation of the canisters in the ISFSI and 3) termination of the Part 72 license. The largest part of the decommissioning estimate is the annual spent fuel management costs; next year's annual budget is used for the estimate. The other costs were estimated based on prior experience and studies and prepared by management representatives of the nuclear power plant facility. The costs in the estimate were in 2019 dollars. An employment cost index was used to adjust the other costs portion of the obligation for inflation in 2022. Probability weighting was assigned for two scenarios: 1) spent nuclear fuel will be removed from the site by 2028 and 2) spent nuclear fuel will be removed from the site by 2035. SMUD uses its Trust Fund (see Note 2) to demonstrate financial assurance to the NRC that there are enough funds to complete the termination of the Part 72 license; the balance of the Trust Fund at December 31, 2022 is $9.0 million.

SFA's Carson Power Plant (Carson). SFA's ground lease agreement with the Sacramento Regional County Sanitation District for Carson requires SFA to restore the premises to its original condition upon termination of the contract. A new study to determine the current value of the asset retirement obligation was conducted by an external contractor who specializes in decommissioning studies. The expected costs and scope of work were based on the most recent cost estimate and assumes a contractor will be responsible for the work and that decommissioning would take place between 2025 and 2027. The estimated costs were in 2018 dollars. The result of this study was used to determine the new balance of the ARO and the deferred outflows at January 1, 2018, in order to account for the 2018 activity. The annual All Urban Consumer Price Index was used to adjust this obligation for inflation in 2022. The remaining useful life of Carson's assets is three years at December 31, 2022.

The current portion of the Accrued Decommissioning liability represents SMUD's estimate of actual expenditures for Rancho Seco in the next year, as set forth in the annual budget.

At December 31, 2022 and 2021, SMUD's Accrued Decommissioning balance in the Statements of Net Position was $95.9 million and $95.1 million, respectively.

NOTE 14. PENSION PLANS

Summary of Significant Accounting Policies. For purposes of measuring net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the pension plans and additions to/deductions from the fiduciary net position have been determined on the same basis as they are reported by the California Public Employees' Retirement System (PERS) Financial Office. For this purpose, benefit payments (including refunds of employee contributions) are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description and Benefits Provided. SMUD participates in PERS, an agent multiple-employer public employee defined benefit pension plan (PERS Plan). PERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. PERS acts as a common investment and administrative agent for participating public entities within the State. Benefit provisions and all other requirements are established by State statute and SMUD policies. The pension plan provides retirement benefits, survivor benefits, and death and disability benefits based upon employee's years of credited service, age, and final compensation. A full description of the pension plan regarding number of employees covered, benefit provision, assumptions (for funding, but not accounting purposes), and membership information are included in the annual actuarial valuation reports as of June 30, 2021 and June 30, 2020.

GASB No. 68 requires that the reported results must pertain to liability and asset information within certain defined timeframes. The following timeframes are used for the year ended:

PERS Plan	December 31,	
	2022	2021
Valuation date	June 30, 2021	June 30, 2020
Measurement date	June 30, 2022	June 30, 2021

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms for the year ended:

PERS Plan	December 31,	
	2022	2021
Inactive employees or beneficiaries currently receiving benefit payments	3,116	3,068
Inactive employees entitled to but not yet receiving benefit payments	987	974
Active employees	2,168	2,214
Total employees covered by benefit terms	6,271	6,256

Contributions. Section 20814(c) of the California Public Employees' Retirement Law requires that the employer contribution rates for all public employers be determined on an annual basis by the actuary and shall be effective on the July 1 following notice of a change in the rate. The total plan contributions are determined through PERS' annual actuarial valuation process. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. The employer is required to contribute the difference between the actuarially determined rate and the contribution rate of employees. For the PERS fiscal years ended June 30, 2022 and 2021, the average active employee contribution rate is 6.8 percent of annual pay. For the PERS fiscal year ended June 30, 2022, the employer's contribution rate is 9.0 percent of annual payroll plus $36.3 million for the unfunded accrued liability contribution. For the PERS fiscal year ended June 30, 2021, the employer's contribution rate is 9.1 percent of annual payroll plus $33.5 million for the unfunded accrued liability contribution. Employer contribution rates may change if plan contracts are amended. For the fiscal years ended June 30, 2022 and 2021, SMUD made contributions recognized by the PERS Plan in the amount of $114.5 million and $229.4 million, respectively.

Net Pension Asset (NPA) or Liability (NPL). SMUD's NPA or NPL at December 31, 2022 and 2021 was measured at June 30, 2022 and 2021, respectively. The total pension liability used to calculate the NPA or NPL was determined by actuarial valuations as of June 30, 2021 and 2020 rolled forward using generally accepted actuarial procedures to the June 30, 2022 and 2021 measurement dates for the PERS Plan.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2022 and December 31, 2021 total pension liabilities are as follows for the PERS Plan:

December 31, 2022:

Actuarial Cost Method	Entry age actuarial cost method
Discount Rate	6.90%
Inflation	2.30%
Salary Increases	Varies by entry age and service
Mortality Rate Table	The mortality table used was developed based on PERS' specific data. The probabilities of mortality are based on the 2021 PERS' Experience Study for the period from 2001 to 2019. Pre-retirement and Post-retirement mortality rates include generational mortality improvement using the Society of Actuaries Scale 80% of scale MP-2020.
Post Retirement Benefit Increase	For 2022 and 2021, the lesser of contract COLA or 2.30% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.30% thereafter

December 31, 2021:

Actuarial Cost Method	Entry age normal
Discount Rate	7.15%
Inflation	2.50%
Salary Increases	Varies by entry age and service
Mortality Rate Table	The mortality table used was developed based on PERS' specific data. The probabilities of mortality are based on the 2017 PERS' Experience Study for the period from 1997 to 2015. Pre-retirement and Post-retirement mortality rates include 15 years of projected mortality improvement using the Society of Actuaries Scale 90% of scale MP-2016.
Post Retirement Benefit Increase	For 2021 and 2020, the lesser of contract COLA or 2.50% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.50% thereafter

Discount Rates. For the PERS Plan, the discount rate used to measure the total pension liability for the years ended December 31, 2022 and 2021 was 6.90 percent and 7.15 percent, respectively. For the year ended December 31, 2022, the projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on those assumptions, the PERS Plan was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. Using historical returns of all the funds' asset classes, expected compound (geometric) returns were calculated over the next 20 years using a building-block approach. The expected rate of return was then adjusted to account for assumed administrative expenses of 10 Basis points.

The expected real rates of return by asset class used for December 31, 2022 are as follows:

Asset Class	Assumed Asset Allocation	Real Return
Global Equity – Cap-weighted	30.0%	4.54%
Global Equity – Non-Cap-weighted	12.0%	3.84%
Private Equity	13.0%	7.28%
Treasury	5.0%	0.27%
Mortgage-backed Securities	5.0%	0.50%
Investment Grade Corporates	10.0%	1.56%
High Yield	5.0%	2.27%
Emerging Market Debt	5.0%	2.48%
Private Debt	5.0%	3.57%
Real Estate	15.0%	3.21%
Leverage	(5.0%)	(0.59%)

The expected real rates of return by asset class used for December 31, 2021 are as follows:

Asset Class	Current Target Allocation	Real Return Years 1-10	Real Return Years 11+
Global Equity	50.0%	4.80%	5.98%
Global Fixed Income	28.0%	1.00%	2.62%
Inflation Assets	0%	0.77%	1.81%
Private Equity	8.0%	6.30%	7.23%
Real Estate	13.0%	3.75%	4.93%
Liquidity	1.0%	0%	(0.92%)

Changes in the NPA or NPL. The following table shows the changes in NPA or NPL recognized over the year ended December 31, 2022:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2022	$ 2,486,667	$ 2,514,405	$ (27,738)
Changes recognized for the measurement period:			
Service cost	41,885	-0-	41,885
Interest	167,926	-0-	167,926
Changes in assumptions	26,275	-0-	26,275
Differences between expected and actual experience	(31,370)	-0-	(31,370)
Contributions - employer	-0-	114,476	(114,476)
Contributions - employee	-0-	18,096	(18,096)
Net investment income	-0-	(189,479)	189,479
Benefit payments	(137,603)	(137,603)	-0-
Administrative expense	-0-	(1,566)	1,566
Net changes	67,133	(196,076)	263,189
Balances at December 31, 2022	$ 2,553,780	$ 2,318,329	$ 235,451

The following table shows the changes in NPA or NPL recognized over the year ended December 31, 2021:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2021	$ 2,415,034	$ 1,945,214	$ 469,820
Changes recognized for the measurement period:			
Service cost	38,900	-0-	38,900
Interest	168,984	-0-	168,984
Changes in assumptions	-0-	-0-	-0-
Differences between expected and actual experience	(5,875)	-0-	(5,875)
Contributions - employer	-0-	229,440	(229,440)
Contributions - employee	-0-	17,552	(17,552)
Net investment income	-0-	454,518	(454,518)
Benefit payments	(130,376)	(130,376)	-0-
Administrative expense	-0-	(1,943)	1,943
Net changes	71,633	569,191	(497,558)
Balances at December 31, 2021	$ 2,486,667	$ 2,514,405	$ (27,738)

Sensitivity of the NPA or NPL to Changes in the Discount Rate. The following presents the NPA or NPL of the Plan as of the measurement date, calculated using the current discount rate, as well as what the NPA or NPL would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current discount rate:

PERS Plan	1% Decrease (5.90%)	Current Discount Rate (6.90%)	1% Increase (7.90%)
		(thousands of dollars)	
Plan's NPL (NPA), December 31, 2022	$ 562,974	$ 235,451	$ (36,397)
	1% Decrease (6.15%)	Current Discount Rate (7.15%)	1% Increase (8.15%)
Plan's NPL (NPA), December 31, 2021	286,474	(27,738)	(289,153)

Pension Plan Fiduciary Net Position. Detailed information about the PERS Plan's fiduciary net position is available in the separately issued PERS Plan financial statements. This report, the audited financial statements, and other reports can be obtained at the PERS' website at www.calpers.ca.gov.

Pension Expense or Income and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions. For the year ended December 31, 2022 SMUD recognized pension expense of $41.0 million and for the year ended December 31, 2021, SMUD recognized a credit to pension expense of $27.9 million.

At December 31, 2022 and 2021, SMUD reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	December 31,	
	2022	2021
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	19,866	-0-
Differences between expected and actual experience	2,495	9,710
Differences between projected and actual earnings on pension plan investments	121,257	-0-
Employer's contributions to the Plan subsequent to the measurement of total pension liability	31,860	71,624
Total deferred outflows of resources	$ 175,478	$ 81,334
Deferred inflows of resources:		
Changes of assumptions	$ -0-	$ -0-
Differences between expected and actual experience	26,656	4,406
Differences between projected and actual earnings on pension plan investments	-0-	225,301
Total deferred inflows of resources	$ 26,656	$ 229,707

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be subject to regulatory accounting as follows (see Note 8):

Year ended December 31:	
2023	$ 20,052
2024	15,538
2025	8,976
2026	72,396
2027	-0-
Thereafter	-0-

Other Plans. SMUD provides its employees with two cash deferred compensation plans: one pursuant to Internal Revenue Code (IRC) Section 401(k) (401(k) Plan) and one pursuant to IRC Section 457 (457 Plan) (collectively, the Plans). The Plans are contributory plans in which SMUD's employees contribute the funds. Each of SMUD's eligible full-time or permanent part-time employees may participate in either or both Plans, and amounts contributed are vested immediately. Such funds are held by a Trustee in trust for the employees upon retirement from SMUD service and, accordingly, are not subject to the general claims of SMUD's creditors. SMUD is responsible for ensuring compliance with IRC requirements concerning the Plans and has the fiduciary duty of reasonable care in the selection of investment alternatives, but neither SMUD, nor its Board or officers have any liability for market variations in the Plans' asset values. SMUD employees are responsible for determining how their funds are to be invested and pay all ongoing fees related to the Plans. The Plans are currently not subject to discrimination testing, nor the requirements of the Employee Retirement Income Security Act of 1974. SMUD employees participating in the Plans are allowed to contribute a portion of their gross income not to exceed the annual dollar limits prescribed by the IRC.

SMUD makes annual contributions to the 401(k) Plan on behalf of certain employees pursuant to a memorandum of understanding with both of its collective bargaining units. SMUD also matches non-represented employee contributions to the 401(k) Plan up to a set amount. SMUD made contributions into the 401(k) Plan of $7.0 million in 2022 and $6.1 million in 2021. SMUD does not match employee contributions, nor make contributions on behalf of its employees to the 457 Plan. Participating employees made contributions into both Plans totaling $32.4 million in 2022 and $30.6 million in 2021.

NOTE 15. OTHER POSTEMPLOYMENT BENEFITS

Summary of Significant Accounting Policies. For purposes of measuring the net OPEB asset or liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the OPEB plan and additions to/deductions from the OPEB plan's fiduciary net position have been determined on the same basis as they are reported by the California Employers' Retiree Benefit Trust (CERBT). For this purpose, SMUD recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description and Benefits Provided. SMUD is a member of CERBT. The CERBT Fund is an IRC Section 115 Trust set up for the purpose of receiving employer contributions to prefund OPEB for retirees and their beneficiaries. CERBT is an agent multiple-employer defined benefit OPEB plan (OPEB Plan) administered by PERS. The OPEB Plan provides medical, dental and long-term disability benefits for retirees and their beneficiaries, in accordance with SMUD policy and negotiated agreements with employee representation groups. The benefit, benefit levels, retiree contributions and employer contributions are governed by SMUD and can be amended by SMUD through its personnel manual and union contracts. Any changes to these benefits would be approved by SMUD's Board and unions.

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms:

	December 31,	
	2022	2021
Inactive employees or beneficiaries currently receiving benefit payments	2,349	2,302
Inactive employees entitled to but not yet receiving benefit payments	46	42
Active employees	2,144	2,114
Total employees covered by benefit terms	4,539	4,458

Contributions. OPEB contributions are elective and not required. In December 2018, SMUD split its CERBT assets across two asset strategies to better align trust assets with liabilities (Strategy 1 for active employees and retirements after June 30, 2018 and Strategy 3 for retirements before July 1, 2018). SMUD contributes the normal cost to the CERBT, but annually receives reimbursement for cash benefit payments from the CERBT. SMUD may also elect to put additional contributions into the OPEB Plan. For the OPEB Plan's fiscal years ended June 30, 2022 and 2021, SMUD made contributions recognized by the OPEB Plan in the amounts of $0.9 million and $0.8 million, respectively.

Net OPEB Asset (NOA) or Liability (NOL). SMUD's NOL at December 31, 2022 and NOA at December 31, 2021 were measured as of June 30, 2022 and 2021, respectively, and the total OPEB liability used to calculate the NOA/NOL was determined by actuarial valuations as of those dates.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2022 and December 31, 2021 total OPEB liabilities are as follows:

Discount Rate	5.88% (2022). Blended discount rate based on projected benefit streams expected to be paid from each Strategy. 5.84% (2021)
Inflation	2.50% (2022 and 2021)
Salary Increases	Aggregate – 2.75%; Merit - PERS 2000-2019 Experience Study (2022); PERS 1997-2015 Experience Study (2021)
Mortality, Retirement, Disability, Termination	PERS 2000-2019 Experience Study (2022); PERS 1997-2015 Experience Study (2021)
Mortality Improvement	Mortality projected fully generational with Scale MP-21 (2022), MP-20 (2021)
Healthcare Cost Trend Rates	Non-Medicare: 6.25% for 2024, decreasing to an ultimate rate of 3.75% in 2076 (2022); 6.5% for 2022, decreasing to an ultimate rate of 3.75% in 2076 (2021) Medicare: 5.45% for 2024, decreasing to an ultimate rate of 3.75% in 2076 (2022); 5.65% for 2022, decreasing to an ultimate rate of 3.75% in 2076 (2021) Kaiser Medicare: 4.45% for 2024, decreasing to an ultimate rate of 3.75% in 2076 (2022); 4.6% for 2022, decreasing to an ultimate rate of 3.75% in 2076 (2021)

Discount Rates. For the OPEB Plan, the discount rate used to measure the total OPEB liability was 5.88 percent and 5.84 percent for the years ended December 31, 2022 and 2021, respectively. This rate is a blended discount rate based on projected benefit streams expected to be paid from Strategies 1 and 3. The projection of cash flows used to determine the discount rate assumed that SMUD contributes the full normal cost to the trust and only takes reimbursement from the trust of the cash benefit payments. Because the implied subsidy benefit payments have a larger present value than the payments toward the unfunded accrued liability, there should be sufficient plan assets to pay all benefits from the trust. Based on those assumptions, the OPEB Plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees. The long-term expected rate of return of 6.25percent for Strategy 1 and 5.25 and 4.75 percent for Strategy 3 was applied to all periods of projected benefit payments to determine the total OPEB liability for the years ended December 31, 2022 and 2021, respectively.

The expected real rates of return by asset class used and presented as geometric means for December 31, 2022 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	49.0%	4.56%
Long US Treasuries	5.1%	0.29%
Mortgage-Backed Securities	5.1%	0.49%
Investment Grade Corporates	3.9%	1.56%
High Yield	3.9%	3.00%
Sovereigns	5.1%	2.76%
TIPS	5.0%	(0.08%)
Commodities	3.0%	1.22%
REITS	20.0%	4.06%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	23.0%	4.56%
Long US Treasuries	11.2%	0.29%
Mortgage-Backed Securities	11.2%	0.49%
Investment Grade Corporates	8.7%	1.56%
High Yield	8.7%	3.00%
Sovereigns	11.2%	2.76%
TIPS	9.0%	(0.08%)
Commodities	3.0%	1.22%
REITS	14.0%	4.06%

The expected real rates of return by asset class used and presented as geometric means for December 31, 2021 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	59%	4.56%
Fixed Income	25%	0.78%
TIPS	5%	(0.08%)
Commodities	3%	1.22%
REITS	8%	4.06%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	22%	4.56%
Fixed Income	49%	0.78%
TIPS	16%	(0.08%)
Commodities	5%	1.22%
REITS	8%	4.06%

Changes in the NOA or NOL. The following table shows the changes in NOA or NOL recognized over the year ended December 31, 2022:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2022	$ 392,519	$ 450,051	$ (57,532)
Changes recognized for the measurement period:			
Service cost	8,744	-0-	8,744
Interest	22,728	-0-	22,728
Changes in assumptions	(7,127)	-0-	(7,127)
Differences between expected and actual experience	(12,231)	-0-	(12,231)
Contributions - employer	-0-	860	(860)
Net investment income	-0-	(52,917)	52,917
Benefit payments	(24,169)	(24,169)	-0-
Administrative expense	-0-	(114)	114
Net changes	(12,055)	(76,340)	64,285
Balances at December 31, 2022	$ 380,464	$ 373,711	$ 6,753

The following table shows the changes in in NOA or NOL recognized over the year ended December 31, 2021:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2021	$ 396,209	$ 396,979	$ (770)
Changes recognized for the measurement period:			
Service cost	8,426	-0-	8,426
Interest	25,008	-0-	25,008
Changes in assumptions	5,895	-0-	5,895
Differences between expected and actual experience	(18,938)	-0-	(18,938)
Contributions - employer	-0-	818	(818)
Net investment income	-0-	76,479	(76,479)
Benefit payments	(24,081)	(24,081)	-0-
Administrative expense	-0-	(144)	144
Net changes	(3,690)	53,072	(56,762)
Balances at December 31, 2021	$ 392,519	$ 450,051	$ (57,532)

Sensitivity of the NOA or NOL to Changes in the Discount Rate. The following presents the NOA or NOL of SMUD as of the measurement date, calculated using the current discount rate, as well as what the NOA or NOL would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current discount rate:

	1% Decrease (4.88%)	Current Discount Rate (5.88%)	1% Increase (6.88%)
		(thousands of dollars)	
NOL/(NOA), December 31, 2022	$ 52,612	$ 6,753	$ (31,557)

	1% Decrease (4.84%)	Current Discount Rate (5.84%)	1% Increase (6.84%)
		(thousands of dollars)	
(NOA), December 31, 2021	$ (9,249)	$ (57,532)	$ (97,772)

Sensitivity of the NOA or NOL to Changes in the Healthcare Cost Trend Rates. The following presents the NOA or NOL of SMUD as of the measurement date, calculated using the current healthcare cost trend rate, as well as what the NOA or NOL would be if it were calculated using a healthcare cost trend rate that is 1 percentage-point lower or 1 percentage-point higher than the current healthcare trend rate (see assumptions above for healthcare trend rate):

	1% Decrease	Current Healthcare Trend Rate	1% Increase
		(thousands of dollars)	
(NOA)/ NOL, December 31, 2022	$ (35,780)	$ 6,753	$ 58,812
(NOA), December 31, 2021	$ (102,004)	$ (57,532)	$ (3,060)

OPEB Plan Fiduciary Net Position. Detailed information about the OPEB Plan's fiduciary net position is available in the separately issued OPEB Plan's report. This report can be obtained at the PERS' website at www.calpers.ca.gov.

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB. For the years ended December 31, 2022 and 2021, SMUD recognized a credit to OPEB expense of $8.2 million and $18.8 million, respectively.

At December 31, 2022 and 2021, SMUD reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	December 31,	
	2022	2021
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	$ 8,919	$ 13,132
Differences between projected and actual earnings on OPEB plan investments	32,477	-0-
Employer's contributions to the OPEB Plan subsequent to the measurement of total OPEB liability	12,278	11,981
Total deferred outflows of resources	$ 53,674	$ 25,113
Deferred inflows of resources:		
Changes of assumptions	$ 11,428	$ 7,504
Differences between expected and actual experience	38,410	48,300
Differences between projected and actual earnings on OPEB plan investments	-0-	39,098
Total deferred inflows of resources	$ 49,838	$ 94,902

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be subject to regulatory accounting as follows (see Note 8):

Year ended December 31:		
2023	$	(5,788)
2024		(4,849)
2025		(5,472)
2026		10,337
2027		(2,670)
Thereafter		-0-

NOTE 16. INSURANCE PROGRAMS AND CLAIMS

SMUD is exposed to various risks of loss related to torts, theft of and destruction to assets, errors and omissions, cyber activities, natural disasters, employee injuries and illnesses, and other exposures. SMUD carries commercial insurance coverage to cover most claims in excess of specific dollar thresholds, ranging from $5.0 thousand to $5.0 million per claim. General liability limits are $140.0 million, excess of a $5.0 million self-insured retention. As of December 31, 2022, wildfire liability limits are $255.0 million ($192.5 million commercial insurance plus $62.5 million self-insured retention). As of December 31, 2021, SMUD had $176.0 million commercial coverage plus $74.0 million self-insured retention within a $250.0 million total program value. SMUD's property insurance coverage is based on the replacement value of the asset. There have been no significant reductions in insurance coverage. In 2022, 2021, and 2020, the insurance policies in effect have adequately covered all settlements of the claims against SMUD. No claims have exceeded the limits of property or liability insurance in any of the past three years. In 2022, SMUD filed a partial claim under business interruption insurance for the Cosumnes Power Plant outage and received a $50.0 million advance on that claim in 2022.

The claims liability is included as a component of Self Insurance and Other in the Statements of Net Position.

SMUD's total claims liability, comprising claims received and claims incurred but not reported, at December 31, 2022, 2021 and 2020 is presented below:

	2022	2021	2020
		(thousands of dollars)	
Workers' compensation claims	$ 7,554	$ 8,666	$ 9,166
General and auto claims	3,178	3,596	3,766
Short and long-term disability claims	58	47	92
Claims liability	$ 10,790	$ 12,309	$ 13,024

Changes in SMUD's total claims liability during 2022, 2021 and 2020 are presented below:

	2022	2021	2020
		(thousands of dollars)	
Claims liability, beginning of year	$ 12,309	$ 13,024	$ 14,073
Add: provision for claims, current year	1,556	1,450	1,419
(Decrease) increase in provision for claims in prior years	1,826	(122)	(8)
Less: payments on claims attributable to current and prior years	(4,901)	(2,043)	(2,460)
Claims liability, end of year	$ 10,790	$ 12,309	$ 13,024

NOTE 17. COMMITMENTS

Electric Power and Gas Supply Purchase Agreements. SMUD has numerous power purchase agreements with other power producers to purchase capacity, transmission, and associated energy to supply a portion of its load requirements. SMUD has minimum take-or-pay commitments for energy on some contracts. SMUD has numerous long-term natural gas supply, gas transportation and gas storage agreements with Canadian and U.S. companies to supply a portion of the consumption needs of SMUD's natural gas-fired power plants.

At December 31, 2022, the approximate minimum obligations for the "take-or-pay" contracts over the next five years are as follows:

	Electric	Gas
	(thousands of dollars)	
2023	$ 71,863	$ 10,238
2024	58,905	7,588
2025	46,634	5,633
2026	47,111	4,234
2027	47,489	4,273

At December 31, 2022, the approximate minimum obligations for the remaining contracts, assuming the energy or gas is delivered over the next five years, are as follows:

	Electric	Gas
	(thousands of dollars)	
2023	$ 289,097	$ 215,951
2024	306,551	135,011
2025	294,714	108,226
2026	277,785	48,798
2027	219,986	44,590

Contractual Commitments beyond 2027 - Electricity. Several of SMUD's purchase power and transmission contracts extend beyond the five-year summary presented above. These contracts expire between 2028 and 2054 and provide for power under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $48.0 million in 2028 and $21.0 million in 2054. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the energy is delivered, ranges between $221.3 million in 2028 and $29.0 million in 2050. SMUD's largest purchase power source (in volume) is the Calpine Sutter contract, where SMUD has contracted ownership of 258 MW's of thermal generation capacity. The Calpine Sutter contract expires on December 31, 2026.

Contractual Commitments beyond 2027 - Gas. Several of SMUD's natural gas supply, gas transportation and gas storage contracts extend beyond the five-year summary presented above. These contracts expire between 2028 and 2049 and provide for transportation and storage under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $4.3 million in 2028 and $2.7 million in 2049. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the gas is delivered, ranges between $40.7 million in 2028 and $11.7 million in 2049.

Gas Price Swap Agreements. SMUD has entered into numerous variable-to-fixed rate swaps with notional amounts totaling 99,222,500 Dths for the purpose of fixing the rate on SMUD's natural gas purchases for its gas-fueled power plants and gas indexed electric contracts. These gas price swap agreements result in SMUD paying fixed rates ranging from $2.319 to $4.161 per Dth. The swap agreements expire periodically from January 2023 through December 2026.

Gas Transport Capacity Agreements. SMUD has numerous long-term natural gas transport capacity agreements with Canadian and U.S. companies to transport natural gas to SMUD's natural gas-fired power plants from the supply basins in

Alberta to the California-Oregon border and from supply basins in the southwest and Rocky Mountains to the Southern California border. These gas transport capacity agreements provide for the delivery of gas into SMUD-owned pipeline capacity within California. The gas transport capacity agreements provide SMUD with 53,265 Dth per day (Dth/d) of natural gas pipeline capacity from the North, including the Canadian Basins through 2023 and 39,710 Dth/d from the Southwest or Rocky Mountain Basins through at least 2023.

Gas Storage Agreements. SMUD also has an agreement for the storage of up to 2.0 million Dth of natural gas at regional facilities through March 2023, dropping to 1.0 million Dth through March 2026.

Hydro License Agreements. SMUD has a hydro license for a term of 50 years effective July 1, 2014 (see Note 2). SMUD entered into four contracts with government agencies whereby SMUD makes annual payments to them for various services for the term of the license. Each contract is adjusted annually by an inflation index. The present value of the sum of the annual payments is $58.5 million at December 31, 2022.

Construction Contracts. SMUD has entered into various construction contracts for the construction of a new substation, control building, and improvements to the Union Valley bike trail in the UARP. As of December 31, 2022, the not-to-exceed price for these contracts totaled $235.8 million. The remaining contract obligations for these contracts as of December 31, 2022 was $191.1 million.

NOTE 18. CLAIMS AND CONTINGENCIES

FERC Administrative Proceedings. SMUD is involved in a number of FERC administrative proceedings related to the operation of wholesale energy markets, regional transmission planning, gas transportation, and the development of NERC reliability standards. While these proceedings are complex and numerous, they generally fall into the following categories: (i) filings initiated by the California Independent System Operator Corporation (CAISO) (or other market participants) to adopt/modify the CAISO Tariff and/or establish market design and behavior rules; (ii) filings initiated by existing transmission owners (i.e., PG&E and the other Investor Owned Utilities) to pass through costs to their existing wholesale transmission customers; (iii) filings initiated by FERC on market participants to establish market design and behavior rules or to complain about or investigate market behavior by certain market participants; (iv) filings initiated by transmission owners under their transmission owner tariffs for the purpose of establishing a regional transmission planning process; (v) filings initiated by providers of firm gas transportation services under the Natural Gas Act; and (vi) filings initiated by NERC to develop reliability standards applicable to owners, users, and operators of the bulk electric system. In addition, SMUD is an active participant in other FERC administrative proceedings, including those related to reliability and cybersecurity standards, variable resource integration, and transmission planning and cost allocation. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Environmental Matters. SMUD was one of many potentially responsible parties that had been named in a number of actions relating to environmental claims and/or complaints. SMUD has resolved these environmental claims and/or complaints and entered into settlement agreements and/or consent orders. These settlement agreements and consent orders have statutory reopener provisions which allow regulatory agencies to seek additional funds for environmental remediation under certain limited circumstances. While SMUD believes it is unlikely that any of the prior settlements or consent orders will be reopened, the possibility exists. If any of the settlements or consent orders were to be reopened, SMUD management does not believe that the outcome will have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Other Matters. Currently, SMUD is party to various claims, legal actions and complaints relating to its operations, including but not limited to: property damage and personal injury, contract disputes, torts, and employment matters. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

NOTE 19. SUBSEQUENT EVENTS

SMUD evaluated subsequent events through February 24, 2023, the date that the financial statements were available to be issued, for events requiring recording or disclosure in the financial statements. In January 2023, SMUD experienced a series of winter storms that brought heavy rains and high winds causing significant damage to SMUD's grid and widespread outages for SMUD's customers. By the time the storm response was complete, SMUD had experienced the largest mobilization of personnel and restoration crews in its history. SMUD incurred costs related to removing downed trees, restoring power from downed poles and broken lines, replenishing inventory, communicating with and providing assistance to customers, maintaining IT systems, and coordinating with local emergency agencies. SMUD is pursuing claims with Federal and State agencies.

Required Supplementary Information – Unaudited
For the Years Ended December 31, 2022 and 2021

Schedule of Changes in Net Pension Liability and Related Ratios
During the Measurement Period - PERS Plan

	December 31,								
	2022	2021	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)								
Total pension liability:									
Service cost	$ 41,885	$ 38,900	$ 38,901	$ 38,061	$ 36,029	$ 35,040	$ 29,044	$ 27,991	$ 28,170
Interest	167,926	168,984	164,044	157,976	151,354	150,119	147,497	142,468	137,546
Changes of assumptions	26,275	-0-	-0-	-0-	(61,585)	123,043	-0-	(34,228)	-0-
Differences between expected and actual experience	(31,370)	(5,875)	9,981	18,877	1,293	(29,276)	(8,357)	(10,613)	-0-
Benefit payments, including refunds of employee contributions	(137,603)	(130,376)	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Net change in total pension liability	67,113	71,633	87,345	97,366	15,328	174,498	69,029	30,982	75,541
Total pension liability, beginning of year	2,486,667	2,415,034	2,327,689	2,230,323	2,214,995	2,040,497	1,971,468	1,940,486	1,864,945
Total pension liability, end of year (a)	$ 2,553,780	$ 2,486,667	$ 2,415,034	$ 2,327,689	$ 2,230,323	$ 2,214,995	$ 2,040,497	$ 1,971,468	$ 1,940,486
Plan fiduciary net position:									
Contributions - employer	$ 114,476	$ 229,440	$ 98,344	$ 69,119	$ 90,141	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions - employee	18,096	17,552	18,095	17,411	16,832	15,845	15,271	14,503	15,346
Net investment income	(189,479)	454,518	92,534	115,867	138,739	171,596	8,316	35,797	245,659
Benefit payments, including refunds of employee contributions	(137,603)	(130,376)	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Administrative expense	(1,566)	(1,943)	(2,628)	(1,270)	(7,474)	(2,275)	(969)	(1,795)	(2,028)
Other miscellaneous income/(expense)	-0-	-0-	-0-	4	(4)	-0-	34	(25)	-0-
Net change in plan fiduciary net position	(196,076)	569,191	80,764	83,583	126,471	113,127	(48,858)	(23,657)	190,313
Plan fiduciary net position, beginning of year	2,514,405	1,945,214	1,864,450	1,780,867	1,654,396	1,541,269	1,590,127	1,613,784	1,423,471
Plan fiduciary net position, end of year (b)	$ 2,318,329	$ 2,514,405	$ 1,945,214	$ 1,864,450	$ 1,780,867	$ 1,654,396	$ 1,541,269	$ 1,590,127	$ 1,613,784
Net pension liability/(asset), ending (a) - (b)	$ 235,451	$ (27,738)	$ 469,820	$ 463,239	$ 449,456	$ 560,599	$ 499,228	$ 381,341	$ 326,702
Plan fiduciary net position as a percentage of the total pension liability	90.8%	101.1%	80.5%	80.1%	79.8%	74.7%	75.5%	80.7%	83.2%
Covered payroll	$ 256,965	$ 257,613	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Net pension liability/(asset) as a percentage of covered payroll	91.6%	-10.8%	184.4%	187.0%	190.5%	250.6%	241.0%	193.1%	170.7%

PERS Plan. The schedule of changes in NPL/NPA and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule:

Benefit Changes: The figures above do not include any liability impact that may have resulted from plan changes which occurred after the June 30, 2021 valuation date. This applies for voluntary benefit changes as well as any offers of two years additional service credit.

Changes in Assumptions: Effective with the June 30, 2021 valuation date (2022 measurement date), the accounting discount rate was reduced from 7.15% to 6.90%. In determining the long-term expected rate of return, CalPERS took into account long-term market return expectations as well as the expected pension fund cash flows. Projected returns for all asset classes are estimated, combined with risk estimates, and are used to project compound (geometric) returns over the long term. The discount rate used to discount liabilities was informed by the long-term projected portfolio return. In addition, demographic assumptions and the inflation rate assumption were changed in accordance with the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. The accounting discount rate was 7.15% for measurement dates 2017 through 2021, 7.65% for measurement dates 2015 through 2016, and 7.50% for measurement date 2014.

Schedule of Plan Contributions for Pension – PERS Plan

	2022	2021	2020	2019	December 31, 2018	2017	2016	2015	2014
					(thousands of dollars)				
Actuarially determined contribution	$ 44,599	$ 54,315	$ 52,276	$ 49,119	$ 40,142	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions in relation to the actuarially determined contribution	(114,476)	(229,440)	(98,344)	(69,119)	(90,142)	(32,389)	(27,645)	(22,499)	(21,511)
Contribution excess	$ (69,877)	$ (175,125)	$ (46,068)	$ (20,000)	$ (50,000)	$ -0-	$ -0-	$ -0-	$ -0-
Covered payroll	$ 256,965	$ 257,613	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Contributions as a percentage of covered payroll	44.5%	89.1%	38.6%	27.9%	38.2%	14.5%	13.4%	11.4%	11.2%

PERS Plan. The schedule of pension contributions is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule

The actuarial methods and assumptions used to set the actuarially determined contributions for the year ended December 31, 2022 was derived from the June 30, 2019 funding valuation report.

Actuarial cost method	Entry age Actuarial Cost Method
Amortization method/period	For details, see June 30, 2019 Funding Valuation Report
Asset valuation method	Fair value of assets. For details, see June 30, 2019 Funding Valuation Report
Inflation	2. 5%
Salary increases	Varies by entry age and service
Payroll growth	2.75%
Investment rate of return	7.00% Net of pension plan investment and administrative expenses; includes inflation
Retirement age	The probabilities of retirement are based on the 2017 PERS Experience Study for the period from 1997 to 2015
Mortality	The probabilities of mortality are based on the 2017 PERS Experience Study for the period from 1997 to 2015. Pre-retirement and post-retirement mortality rates include 15 years of projected mortality improvement using Scale MP-2016 published by the Society of Actuaries.

In 2021, the investment rate of return was 7.00%. In 2020, the investment rate of return was 7.25%. Prior to 2020, the probabilities of mortality are based on the 2014 PERS Experience Study for the period from 1997 to 2011. Pre-retirement and post-retirement mortality rates include 20 years of projected mortality improvement using Scale BB published by the Society of Actuaries. Prior to 2017, the retirement age and mortality assumptions were based on the 2010 PERS Experience Study for the period from 1997 to 2007. In addition, the mortality assumption for pre-retirement and post-retirement rates included 5 years of projected mortality improvement using Scale AA published by the Society of Actuaries.

Schedule of Changes in Net OPEB Asset or Liability and Related Ratios During the Measurement Period

OPEB. The schedule of changes in NOA or NOL and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

	December 31,					
	2022	2021	2020	2019	2018	2017
	(thousands of dollars)					
Total OPEB liability:						
Service cost	$ 8,744	$ 8,426	$ 8,903	$ 8,946	$ 9,263	$ 8,993
Interest on total OPEB liability	22,728	25,008	26,653	26,766	29,656	28,676
Changes of assumptions	(7,127)	5,895	(11,453)	15,332	3,105	-0-
Differences between expected and actual experience	(12,231)	(18,938)	(23,529)	(6,885)	(59,921)	-0-
Benefit payments	(24,169)	(24,081)	(23,848)	(24,521)	(24,672)	(22,192)
Net change in total OPEB liability	(12,055)	(3,690)	(23,274)	19,638	(42,569)	15,477
Total OPEB liability, beginning of year	392,519	396,209	419,483	399,845	442,414	426,937
Total OPEB liability, end of year (a)	$ 380,464	$ 392,519	$ 396,209	$ 419,483	$ 399,845	$ 442,414
Plan fiduciary net position:						
Contributions - employer	$ 860	$ 818	$ 13,299	$ 13,963	$ 34,243	$ 114,573
Net investment income	(52,917)	76,479	20,447	20,132	27,295	24,104
Benefit payments	(24,169)	(24,081)	(23,848)	(24,521)	(24,672)	(22,192)
Administrative expense	(114)	(144)	(191)	(81)	(635)	(123)
Net change in plan fiduciary net position	(76,340)	53,072	9,707	9,493	36,231	116,362
Plan fiduciary net position, beginning of year	450,051	396,979	387,272	377,779	341,548	225,186
Plan fiduciary net position, end of year (b)	$ 373,711	$ 450,051	$ 396,979	$ 387,272	$ 377,779	$ 341,548
Net OPEB (asset) or liability, ending (a) - (b)	$ 6,753	$ (57,532)	$ (770)	$ 32,211	$ 22,066	$ 100,866
Plan fiduciary net position as a percentage of the total OPEB liability	98.2%	114.7%	100.2%	92.3%	94.5%	77.2%
Covered payroll	$ 301,746	$ 289,014	$ 287,001	$ 282,993	$ 269,753	$ 252,211
Net OPEB (asset) or liability as a percentage of covered payroll	2.2%	-19.9%	-0.3%	11.4%	8.2%	40.0%

Notes to Schedule

Benefit Changes: There were no changes to benefits.

Changes in Assumptions: In 2022, the long-term rate of return for Strategy 3 was updated based on newer target asset allocation, the discount rate was updated based on crossover test, the demographic assumptions were updated to CalPERS 2000-2019 Experience Study, and the mortality improvement scale was updated to Scale MP-2021. In 2021, the discount rate was updated due to weighting of Strategy 1 and Strategy 3 and updated capital market assumptions, the mortality improvement scale was updated to Scale MP-2020, the inflation rate was changed to 2.5% and the implied subsidy was removed for Medicare Advantage Plans. In 2020, the discount rate reflected the split of assets between Strategy 1 and Strategy 3, the mortality improvement scale was updated to Scale MP-2019, and the Kaiser Medicare trend rates were updated.

Schedule of Plan Contributions for OPEB

OPEB Plan. The schedule of OPEB contributions is presented below for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

	December 31,					
	2022	2021	2020	2019	2018	2017
	(thousands of dollars)					
Actuarially determined contribution	$ 5,425	$ 8,661	$ 12,201	$ 10,710	$ 15,366	$ 16,472
Contributions in relation to the actuarially determined contribution	(1,157)	(853)	(13,233)	(13,155)	(35,128)	(116,181)
Contribution deficiency (excess)	$ 4,268	$ 7,808	$ (1,032)	$ (2,445)	$ (19,762)	$ (99,709)
Covered payroll	$ 318,094	$ 285,425	$ 289,552	$ 286,835	$ 277,193	$ 260,210
Contributions as a percentage of covered payroll	0.4%	0.3%	4.6%	4.6%	12.7%	44.6%

Notes to Schedule

The actuarial methods and assumptions used to set the actuarially determined contributions for the year ended December 31, 2022 were derived from the June 30, 2021 funding valuation report.

Actuarial cost method	Entry age normal
Amortization method	Level percent of pay
Amortization period	24-year fixed period for 2022
Asset valuation method	Market value of assets
Discount rate	6.25% for all actives and retirements after 6/30/2018, 5.0% for all retirements before 6/30/2018
Inflation	2.5%
Medical trend	Non-Medicare: 6.5% for 2023, decreasing to an ultimate rate of 3.75% in 2076 Medicare (Non-Kaiser): 5.65% for 2023, decreasing to an ultimate rate of 3.75% in 2076 Medicare (Kaiser): 4.6% for 2023, decreasing to an ultimate rate of 3.75% in 2076
Mortality	PERS 1997-2015 experience study
Mortality improvement	Post-retirement mortality projected fully generational with Scale MP-20

In 2022, the amortization period was for a 24-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-20. In 2021, the amortization period was for a 25-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-19. In 2020, the amortization period was for a 26-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-18. In 2019, the amortization period was for a 27-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-17. In 2018, the amortization period was for a 28-year fixed period. Mortality assumption used PERS 1997-2011 experience study. The mortality improvement projected fully generational with Scale MP-16. In 2017, the amortization period was for a 29-year fixed period. The inflation rate was 3.0% and the discount rate was 7.25%. The mortality projected fully generational with Scale MP-14, modified to converge in 2022.

Appendix I

Historical Adopted Rate Increases

Year	Rate Increase	
	Residential	Non-Residential
2000	0.00%	0.00%
2001	13.00%	21.00%*
2002	0.00%	0.00%
2003	0.00%	0.00%
2004	0.00%	0.00%
2005	6.00%	6.00%
2006	0.00%	0.00%
2007	0.00%	0.00%
2008	7.00%	7.00%
2009	5.50%	5.50%
2010	5.50%	5.50%
2011	2.25%	2.25%
2012	0.00%	0.00%
2013	0.00%	0.00%
2014	2.50%	2.50%
2015	2.50%	2.50%
2016	2.50%	2.50%
2017	2.50%	2.50%
2018	1.50%	1.00%
2019	0.00%	1.00%
1/1/2020	3.75%	3.75%
10/1/2020	3.00%	3.00%
1/1/2021	2.50%	2.50%
10/1/2021	2.00%	2.00%
3/1/2022	1.50%	1.50%
1/1/2023	2.00%	2.00%

* Medium Commercial, Agricultural and Lighting rates increased by 16%