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

Rates and Services

June 17, 2021 • Volume 1

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SMUD®

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

Rates and Services

Volume 1

Residential, Agricultural, Commercial and Lighting Rate Changes
Miscellaneous Rate Changes

June 17, 2021

A Sacramento Municipal Utility District Publication

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

June 17, 2021

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For an electronic copy of this volume, or for information on issues included in the report, visit smud.org or call SMUD at 1-855-736-7655.

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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. SMUD is no different, and we monitor and address these drivers to continue to provide our customers reliable energy at affordable rates. One way SMUD is adapting to these ongoing changes is by evolving our pricing structures to better align rates with costs. Aligning rates with costs sends accurate price signals to customers and encourages the adoption of distributed energy resources such as solar, electric vehicles and battery energy storage in a way that benefits reliability, a clean energy future and all of SMUD's customers.

In July 2020, SMUD's Board declared a climate emergency, and in response, SMUD staff brought forward an ambitious 2030 Zero Carbon Plan in March of 2021, which the SMUD Board adopted in April 2021. The 2030 Zero Carbon Plan and executive summary can be viewed at smud.org/ZeroCarbon.

SMUD's goal is to reach zero carbon emissions in our power supply by 2030, which is the most ambitious goal of any large utility in the United States. Climate change is a pressing threat facing our nation and the world, but it's more than that. A recent report by the American Lung Association ranked the Sacramento area 6th in the nation based on the number of high ozone days, which is when the level of ozone at ground level is at unhealthy levels.

SMUD's ambitious 2030 Zero Carbon Plan goals puts the Sacramento Region on the map as an example to follow and a region where innovative, climate-friendly businesses want to be, and will improve our local air quality, overall health and create jobs. It's a pathway toward 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.

Rate Increases

In 2020, faced with the uncertainty caused by the COVID-19 pandemic, SMUD took a risk-based approach to prioritize spending in 2020 and 2021. While maintaining focus on costs, we're continuing to manage the impacts of the pandemic while planning for the continued re-opening of our community and region. We continually forecast and monitor changing circumstances to determine our revenue needs. SMUD continues to face increased cost pressures, and is seeing higher costs in several areas including:

- Wildfire prevention and mitigation

- Infrastructure improvements to maintain high reliability
- Clean energy compliance requirements
- Increased operating costs, including materials and labor

Despite increasing industry cost pressures, SMUD management and staff are expanding upon the risk-based prioritization and continuing to develop operational efficiencies and other cost cutting measures to offset these higher costs. These efforts ensure that the required annual rate increases are within the limits that we have set for ourselves. A key component of our 2030 Zero Carbon Plan, SMUD established a goal to maintain annual rate increases that are at or below inflation through 2030.

SMUD staff recommends a rate increase of 1.5% on March 1, 2022 and 2.0% on January 1, 2023 for residential and non-residential customers.

The proposed rate increase would be applied equally to all rate components as detailed in the rate schedules included in Volume 2 of this Report. With these changes, SMUD electric rates would continue to meet the benchmarks set in the SMUD Board's policy on rates (SD-2, Competitive Rates) and remain among the lowest in California.

Solar and Storage Rate & Virtual Net Energy Metering (VNEM)

Customer adoption of rooftop solar and battery storage is a key part of our strategy to eliminate carbon emissions from our power supply by 2030. Smart solar and storage, that benefits the grid and all customers, is the key to keeping rates low and helping SMUD achieve our 2030 Zero Carbon Plan by incentivizing grid stability as we transition away from carbon-emitting power plants.

For more than two decades, SMUD has played a critical leadership role in providing early support and incentives to grow the nascent rooftop solar industry into the thriving industry it is today. This includes investing approximately $250 million to support customer adoption of rooftop solar.

As a result of investments made by SMUD and others, the cost of solar has significantly decreased over the last two decades. It is now time to invest in storage technology to achieve the same successful industry transformation. Storage paired with a solar system creates additional value compared to a solar-only system. Moreover, the value from a solar and storage system can be shared with all customers, SMUD and the community. With our proposed holistic approach of combining rates and programs, we plan to invest about $25 million over the next 9 years to incentivize storage adoption.

As such, staff recommends a new Net Energy Metering (NEM) successor tariff – the Solar and Storage Rate (Rate Schedule SSR). This tariff is the result of many months of staff collaboration and alignment with the solar and storage industry as well as environmental advocates looking to create a solution that helps all SMUD customers while also providing continued support for the solar and storage industries and maintaining local jobs. This resulted in a unique solution that provides customers opportunities to partner with SMUD to maximize the benefit of solar and storage for all and can serve as a model for other utilities transitioning away from outdated pricing for customers' excess solar generation.

Our current NEM1 tariff doesn't encourage solar and storage, and in fact, solar customers get less value by adding storage due to the netting effect embedded into the NEM1 tariff design, thus discouraging the installation of storage. Adopting a storage device becomes less financially viable for the customer and SMUD customers have responded with only approximately 1% storage adoption. To achieve our 2030

Zero Carbon Plan goals, we need to implement pricing which encourages customers to install storage. The Solar and Storage Rate compensates customers for their unused energy at the "value of solar," which was determined by an independent third-party after an extensive public process (see more details in the Changes to Net Energy Metering section). This value of solar paired with program incentives to participate towards grid stability, provides solar and storage customers more value and helps SMUD achieve our clean energy goals.

Another important component of the Solar and Storage Rate is that is continues to recognize self-consumption; there is no change in the Solar and Storage Rate for energy produced on-site by the customer and used to serve their own electrical load. This means that SMUD has left a large portion of the value of the production from a solar system unchanged, and the customer with solar is able to continue to retain that value, which creates return for their investment. Because self-consumption is untouched, solar systems that are sized appropriately to match the customers' own electrical needs will continue to have a positive investment return for the customer – as measured by either the investment calculation internal rate of return (IRR) or by the simple calculation that the solar system will "pay for itself" well within its effective useful life.

Utility pricing structures mean virtually all electric utilities are faced with a similar problem -- rates recover a significant portion of fixed costs in the variable electricity usage charge (cents/kWh), which results in unrecovered fixed costs when customers adopt any self-generation, such as solar. SMUD has substantial fixed costs that we need to recover from our customers; for example: grid costs, cybersecurity, public goods (including assistance for low-income customers and investments in electrification), wildfire prevention and compliance. Because we're a not-for-profit and community-owned electric company, any fixed costs that aren't recovered from self-generation customers are covered by other customers, including our low-income customers.

The Solar and Storage Rate provides SMUD an opportunity to buy energy from customers with rooftop solar and storage devices at times it's most needed to replace electricity from carbon producing power plants, while balancing lower cost utility-scale renewables SMUD procures from generators. SMUD's 2030 Zero Carbon Plan projects a significant increase in the amount of customer-owned solar and storage in our service territory. To ensure rates are low for all customers while encouraging customers' strategic adoption of solar and storage resources, SMUD must not only change the compensation for customers with self-generation, such as solar, but also offer programs to facilitate this clean transformation. By incentivizing storage, particularly stored energy that SMUD can count on as an energy source it can provide to other customers, staff is recommending a holistic approach that includes rates for the Board's consideration and also program components that staff develops and implements. Adding supporting programs, such as incentives for energy storage systems, incorporates the flexibility of adjusting programs to continue to support and be responsive to the transformation as market conditions change, without having to wait for a formal rate process.

Staff's proposed Solar and Storage Rate proposal has five key elements. These include an "export rate" that SMUD would pay customers for any excess generation sold to SMUD and a Critical Peak Pricing Rate (CPP Rate) for residential customers. These are detailed in this Report. Supporting programs for new rooftop solar systems connecting to SMUD's grid include incentives for the adoption of energy storage/batteries and a Virtual Net Energy Metering (VNEM) program for multi-family dwellings in historically under-resourced communities so these customers can benefit from solar energy. SMUD is also implementing a one-time interconnection fee to pay for the direct costs of interconnecting solar

customers to the grid. While this Report supports the public process and the Board's consideration of the two new rates being proposed (the energy export rate and CPP Rate), the other programs and interconnection fee are described in this Report for informational purposes only.

The five key elements of the Solar and Storage Rate are described below:

- **For the Board's consideration**
    - **Rate for energy sold to SMUD:**
        - All customers selling any energy back to the grid will be paid 7.4¢ per kWh, regardless of the time of day or season.
    - **Residential CPP Rate:**
        - An optional rate for customers participating in a qualified program that will offer a per kWh discount on summer Off-Peak and Mid-Peak hours in exchange for a higher per kWh rate during times when the grid is most stressed, up to 50 hours per summer.
- **For informational purposes**
    - **Interconnection fee for new rooftop solar systems connecting to SMUD's grid:**
        - A one-time fee paid at the time of interconnection application to cover the cost associated with connecting rooftop solar to SMUD's grid:
            - Residential systems: $475 for systems under 10kW, $900 for 10-20kW[1]
            - Commercial systems: $2,500 for systems up to 100kW, $3,300 for more than 100 to 500kW and cost based for over 500kW (no change) with a $5,000 upfront payment.
    - **Incentives for battery program partnerships:**
        - Incentives to purchase storage systems based on the size of the storage system and how that storage system is operated.
            - Up to $500 for a storage system controlled by the customer.
            - Up to $1,500 for a storage system controlled by the customer, with participation in the CPP Rate.
            - Up to $2,500 for a storage system operated in partnership with SMUD for the benefit of all customers through the Virtual Power Plant (VPP) Program.
            - These incentives do not require a rate action and may be adjusted as necessary to assist SMUD in meeting the 2030 Zero Carbon Plan.
    - **VNEM for low-income customers:**

[1] Residential systems larger than 20kW will be charged the commercial fees.

- SMUD is committed to bringing the benefits of solar to multifamily dwelling communities in historically under-resourced communities.
- The VNEM program allows property owners of a qualifying multi-family affordable housing complex to install a solar generation system that allocates a portion of the financial benefit of the generation to the residential tenants, according to SMUD's VNEM program policies.
- The residential tenants and property's common areas will receive a bill credit for the solar generation value allocated to each account, in addition to any Energy Assistance Program Rate (EAPR) and/or Medical Equipment Discount Rate (MED Rate).
- SMUD will not require any out-of-pocket expenses from the tenants.

Effective January 1, 2022, customers who move into a home or building with on-site rooftop solar or other eligible renewable generating facility, or have an application for interconnection of a new on-site solar or eligible renewable generating system, approved by SMUD on or after January 1, 2022, will be enrolled in a new Solar and Storage Rate effective January 1, 2022.

Customers who are on the existing NEM1 tariff, may stay on Rate Schedule NEM1 until December 31, 2030, unless they move or replace their generating facility. Customers on Rate Schedule NEM1 will transition to the Solar and Storage Rate as early as January 1, 2031.

These changes support the recent changes the SMUD Board of Directors made to Strategic Direction 2 (SD-2), Competitive Rates, and provide staff flexibility to be nimble in program development and refinement to support SMUD's goals.

Other proposals covered in this Report include smaller modifications. Staff recommends modifying the commercial rate restructure transition to start as early as October 1, 2021 as a result of shifting priorities due to COVID-19. Staff also recommends modifying the generation formula for the Hydro Generation Adjustment and amending language to certain Rules and Regulations as specified in Volume 2 of this Report.

SMUD invites customers and the community to learn more about the rate proposals and share feedback. Public workshops will be held virtually this summer out of an abundance of caution due to ongoing COVID-19 health and safety precautions. For more information, see the Workshops and Community participation section on page 24.

Board Strategic Direction

SMUD's Board established 18 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 driven by the Board's Competitive Rates Strategic Direction 2 (SD-2). On Feb. 18, 2021, SMUD's Board voted to amend SD-2 to reflect a balanced approach to rate design that accurately reflects the cost of energy when its used or exported to SMUD's grid, reduces consumption during periods of high system demand and encourages

cost effective and environmentally beneficial distributed energy resources needed to support a zero carbon future. SD-2 includes the following objectives:

- Establish a rate target of 18% below Pacific Gas and Electric (PG&E) and at least 10% below PG&E's published rates for each customer class.
- 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 carbon 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 aging 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 and confidence.

Rate Increase Drivers

SMUD continues to face cost pressures for compliance and risk mitigation requirements and technology and grid investments to support SMUD's long-term success. SMUD balances keeping rates affordable with the need to ensure the company maintains strong financial metrics, which are measures of financial health. SMUD's financial viability is imperative to be able to deliver on SMUD's vision and purpose as set out in the Board's Strategic Directions.

Based on current forecasts, staff proposes a 1.5% rate increase on March 1, 2022 and a 2.0% rate increase on January 1, 2023. These support SMUD's commitment to keep rate increase at or less than

inflation through 2030. These increases translate into approximately a $1.91 increase to the average residential customer's monthly bill in 2022 and approximately an additional $2.57 per month in 2023. The rate increases are driven by increased costs for:

- Wildfire prevention and mitigation – due to increased costs and requirements for vegetation management and insurance for wildfire. These costs are being seen across California as wildfire risk continues to grow.
- Infrastructure improvements to maintain high reliability – including continued investments in our distribution and transmission systems, as well as meeting regulatory requirements.
- Clean energy compliance requirements – we're investing in clean energy resources like more wind, solar, hydro power and biogas to meet updated state requirements.
- Increased operating costs, including materials and labor - due to the COVID-19 pandemic, and the impacts it has had to global supply chains, we are starting to see higher material costs for many materials we use every day. While we believe some of the more drastic price increases are temporary, there is general inflationary pressure on goods and services that will likely be sustained.

In 2020, faced with the uncertainty caused by the COVID-19 pandemic, SMUD took a risk-based approach to prioritizing spending in 2020 and 2021. Despite these increasing cost pressures, SMUD management and staff are expanding upon the risk-based prioritization and working to develop operational efficiencies and other cost saving measures to offset these higher costs and ensure that the required rate increases are within the inflation limits that we have set for ourselves. Additionally, with the launch of the 2030 Zero Carbon Plan, SMUD's CEO & General Manager has challenged staff to find cost savings to fund the additional costs of the 2030 Zero Carbon Plan. This has resulted in a new approach to budgeting, which will ensure that SMUD meets its financial targets, and uses a risk-based prioritization process to determine what to stop, start and continue. SMUD is embarking on a renewed focus on Operational Excellence, where staff works to identify small efforts that can deliver significant, sustainable savings and create permanent cost reductions. In the past, we've successfully created permanent cost reductions through Operational Excellence efforts and will double down on our efforts to achieve further cost savings.

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 business, 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. SMUD's goal is to absorb cost increases and new program costs within existing budgets wherever possible.

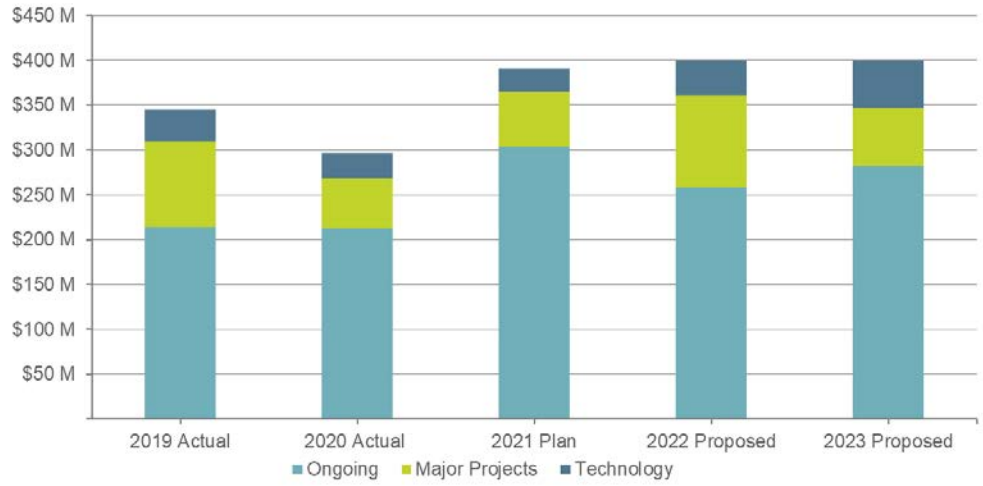
It's important to note that community-owned utilities, and specifically SMUD, are viewed positively by credit rating agencies. In addition to superior risk management, sustainable levels of debt issuance and prudent cash reserves, rating agencies cite the Board's willingness to act decisively and set 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. Staff estimates that our current credit rating of AA saves SMUD

customers approximately $300,000 annually for every $100 million borrowed, over an A rating, adding up to a significant amount over the life of a 20 to 30-year bond issuance. SMUD's higher credit rating reduces letter of credit expense, reduces collateral posting requirements, gives SMUD 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, SMUD continues to replace aging infrastructure to ensure reliability and build additional renewables to achieve a zero-carbon future. Major projects planned include rebuilding two substations serving the downtown Sacramento load, improving capacity and reliability. We will be adding another wind generation facility to interconnect with our existing wind fleet at Collinsville in Solano County. Ongoing projects include required maintenance overhauls to our natural gas-fired power plants, improvements to hydro generation facilities, updating aging infrastructure such as replacing poles and underground cable and distribution system enhancements 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 2023.

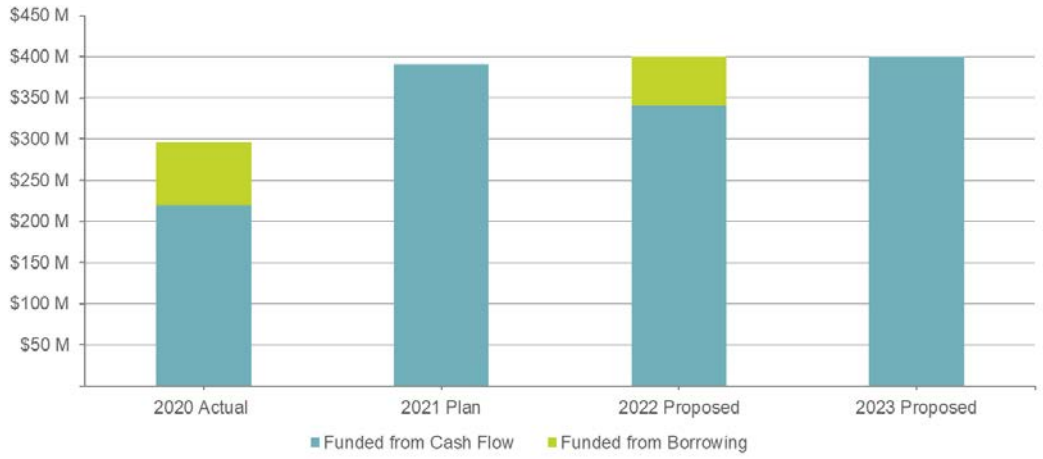
Figure 1 – Capital Expenditures 2019-2023 (Millions)



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 SMUD is forecasting a debt issuance in 2022. For SMUD to have sustainable access to credit markets at favorable rates, and to maintain SMUD's long term financial health, we must balance the percentage of capital projects funded by debt and cash flow. SMUD matches the term of any new debt with the economic life of the asset it is funding. Investments like technology and our vehicle fleet have relatively short lives and are funded with cash flow. Longer life assets such as electric substations are funded with a combination of cash flow and new debt. Figure 2 shows the proposed amount of funding by cash flow and by borrowing.

Figure 2 – Capital Program Funding (Millions)



SMUD's Operating Costs

One of SMUD's largest operating costs is power supply, which consists primarily of wholesale electricity purchases, the cost to procure transmission and the cost of natural gas used to generate electricity to serve our customers. Debt service, which is 12% of total operating costs, is the cost of money borrowed to acquire and build the power plants and infrastructure 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)

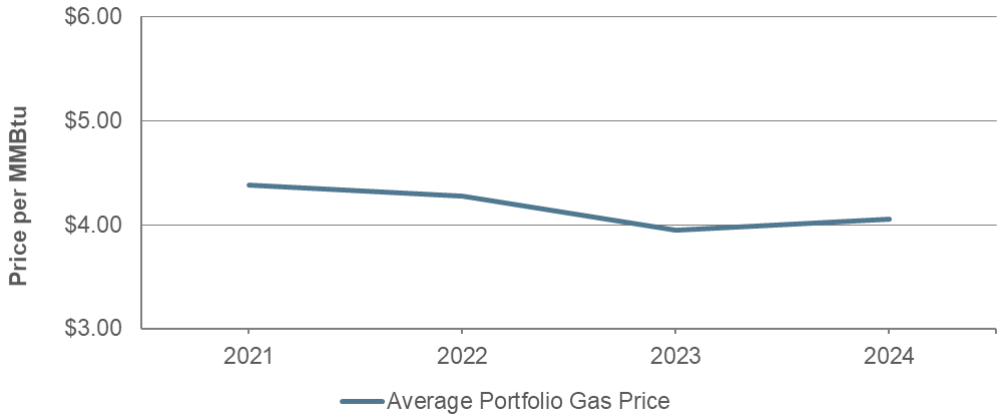
Power Supply Costs

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 energy prices and weather. SMUD has locked a majority of its electricity purchase costs with multi-year fixed-price power purchase

agreements that are not impacted by short-term changes in energy prices. SMUD also procures renewable energy, such as biogas, through long-term contracts in compliance with California's Renewables Portfolio Standard. Biogas is a higher priced commodity than natural gas. SMUD also enters multi-year contracts to hedge or fix the price of natural gas.

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

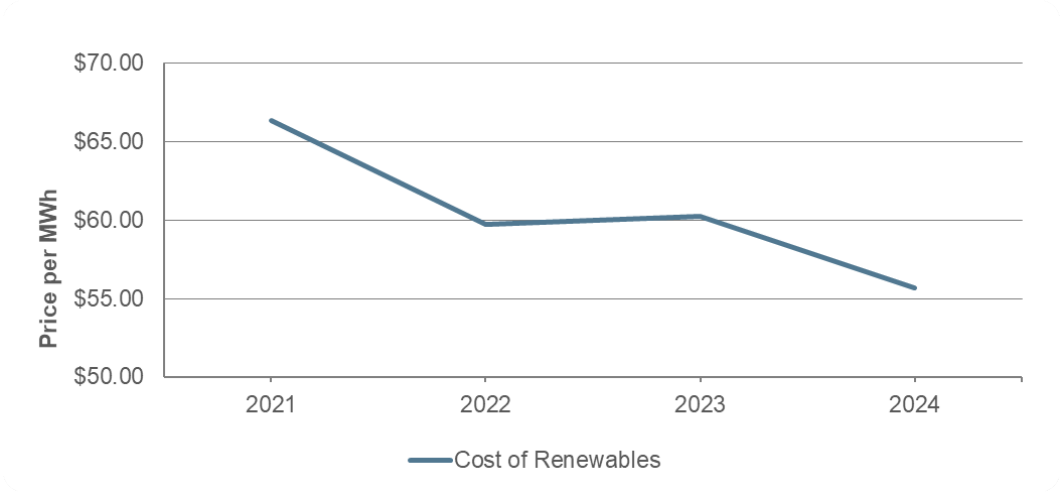
Figure 4 – Projected Cost of SMUD Natural Gas and Biogas



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

SMUD also procures renewable energy, such as wind, solar, biomass and geothermal, through long-term contracts in compliance with California's Renewables Portfolio Standard. These resources are typically more costly than non-renewable energy sources, like natural gas. While the cost of renewable energy contracts has decreased over time, SMUD has several older renewable energy contracts set at higher prices. So, while several higher-priced contracts are ending, lowering the overall cost of the renewable portion of the commodity portfolio, renewables, such as geothermal can be more expensive than non-renewable energy sources.

Figure 5 – Projected Cost of SMUD Renewable Resources



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

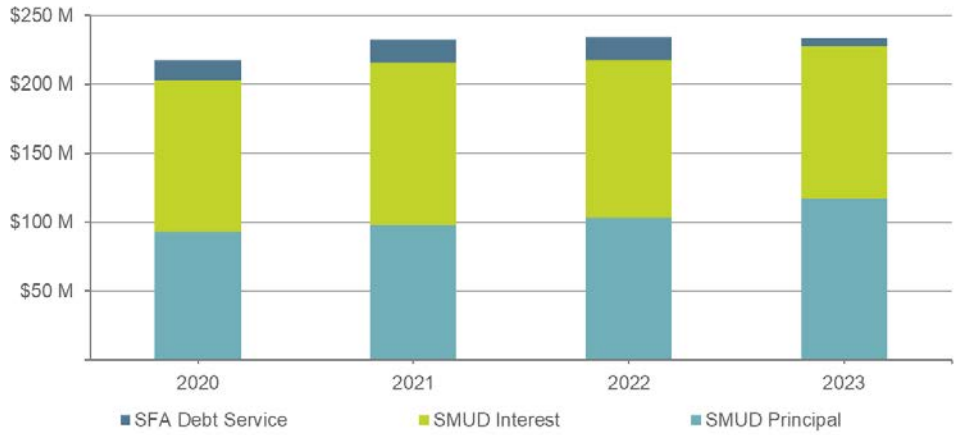
In an average year, SMUD receives about 20% of its energy from hydroelectric generation, primarily from its Upper American River Project (UARP) and deliveries from the Western Area Power Administration (WAPA). But the actual amount of energy can vary from 8% to 35%, depending on the amount of precipitation during the water year. These variations can have a major impact on the amount of energy SMUD has to buy from the market in any one year and significantly impacts SMUD's power supply costs in any given year. The rate increases proposed in this Report are based on hydro generation from a normal water year.

SMUD has 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.

Debt Service

SMUD's 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 Funding Program, SMUD may need to increase debt levels and debt service payments, in addition to what is already forecasted in 2022, to partially fund these investments. 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 SMUD receives a good credit rating, which in turns 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 1 below shows the forecast of select financial and rate information for 2021 through 2023, including a forecast of new debt issuance and fixed charge ratio. SMUD plans to a fixed charge ratio of 1.7 and a minimum of 150 days cash on hand. The 1.7 fixed charge ratio allows SMUD 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 issuance, the 2023 projection ends with 171 days cash on hand.

Table 1 – Forecast of Selected Financial and Rate Information

	2021 Budget	2022 Projection	2023 Projection
Proposed System Rate Change	*	1.50%	2.00%
Cumulative Rate Change	*	1.50%**	3.53%**
Net Income ($M)	$78	$87	$75
Fixed Charge Ratio	1.80	1.76	1.71
Amount of Debt Issued ($M)	$0	$60	$0
Net Reduction in Debt Outstanding ($M)	-$110	-$55	-$120
Days Cash on Hand	152	152	171

* 2021 rate increases of 2.5% in January and 2% in October for all customers already adopted and not presented here.
** The 2022 rate increase goes into effect March 1, 2022.

Labor Costs

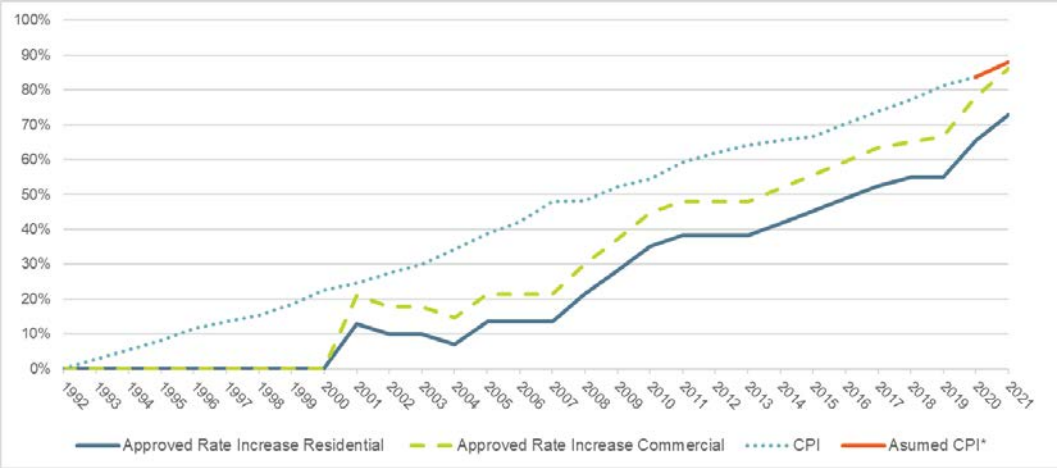
Labor is one of the largest costs and SMUD is very focused on managing this part of its operating budget. Overall, the productivity of SMUD's workforce can be measured by the number of SMUD customers per employee. In 2019 this number was 257. Based on SMUD's 2021 budget, the number of customers supported by each employee has increased to 265, showing that due to increased productivity, SMUD was able to provide service to more customers with slightly fewer employees.

Competitive Position

Strategic Direction 2, Competitive Rates

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

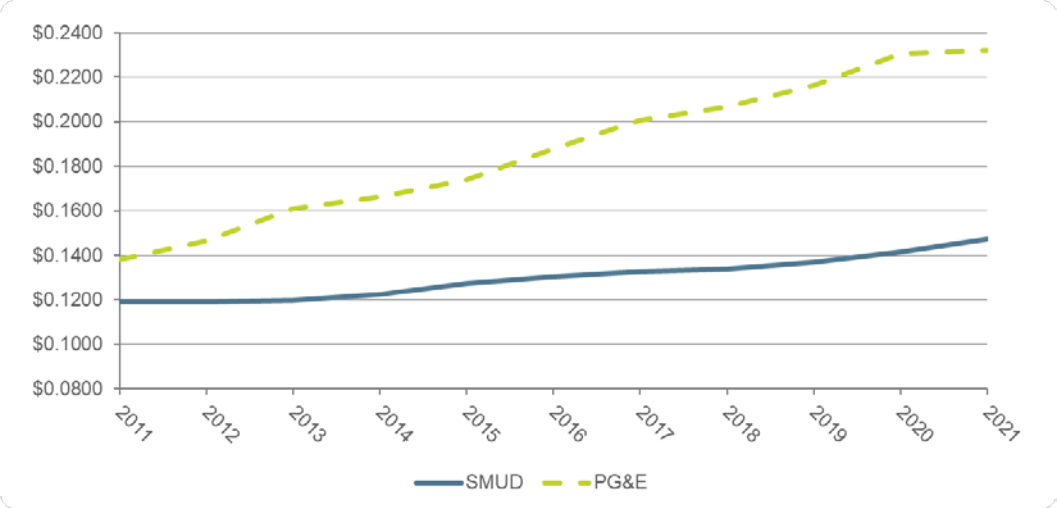
Figure 7 – Annual Rate Increase vs. Consumer Price Index



Source: SMUD's historical adopted rate increases for data through 2021. Historical CPI data from Bureau of Labor Statistics. Forecasted CPI data for 2021 from IHS Markit.

The Board's SD-2 specifies that SMUD will maintain its system average rate at a level that's at least 18% below that of PG&E. SMUD's projected 2021 system average rate is 14.72 cents per kWh, which is 36.5% lower than PG&E's projected system average rate for the same year. As shown in Figure 8, SMUD's rates have been significantly below PG&E's rates for the last decade.

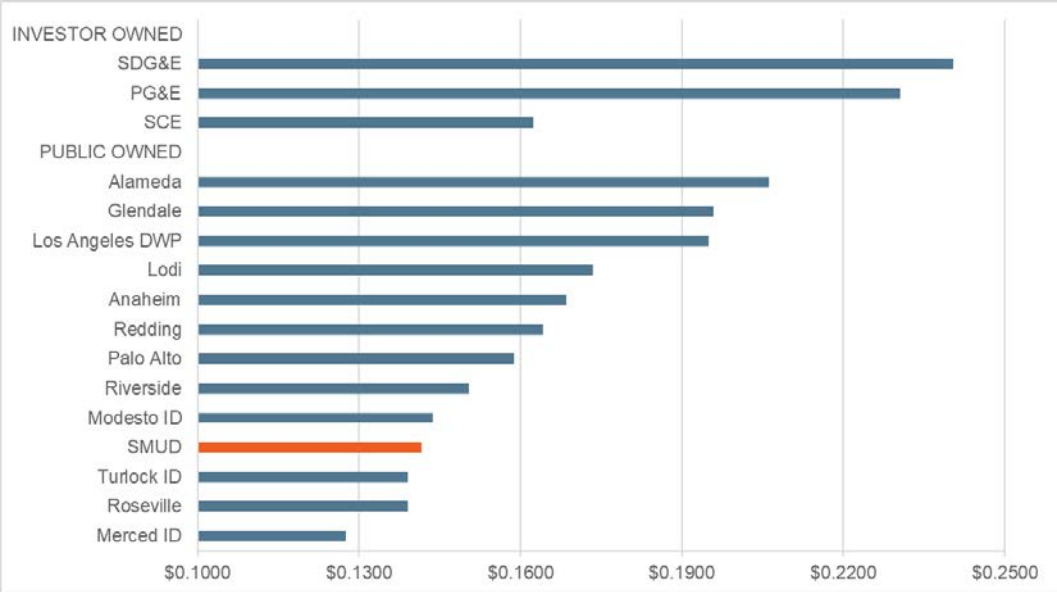
Figure 8 – SMUD vs. PG&E System Average Rates



Source: EIA 861 (formerly EIA 826) survey through 2019. 2020 rates from self-reported annual data for the 2020 EIA 861 annual survey. 2021 rates from PG&E's Advice Letter 6090-E-A, dated March 1, 2021 and SMUD's 2021 forecasted system rate.

In addition, SMUD rates are significantly lower than those of most other California electric utilities. As shown in Figure 9, SMUD's 2020 system average rate was 13% to 41% lower than that of the three large California investor-owned utilities: PG&E, San Diego Gas & Electric (SDG&E) and Southern California Edison (SCE). SMUD's 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 2020 and self-reported annual data for the 2020 EIA 861 annual survey.

Table 2 shows that SMUD's 2021 average system rates are projected to be 36.5% 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 2022 and 2023, and assuming PG&E's rates do not increase for the same years, SMUD rates would remain 34.4% and 32.5% lower than PG&E respectively.

PG&E filed its 2020 General Rate Case requesting additional rate increases for 2021 and 2022 of approximately 4.7% and 4.8%, respectively. In December 2020, the CPUC approved an 8.1% increase for 2020 (implemented in 2021), a 2.7% increase for 2021 and a 3.6% increase for 2022 to PG&E's rates.

Table 2 – 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			
				2021	**2021**	**2021**	**2022[3]**	**2023[3]**
Residential	Standard	E-1	RTOD	$0.2831	$0.1700	-40.0%	-37.7%	-36.1%
	Low-income	CARE[4]	EAPR, EAPR/MED[4]	$0.1774	$0.1183[4]	-33.3%	-31.9%	-29.7%
All Residential				**$0.2458**	**$0.1605**	**-34.7%**	**-31.8%**	**-29.6%**
Small Commercial[2]	≤ 20 kW	A-1	GSN_T	$0.2775	$0.1659	-40.2%	-38.8%	-36.7%
	21 - 299 kW	A-6	GSS_T	$0.2585	$0.1534	-40.7%	-39.3%	-37.5%
Medium Commercial[2]	300 - 499 kW	A-10	TOU-3	$0.2417	$0.1421	-41.2%	-39.6%	-38.2%
	500 - 999 kW	E-19	TOU-2	$0.2084	$0.1328	-36.3%	-34.5%	-33.1%
Large Commercial[2]	≥ 1 MW	E-20	TOU-1	$0.1594	$0.1097	-31.2%	-28.8%	-26.7%
Lighting	Traffic Signals	TC-1	TS	$0.2613	$0.1312	-49.8%	-48.4%	-47.3%
	Street Lighting	Various	SLS, NLGT	$0.3010	$0.1590	-47.2%	-49.9%	-48.8%
Agriculture	Ag & Pumping	AG	ASN/D, AON/D	$0.2495	$0.1463	-41.3%	-39.5%	-38.2%
System Average				**$0.2319**	**$0.1472**	**-36.5%**	**-34.4%**	**-32.5%**

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 2021 average prices for SMUD with 2021 rates. PG&E average prices in 2021 reflect rates effective 3-01-21, per Advice Letter 6090-E-A, dated 2/26/21.
2. SMUD commercial rates include WAPA credits.
3. For simplicity, the table does not reflect the approved rate increases for PG&E for years 2021 and 2022. PG&E's approved 2020 rate increase was implemented on March 1, 2021 and is incorporated.
4. CARE vs EAPR includes EAPR & 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

SMUD will 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.

SMUD invites 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 31, 2021 will provide the last opportunity for public discussion before the Board vote on September 16, 2021.

SMUD will conduct an extensive public engagement and outreach process to share more details about the 2021 rate proposal with all customers. This includes communication with community groups and organizations to provide information about the proposals in this Report through various methods including, newsletter articles, videos and other channels to most effectively reach the organizations' members and constituents.

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

Workshops and Public Hearing Schedule

Out of an abundance of caution due to ongoing COVID-19 health and safety precautions, SMUD will conduct all workshops virtually. Detailed information on the workshops will be posted on smud.org/RateInfo and are provided below:

Date & Time	Event	Location
July 8, 2021 at 5:30 p.m.	Public Workshop	Virtual meeting on ZoomGov/Granicus
July 27, 2021 at 10 a.m.	Public Workshop	Virtual meeting on ZoomGov/Granicus
August 31, 2021 at 5:30 p.m.	Public Hearing	Virtual meeting on ZoomGov/Granicus

Revenue Requirement

Summary of Changes

This section explains the proposed rate revisions for 2022 and 2023. Table 3 shows the effect of the recommended 1.5% rate increase on March 1, 2022 and the recommended 2.0% rate increase on January 1, 2023.

Table 3 – SMUD Forecasted Revenue after Proposed Rate Increase (Millions)*

Customer Class	2022 Revenue Forecast	2022 Forecast with Proposed Increase	2022 Proposed Increase Percent Impact	2023 Revenue Forecast	2023 Forecast with Proposed Increase	2023 Proposed Increase Percent Impact
Residential	$766.94	$778.51	1.5%	$772.75	$788.23	2.0%
Small Commercial < 300kW	$388.69	$394.56	1.5%	$396.60	$404.54	2.0%
Small Commercial 300 – 500kW	$76.61	$77.76	1.5%	$77.19	$78.75	2.0%
Medium Commercial 500 – 1,000kW	$75.89	$77.02	1.5%	$76.76	$78.29	2.0%
Large Commercial >1,000kW	$177.53	$180.19	1.5%	$180.63	$184.26	2.0%
Agricultural	$10.86	$11.03	1.5%	$11.02	$11.24	2.0%
Lighting	$5.24	$5.31	1.5%	$5.31	$5.41	2.0%
Total	**$1,501.76**	**$1,524.38**	**1.5%**	**$1,520.26**	**$1,550.72**	**2.0%**
EAPR & Medical Equipment Discounts**	**($30.84)**	**($30.89)**		**($28.55)**	**($28.61)**	

* Revenue based on 21-cycle month for 12 months and excludes special contracts, pilot rates and lighting fees. Total may not add due to rounding. Total will not match the income statement due to 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 Net Energy Metering (NEM)

Solar and Storage Rate

Purpose

As a not-for-profit, community-owned utility, SMUD offers some of the lowest rates in California. Electric rates are designed to collect enough revenue to pay for the cost to serve electricity, such as the cost to procure, generate and distribute electricity, the costs necessary to provide customer service and other fixed costs such as wildfire prevention and mitigation expenses, public goods programs, and cybersecurity, among many others.

Historically, electric utilities have generated electricity themselves, purchased electricity on the open wholesale market from third parties or a combination of the two to meet customers' anticipated energy consumption, which was fairly predictable. As a result, how utilities collected revenue and the actual structure of their rates did not have a significant impact on ensuring the utility was able to collect enough revenue to cover costs.

For most electric utilities, including SMUD, rate simplicity became a policy and most fixed costs have been collected in volumetric, or per kWh, charges. SMUD's rates were designed to be simple and easy for customers to understand– with a high reliance on revenue collection through variable per kWh charges, despite the fact that a growing portion of SMUD's costs are fixed and do not vary based on the amount of kWh's customers use. Because of this rate simplicity model, the current variable electricity retail rates that SMUD charges to customers includes both the variable cost of electricity and the fixed costs. SMUD has been a leader in the industry in addressing this, and our System Infrastructure Fixed Charge (SIFC) charge transition was the first step in splitting out the fixed component of the bill; although it does not recover all fixed charges. As SMUD better aligns revenue collection to recover fixed costs through a fixed charge, the variable cost of energy decreases, encouraging electrification, a key component of the 2030 Zero Carbon Plan.

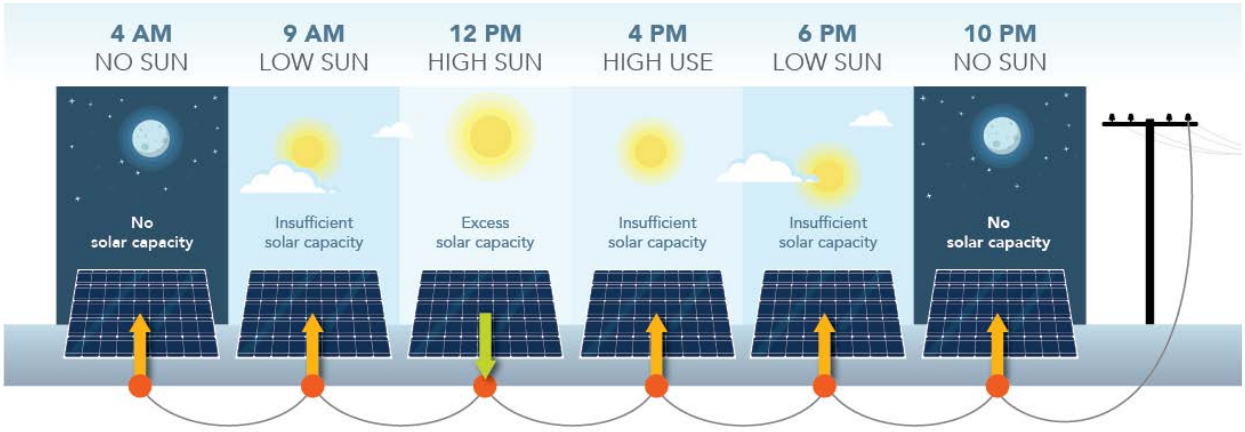
Technology and energy markets have changed significantly over time and utilities are gradually adapting their rate structures to be more in line with the cost to provide service at different times of day and with the way customers use electricity today. For example, customers may now install behind-the-meter rooftop solar, batteries and other sources of renewable generation.

"Behind-the-meter" means the customer can install a renewable generating facility or a battery storage system after the delivery point, which is normally the SMUD meter, then use the energy generated from their systems for their own use and send any energy they do not need to SMUD through the grid. An illustration of how a typical behind-the-meter generating facility works is shown in Figure 10.

A customer with renewable generation will typically experience the following scenarios throughout the day:

- Generate energy and send whatever energy they do not need to the grid (excess solar capacity);
- Generate energy and supplement that energy with energy from SMUD to meet their energy needs (insufficient solar capacity); or
- Receive energy from SMUD to meet their energy needs when their generating facility is not producing energy (no solar capacity).

Figure 10 – Illustration of Behind the Meter Generating Facility



NEM was established by the State of California in the late 1990s to help the solar industry grow and accelerate customer adoption of solar. The regulation required electric utilities to buy all excess energy generated by customers who had a renewable generating facility on their premises at the full retail value (the amount a standard customer would pay for electricity from SMUD) and credit that value toward the utility-supplied energy (when the NEM facility is not producing energy) on the customer's monthly bill. Eligible renewable electrical generating facilities vary and are defined by the California Energy Commission, but to date, rooftop solar has been the dominant renewable technology used by customers. SMUD's NEM tariff is referred to as "NEM1" and customers on that tariff are referred to as "NEM1 Customers".

The intent of utilities paying customers full electricity retail prices for excess energy was to help customers recover the cost of installing renewable solar generation, which at the time was about $12 per watt (in total about $48,000 for a 4kW system). Today, the cost of installing renewable solar generation has decreased significantly to approximately $4 per watt (in total about $16,000 for a 4kW system) while electricity rates have continued to increase. Additionally, compensating NEM1 Customers for excess energy at full retail value results in these customers paying very little towards the fixed costs to serve them, despite still receiving power from SMUD and using the grid to send excess energy back to SMUD. Because electricity rates recover both the variable costs of electricity and the fixed costs associated with running a utility, that means NEM1 Customers are not fully contributing towards all costs, such as grid maintenance, wildfire prevention and cybersecurity. Unfortunately, those costs don't go away and must be paid by SMUD's other customers.

As of the date of this Report, there are approximately 35,000 NEM1 Customers in SMUD's service area. As shown in Figure 11, while approximately 34,500 of our NEM1 Customers are residential, NEM1 generation capacity is split roughly evenly between residential and commercial customers. SMUD

typically receives between 400 and 500 applications for new installations each month. The NEM legislation no longer applies and the intent of the NEM legislation has been met. There have been changes to the foundational conditions that spurred the creation of NEM, and it is time for SMUD to update our rates to compensate customers for the value of solar energy they send back to the grid in a way that reflects the value of solar and grid benefits for all customers.

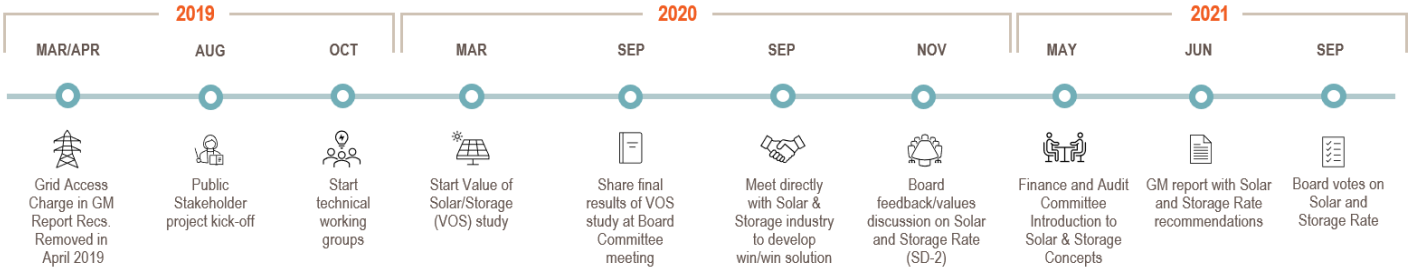
Figure 11 – Commercial and Residential NEM1 Customers and Generation

Public Stakeholder Process

In the 2019 Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services, staff recommended a Grid Access Charge to recover the fixed costs no longer collected from NEM1 Customers. After receiving feedback that the public wanted to be involved in developing a successor rate, and that the Board wanted to provide updated guidance in Strategic Direction 2, Competitive Rates, the recommendation was withdrawn.

Staff developed a public stakeholder process to design a NEM1 successor rate that would deliver benefits to all customers, by involving solar and storage industries/advocates, academics, environmental advocates and low-income advocates. That two-year process consisted of convening a Technical Working Group designed to provide input into a Value of Solar and Solar and Storage Study (VOS Study), the completion of the VOS Study and finally the development of the proposed NEM1 successor Solar and Storage Rate in collaboration with representatives from the solar and storage industries. Figure 12 shows the details of the public stakeholder process timeline that took place from the spring 2019 through the summer 2021.

Figure 12 – Public Stakeholder Process Timeline



SMUD held a series of meetings with the Technical Working Group, designed to receive input into the development of the VOS Study. The Technical Working Group consisted of diverse stakeholders including several solar industry representatives/advocates, storage advocates, environmental groups, low-

income advocates, NEM1 Customers, non-NEM1 customers and academics. In 2019 and early 2020, the Technical Working Group met in person for more than 40 hours and discussed a range of topics including:

- Benefits and costs associated with behind-the-meter rooftop solar,
- Unique indirect benefit of avoiding disturbing land or purchasing land for a utility sized solar plant,
- Transmission and distribution impacts,
- Wholesale market impacts and
- Other attributes of avoided costs related to gas-fired power plants.

The Technical Working Group was facilitated by an independent third-party facilitator, who produced all meeting minutes and Final Report recommendations as inputs to the VOS Study. After numerous technical presentations by group members and outside experts, the Technical Working Group agreed on 24 components that should be included in the VOS Study to assist in the calculation of the value of rooftop solar energy. The Technical Working Group also recommended that the value of solar study consider three different configurations:

- Value of Solar Only – the value of energy produced from rooftop solar when there is no accompanying storage facility.
- Value of Solar Plus Customer Operated Storage – the value of energy produced from rooftop solar when there is a connected storage facility, and that storage facility is operated to maximize the benefit to the customer.
- Value of Solar and Storage with Utility Partnership – the value of energy produced from rooftop solar when there is a connected storage facility, and that storage facility is operated in partnership with the utility to maximize the benefit to all utility customers.

Once the Technical Working Group Final Report was completed by the third-party facilitator, SMUD staff issued a competitive Request for Proposal (RFP) for an independent expert to conduct the valuation study. Energy + Environmental Economics (E3) was selected from a group of well-qualified proposers to perform the independent study.

E3 performed its analysis based on market costs of energy, SMUD's rates, SMUD's costs and SMUD NEM1 Customer household usage and solar production. The study included the feedback received from stakeholders to evaluate the values of solar alone and the value of solar and storage together. E3's VOS Study can be found on the SMUD website:

- **Summary** – smud.org/VOSsummary
- **Full Study** – smud.org/VOSstudy

The VOS Study compares the value of energy produced from rooftop solar to both the value of energy produced from utility scale solar and from natural gas generation. While the cost of rooftop solar has decreased dramatically over time, so has the cost of utility scale solar, dropping the price of energy produced from utility scale solar. In both scenarios, the VOS Study shows that SMUD is overcompensating customers for excess energy sold back to SMUD.

SD-2 directs staff to ensure costs are equitably allocated across and within customer classes. The very small SMUD bills created through the current NEM1 compensation cause some fixed costs to not get paid by NEM1 Customers. Unfortunately, those costs do not go away and must be paid by SMUD's other customers, creating a conflict with SD-2. When SMUD considers rates, we need to make sure they are fair for all of our customers, and that each customer type, regardless of the source of the energy they use, pays the true costs associated with serving them electricity.

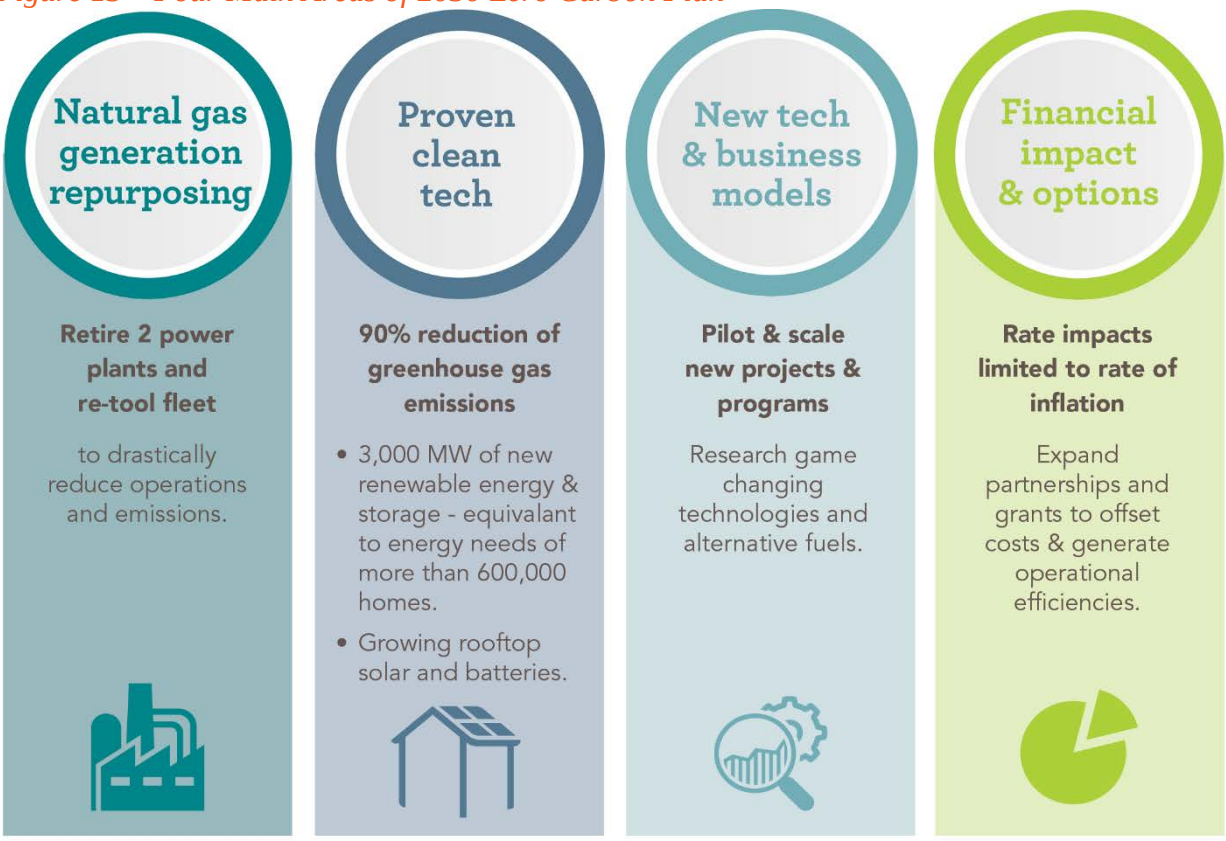
2030 Zero Carbon Plan

In July 2020, SMUD's Board declared a climate emergency, and in response, SMUD staff brought forward an ambitious 2030 Zero Carbon Plan in March 2021. Staff conducted extensive community outreach efforts and incorporated the feedback received from that process into the final 2030 Zero Carbon Plan. The Board adopted the 2030 Zero Carbon Plan in April 2021. SMUD's goal is to reach zero carbon emissions in our power supply by 2030, the most ambitious carbon reduction goal of any large utility in the United States. Our 2030 Zero Carbon Plan is anchored on our longstanding commitment to provide safe and reliable power with rates among the lowest in California.

Eliminating carbon emissions from our power supply will deliver far-reaching benefits, including improved air quality and community health, inclusive economic development, new technology jobs today and into the future and placing the Sacramento Region on the map as an example to follow and a region where innovative, climate-friendly businesses want to be.

To achieve zero carbon, we're focused on four main areas as shown in Figure 13.

Figure 13 – Four Main Areas of 2030 Zero Carbon Plan



Specifically, our goal is to add 3,000 megawatts (MW) of new renewable energy and storage by 2030. Currently, storage is still relatively new technology and is generally too expensive to be cost-effective. A NEM1 Customer would see a reduction in their return on investment if they installed storage under our current NEM1 rate, which discourages storage adoption. For reference, in SMUD's territory there are about 35,000 solar customers, but only about 300 customers have installed storage units, less than a 1% adoption rate. The proposed Solar and Storage Rate provides an opportunity for SMUD to buy energy from customers with storage at times when it's most needed to replace electricity from carbon-producing power plants. By incentivizing storage, customers get to consume more of the energy they produce, while helping to meet SMUD's 2030 Zero Carbon Plan. Furthermore, SMUD can partner with these customers through programs that will benefit all SMUD customers.

Solar and Storage Rate

Once the VOS Study was complete, staff worked with several solar and battery storage companies and industry groups to develop a successor rate that would fairly compensate customers for excess energy and improve the cost allocation between customers, while encouraging the adoption of solar plus batteries. Through this collaboration, SMUD identified what was important to our customers with renewable generation, such as keeping the right to use the energy they generated themselves, and anticipated the industry transformation to continue to grow and support the transition to a clean energy economy. The result of that partnership, the Solar and Storage Rate, is a balanced, responsible and flexible approach to solving a complex issue and one that supports the 2030 Zero Carbon Plan and its wide-reaching benefits.

Export Compensation Rate

Staff is recommending paying customers for excess renewable generation at the value of solar, which is currently 7.4¢ per kWh. That amount is based on the 7.0¢ value of solar determined in the independent VOS Study completed in 2020, where rooftop solar is assumed to replace natural gas generation, plus 0.4¢ for the indirect benefits of solar, as described in the VOS Study[2].

This recommendation continues to enable customers with renewable generation to use the energy produced from their system to meet their energy needs. Any excess energy that is not needed by a customer can be sold to SMUD at 7.4¢ per kWh, regardless of the time of day or season, whether SMUD needs the energy or not. This proposal sends a signal to the customer to size their renewable generation to maximize self-consumption and allows customers to size their system for future electrification with an increase to the system size allowed to 110% of household use. (Previously the maximum was 100%.)

This proposal incentivizes storage, through programmatic incentives, as there is more value to customers to save their excess energy for use during peak periods than there is to sell it to SMUD. Customers can either choose to sell excess energy to SMUD at 7.4¢ per kWh, or they can store that excess energy with a battery and use it to serve their energy needs and reduce the amount of energy they need to buy from SMUD during a more expensive time period. Staff recommends that the Solar and Storage Rate (Rate Schedule SSR) go into effect January 1, 2022.

[2] Value of Solar and Solar + Storage Study, pages 54 and 71

Customers on the Solar and Storage Rate may install renewable generation sized up to 110% of their household usage to allow for future electrification (for example an electric vehicle or heat pump water heater). Batteries installed without an associated generation facility will be allowed to enroll in the Solar and Storage Rate, regardless of the date the application for interconnection was approved by SMUD, but cannot enroll in Rate Schedule NEM1.

To ensure we are providing fair market value for a customer's export energy, SMUD staff is recommending to not lock in the current compensation rate. As market conditions impact the export compensation rate, either increasing or decreasing, SMUD will rely on a combination of publicly available indices and SMUD actual costs for components of the export compensation rate. The export compensation rate will not be revised more than ± 30% every four years, starting in 2026. The value will be updated and subject to Board approval at a regular Board meeting, which will then be posted on smud.org.

Rate Schedule NEM1

Customers subject to Rate Schedule NEM1 prior to January 1, 2022 may stay on Rate Schedule NEM1 until they are transitioned to Rate Schedule SSR at SMUD's discretion as early as January 1, 2031. Customers are subject to Rate Schedule NEM1 if they meet the following criteria:

- Moved in or transferred service prior to January 1, 2022; and
- Approval from SMUD received to connect a rooftop solar system (or other generating facility) prior to January 1, 2022.

If a customer on Rate Schedule NEM1 moves from or transfers service from their home or building on or after January 1, 2022, the new owner or resident will be subject to the Solar and Storage Rate. If a customer on Rate Schedule NEM1 moves to a home or building on or after January 1, 2022, and that premises has an eligible renewable generation facility, they will be subject to the Solar and Storage Rate.

NEM2 Rate Schedule

The NEM2 Rate Schedule was approved by the Board in the 2019 Rate Action and states that the rate schedule will be updated upon the completion of a future public stakeholder process and subsequent rate action. The public stakeholder process has been completed, and now staff recommends closing this rate and replacing it with the Solar and Storage Rate.

Bill Impact

Customers who install rooftop solar or another renewable generating facility will experience different bill imp acts depending on whether they install storage or participate in a Solar and Storage Rate program, such as the Virtual Power Plant (VPP) program, where the customer partners with SMUD to use the storage to benefit all customers. Figure 14 shows an example of the bill impacts for a residential customer who installs solar and solar with storage under the various scenarios.

Figure 14 – Example of Customer Annual Bill Impacts[1]

[1]Examples based on residential customer using 7,785 kWh per year before solar. Bill changes are based on the addition of a 4kW solar system and a 4kW storage system when indicated.

Revenue Impact

The goal of the Solar and Storage Rate is to more accurately compensate customers with distributed generation for energy sent back to the grid and by incentivizing storage to help meet SMUD's 2030 Zero Carbon Plan. The revenue impact to SMUD will depend on how much renewable generation and storage is added to SMUD's service area.

Recommendation

Effective January 1, 2022, staff recommends closing and replacing Rate Schedule NEM2 with Rate Schedule SSR. All customers on Rate Schedule NEM2 as of December 31, 2021 will be subject to Rate Schedule NEM1.

Rate Schedule NEM2 References

Effective January 1, 2022, staff recommends replacing all references to Rate Schedule NEM2 with Rate Schedule SSR in Rate Schedules R and R-TOD.

Effective January 1, 2022, staff recommends updating Section IV, Subsection F of Rate Schedule R as follows:

Customer ~~*Net*~~ *Energy* ***Generation*** ~~*Metering*~~ *Option*~~*s*~~*. Refer to Rate Schedule*~~*s*~~ *NEM1* ~~*and NEM2*~~.

Effective January 1, 2022, staff recommends updating Section IV, Subsection E of Rate Schedule R-TOD as follows:

Customer ~~*Net*~~ *Energy* ***Generation*** ~~*Metering*~~ *Option*~~*s*~~*. Refer to Rate Schedules NEM1 and* ~~*NEM2*~~***SSR****.*

Effective January 1, 2022, staff recommends updating Section IV, Subsection B of Rate Schedule AG as follows:

Customer ~~*Net*~~ *Energy* ***Generation*** ~~*Metering*~~ *Option*~~*s*~~*. Refer to Rate Schedules NEM1 and* ~~*NEM2*~~***SSR****.*

Effective September 17, 2021, staff recommends updating Section V, Subsection E of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 as follows:

Customer ~~*Net*~~ *Energy* ***Generation*** ~~*Metering*~~ *Option**s**. Refer to Rate Schedules NEM1 and* ~~*NEM2*~~***SSR***.

Rate Schedules NEM1 and SSR

Effective September 17, 2021, modify the first paragraph of Section VII of Rate Schedule NEM1 to reflect the residential rate requirement approved in Resolution 17-06-09 and to be on Rate Schedule R-TOD.

In addition to Table 4, staff also recommends minor tariff language amendments as specified in Rate Schedule NEM1.

Effective September 17, 2021, staff recommends modifying Rate Schedule NEM1 as described in Table 4, which includes details continuing full retail compensation for all customers with solar connected to SMUD's grid, or approved to connect to SMUD's grid, prior to Jan. 1, 2022.

Table 4 – Recommended Changes for Rate Schedule NEM1

Category	Moved in or established service prior to Jan. 1, 2022 AND Application for interconnection approved by SMUD prior to Jan. 1, 2022
Before December 31, 2030	• Customer is subject to NEM 1
After December 31, 2030	• Customer is subject to the Solar and Storage Rate.
Move in/move out, Transfer of Service	• New customer at premises subject to Solar and Storage Rate. • Customer subject to Solar and Storage Rate at new premises, if applicable.
System Modification/Replacement	• Subject to Solar and Storage Rate if: 1. System size increased more than 10% of generating capacity originally approved, or 1 kW, whichever is greater, or exceeds 110% of generating capacity originally approved. 2. Revised/new interconnection application for system replacement.
Storage Incentives	• Customers are required to be on Solar and Storage Rate to receive storage incentives.
Transition to Solar and Storage Rate	• If a customer enrolls in the Solar and Storage Rate, they cannot return to Rate Schedule NEM1.

On or After January 1, 2022	• Rate Schedule NEM1 is closed to new customers, except to those customers that are subject to Section II in Rate Schedule SSR.

Effective January 1, 2022, staff recommends creating Rate Schedule SSR as described in Table 5. Rate Schedule SSR will apply to customers meeting the following criteria:

- Moved in or transferred service on or after January 1, 2022 to a premises with an eligible generating facility; or
- Have an eligible generating facility where the interconnection application was approved by SMUD on or after January 1, 2022.

On June 24, 2019, the Board approved Resolution 19-06-13 establishing Rate Schedule NEM2 which stated terms and conditions for customers who established service on or after January 1, 2018 or who had an electrical generation facility on their premises that had an application for interconnection received by SMUD on or after January 1, 2018. This recommendation updates this language by changing the dates to January 1, 2022 and requires the application for interconnection to be approved by SMUD.

Table 5 provides the details regarding the implementation of Rate Schedule SSR.

Table 5 – Rate Schedule SSR Details

Category	Moved in or established service on or after Jan. 1, 2022 OR Application for interconnection approved by SMUD on or after Jan. 1, 2022
System Size	• Cannot exceed 110% of customer's electrical usage.
System Modification/Replacement	• Cannot exceed 110% of customer's electrical usage.
Export Compensation Rate	• $0.0740 per kWh effective January 1, 2022.
Export Compensation Rate Updates	• SMUD will update the export compensation rate every four years, starting in 2026, using a combination of publicly available local indices and SMUD actual costs for components of the Export Compensation Rate. The Export Compensation Rate will not be changed more than ± 30% every four years. The revised value will be subject to Board approval at a regular Board meeting and will be posted on smud.org.
Solar and Storage Implementation Date	• January 1, 2022. • In the event that the Solar and Storage Rate is unavailable January 1, 2022, customers will temporarily be subject to Rate Schedule NEM1 until it is technically feasible to transition them to the Solar and Storage Rate. •

Electing the Solar and Storage Rate	• Customers with an eligible electrical generation facility on their premises may elect to enroll in the Solar and Storage Rate
Residential Rate Eligibility	• Standard residential rate (including the optional CPP Rate).
Annual Settlement	• No annual settlement. • Export credit will roll forward to the next month.
Billing	• All customers will be billed monthly for all charges. • The export credit can only offset electricity usage charges.
Storage Incentives	• May accept storage incentives.
Storage Only	• Customers that have storage without an associated generating facility qualify for this tariff, regardless of date approved by SMUD.

Revisions described above are detailed in Rate Schedules NEM1 and SSR included in Volume 2 of this Report.

Changes to Residential Rates

Rate Increase for Residential Rates

Purpose

This proposal recommends a rate increase of 1.5% on March 1, 2022 and 2.0% on January 1, 2023. The proposed rate increases will be applied to all rate components: the monthly SIFC, as well as the energy and miscellaneous charges on customers' bills.

Customers on the income-qualified EAPR Rate 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 2022 and 2023, as shown in Table 6.

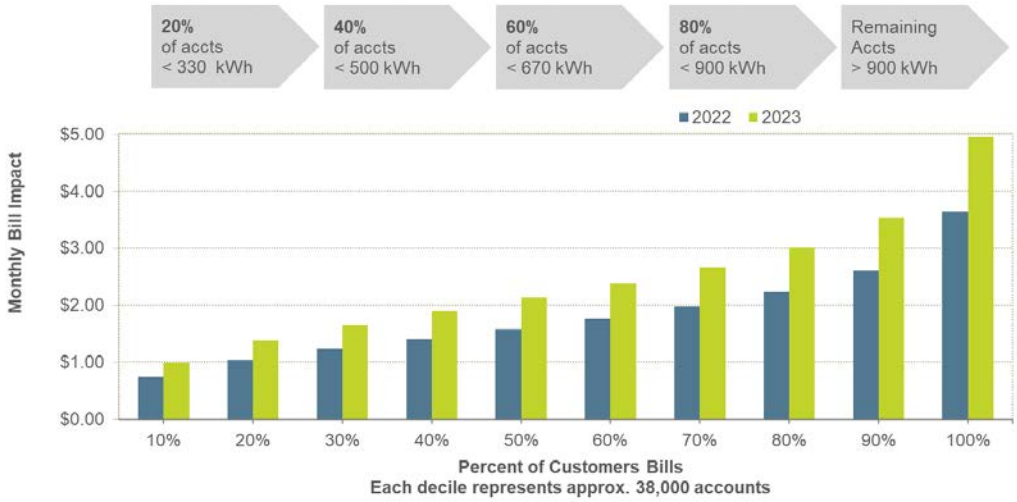
Table 6 – EAPR Maximum Monthly Discounts

Charge Component	Federal Poverty Level	Maximum Discounts
SIFC Discount	All levels	$10
Maximum Energy Discount	0-50%	$60
	>50-100%	$32
	>100-150%	$10
	>150-200%	$0

Bill Impact

Bill impacts depend on how much electricity a customer uses each month as well as when they use energy. Figure 15 shows an overview of the distribution of bill impacts for standard rate customers in 2022 and 2023 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 $1.91 in 2022 and an additional $2.57 in 2023. On average, about 80% of customers will see bill impacts of approximately $3.00 or less in 2022 and 2023, as shown in Figure 15.

Figure 15 – Rate Increase Monthly Bill Impacts for Standard Rate Customers 2022-2023



Analysis based on stable population of standard customers for calendar year 2019 (pre-COVID-19).

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 the 100% to 200% FPL range. Figure 16 illustrates the bill impacts for EAPR customers by FPL. On average, EAPR customers will see an average monthly bill impact of $1.60 in 2022 and an additional $2.15 in 2023.

Figure 16 – Rate Increase Monthly Bill Impacts for EAPR 2022- 2023

2022

Average Monthly Bill Impact:		
FPL	Avg kWh	
0-50%:	697	$1.57
50-100%:	601	$1.52
100-150%:	619	$1.63
150-200%:	638	$1.67
Average	***623***	***$1.60***

2023

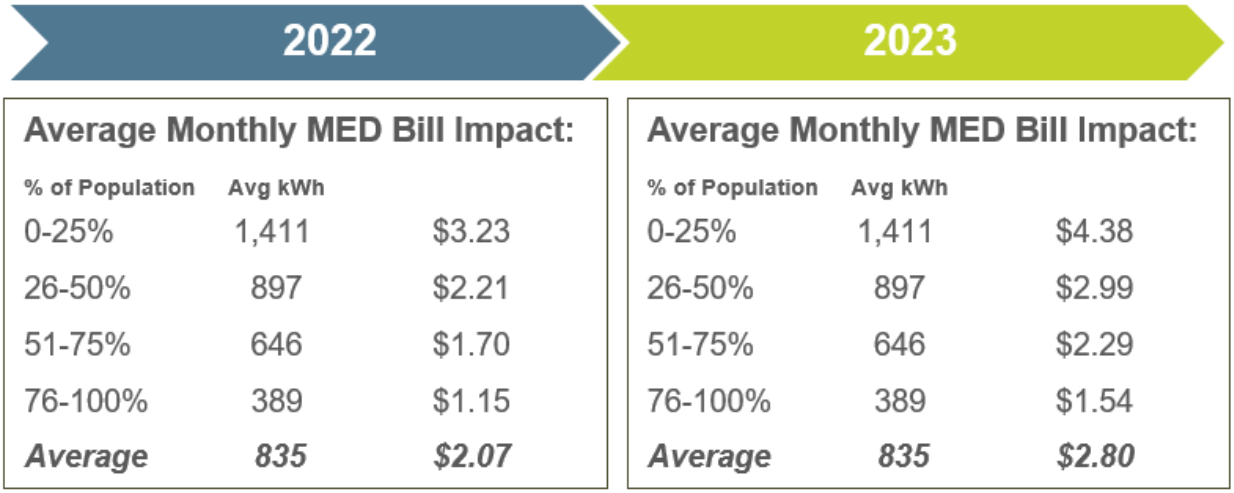
Average Monthly Bill Impact:		
FPL	Avg kWh	
0-50%:	697	$2.13
50-100%:	601	$2.05
100-150%:	619	$2.20
150-200%:	638	$2.25
Average	***623***	***$2.15***

Analysis based on stable population of EAPR customers for calendar year 2019 (pre-COVID-19). Amounts may reflect minor rounding differences.

Figure 17 provides average bill impacts to customers on the Medical Equipment Discount Program (MED Rate). It is 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 monthly bill impacts of $2.07 in 2022 and an additional $2.80 in 2023.

Figure 17 – Rate Increase Monthly Bill Impacts for MED 2022-2023



Analysis based on stable population of MED customers for calendar year 2019 (pre-COVID-19). Amounts may reflect minor rounding differences.

Revenue Impact

With the proposed rate increase, SMUD expects to collect approximately $10 million in added revenues from all residential rate categories for March through December 2022 and an approximate total amount of $26 million for January through December 2023.

Recommendation

Staff recommends adoption of a 1.5% rate increase on March 1, 2022 and 2.0% on January 1, 2023 for residential rates.

Revisions described above are detailed in the residential rate schedules included in Volume 2 of this Report.

Changes to Rate Schedule R

Purpose

Staff recommends improving the clarity of Rate Schedule R by adding the months included in each season in the rates table and removing the language below the rates table detailing which months are included in each season. Staff also recommends clarifying that customers with storage, but no associated generating facility, may not enroll in the optional Fixed Rate.

Additionally, staff recommends clarifying the language for transitioning customers from the Legacy Rate to the standard residential rate starting January 1, 2023.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective January 1, 2022, add the following language in Section I, Subsection A in Rate Schedule R:

> *6. Customers who have a storage facility without an associated generating facility are not eligible to enroll in the Fixed Rate.*

Effective January 1, 2022, modify Section I, Subsection A, Subsection 3 in Rate Schedule R as follows:

> *3. Customers who qualify for Rate Schedule NEM1 and have an eligible renewable electrical generation facility that was approved for installation prior to January 1, 2018 are eligible to enroll in the Fixed Rate* ***and*** *~~. NEM1 customers that are enrolled in the Fixed Rate~~ may remain on the Fixed Rate after December 31, 2022.*

Effective January 1, 2022, modify Section I, Subsection B, Subsections 3 and 4 in Rate Schedule R as follows:

> *3. Customers who have an eligible renewable electrical generation facility under Rate Schedule NEM1 that was approved for installation by SMUD before January 1, 2018, and are enrolled on the Legacy Rate may remain on this closed rate until* ***transitioned to SMUD's standard TOD (5-8 p.m.) Rate as early as January 1, 2023, as technically feasible*** *~~December 31, 2022~~. If an eligible generation facility customer in this rate category elects an open rate, the customer cannot return to the Legacy Rate.*
>
> *4. The Legacy Rate* ***will be eliminated once all*** *~~terminate for~~ customers ~~with an eligible renewable electrical generation facility under Rate Schedule NEM1 on their first billing cycle that closes in 2023, and customers will then transition to SMUD's standard residential rate~~* ***are removed from this rate and the rate transition is complete****.*

Effective January 1, 2022, add the months for each season in the rates table in Section II, Subsections A, B and C in Rate Schedule R, and remove the following language:

> **Non-Summer Season includes Fall (Oct 1 – Nov 30), Winter (Dec 1 – Mar 31) and Spring (Apr 1 – May 31) periods.*

All of the recommended changes are specified in Rate Schedule R included in Volume 2 of this Report.

Changes to Rate Schedule R-TOD

Purpose

Staff recommends improving the clarity of Rate Schedule R-TOD by adding the months included in each season in the rates table and removing the language below the rates table detailing which months are included in each season. Staff also recommends clarifying that TOD (5-8 p.m.) is an optional rate for customers on Rate Schedule NEM1. Staff recommends moving the rate requirement for certain customers on Rate Schedules NEM1 and SSR to the general applicability section and allow those customers to enroll in any available rate on Rate Schedule R-TOD.

Additionally, staff recommends clarifying the language for transitioning customers from TOD (4-7 p.m.) to the standard residential rate starting January 1, 2023.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective January 1, 2022, add Subsection 3 to Section I in Rate Schedule R-TOD as follows:

> *3. Customers who have an eligible renewable electrical generation facility under Rate Schedules NEM1 or SSR that was approved for installation by SMUD on or after January 1, 2018, or who establish service at a premises that has an electrical generation facility that is fueled by a renewable fuel source on or after January 1, 2018 must be on this Rate Schedule R-TOD.*

Effective January 1, 2022, modify the following language in Section I, Subsection A in Rate Schedule R-TOD as follows:

> *1. The TOD (5-8 p.m.) Rate is the standard rate for SMUD's residential customers. Eligible customers can elect the Fixed Rate under Rate Schedule R as an alternative rate.*
>
> ~~*2. Customers who have an eligible renewable electrical generation facility under Rate Schedule NEM1 that was approved for installation by SMUD after December 31, 2017, must be on the TOD (5-8 p.m.) Rate.*~~

*~~3~~**2**. The TOD (5-8 p.m.) Rate is an optional rate for customers who have an eligible renewable electrical generation facility under Rate Schedule NEM1 that was approved for installation by SMUD prior to January 1, 2018.*

~~3. Customers who have an eligible renewable electrical generation facility under Rate Schedule NEM2 must be on the TOD (5-8 p.m.) Rate.~~

*~~4~~**3**. 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.*

Effective January 1, 2022, modify Section I, Subsection B, Subsection 3 in Rate Schedule R-TOD as follows:

3. The TOD (4-7 p.m.) Rate will terminate for customers with an eligible renewable electrical generation facility under Rate Schedule NEM1 ~~on their first billing cycle that closes in 2023,~~ ***as early as January 1, 2023 as technically feasible. C****~~c~~ustomers will then transition to SMUD's standard ~~residential~~* ***TOD (5-8 p.m.) R****~~r~~ate****, as determined by SMUD****.*

Effective January 1, 2022, add the months for each season in the rates table in Section II, Subsections A and B in Rate Schedule R-TOD and remove the following language:

*~~*Non-Summer Season includes Fall (Oct 1 – Nov 30), Winter (Dec 1 – Mar 31) and Spring (Apr 1 – May 31) periods.~~*

All of the recommended changes are specified in Rate Schedule R-TOD included in Volume 2 of this Report.

Residential Critical Peak Pricing Rate

Purpose

SMUD's residential standard rates are designed to provide price signals to customers to let them know when conserving energy is most beneficial and will save them money. However, these price signals are designed for conditions seen on days with average energy use, not for those few hours during the year when the demand for energy is so high it puts stress on the grid, such as during a heat wave. To address the costs and environmental impact of those few hours, SMUD is proposing an optional Critical Peak Pricing (CPP) Rate.

Staff recommends the CPP Rate be based on the Time-of-Day (TOD 5-8 p.m.) rate structure, except SMUD may call a Critical Peak Price Event (CPP Event) during those summer hours when the grid is most impacted. During a CPP Event, the price of energy will increase by a fixed amount in cents per kWh (CPP Event Price), regardless of the time of day. This will encourage customers to reduce their energy consumption, which reduces the stress on the grid and the need for less environmentally friendly power plants when the demand of power is high. In exchange, customers will receive a corresponding discount on the energy that they use during the Mid-Peak and Off-Peak hours during the summer months. This rate is financially neutral, as the discount includes compensation for the estimated reduction of SMUD's costs to keep the lights on for all customers during those times when the grid is more impacted.

Staff recommends that CPP Events range from 1 to 4 hours, and that events not be called more than once a day. A CPP Event may be called any day in the summer months, June through September, including holidays and weekends, up to 50 hours per summer. CPP Events may span more than one time-of-day period. CPP Events will be communicated, likely through email or text message, by SMUD a day in advance. However, in the event of a system emergency, such as a strain on the power grid during an extreme heatwave or a wildfire that impacts transmission, announcements may occur the same day as the event.

CPP Events often happen during the hottest days of the summer when demand is highest. Energy produced during those days is generally very expensive and has more carbon than what is produced on cooler days. As demand for energy increases, market prices for power increase, and plants that are typically not economical to run during normal conditions will be turned on. However, those power plants tend to produce more carbon than other power sources. Reducing energy consumption during those times will allow customers to reduce their energy bill and help SMUD and the environment at the same time. SMUD tested a residential pilot CPP rate[3] with a time-of-day rate structure in 2012 and 2013 and the results were very satisfactory, with overall load reduction of 13% during event hours.

The most important aspect of customers participating in the proposed CPP Rate is they can be part of the solution to build a zero carbon future and help us improve reliability by reducing load when the system is under stress. Customers with battery storage have an additional incentive to be part of the solution through staff's recommendation that energy exported to the grid during a CPP Event receive compensation at the CPP Event Price. This will allow customers that invest in battery storage to maximize their return on investment, while helping the grid handle the increased load on days with the highest demand.

Customers that participate in a qualified program, such as the planned smart thermostat program, may also participate in the CPP Rate, enabling them to reduce their bills, assist SMUD in reducing system load and help the environment.

The discount and CPP Event Price will be posted on smud.org and may be updated annually to account for changes in market conditions and customer enrollment, at SMUD's discretion.

Staff recommends the optional CPP Rate go into effect June 1, 2022 for customers participating in a qualified program and customers on Rate Schedules NEM1 and SSR that have battery storage. Participation in the rate is capped at 30,000 eligible residential customers at any given time.

Bill Impact

If customers shift their energy outside of the CPP Event time period as was demonstrated in the SPO pilot, and SMUD is able to reduce the cost of providing power during the system peak, the CPP Rate will have a neutral financial impact. The more a customer reduces their energy consumption during CPP Events, the more money they will save on their SMUD bill. However, if they do not reduce their energy consumption during CPP Events, they will pay a premium. On average, SMUD expects customers to save approximately $4 to $16 per summer, but the savings could be as high as $30 depending on the

[3] smud.org/SPOpilot

customer's energy usage pattern. If customers do not reduce their energy during CPP Events they could see an average increase to their bill of $2.30 per summer.

Revenue Impact

The CPP Rate is designed to have a neutral financial impact. However, there could be an impact to revenue if fewer CPP Events are called than anticipated. Customers will not experience the increased CPP Event Price but will still receive the rate discounts outside the Peak time period.

Recommendation

Effective January 1, 2022, add Subsection C to Section I in Rate Schedule R-TOD as follows:

C. Optional Critical Peak Pricing (CPP) Rate (rate category RTC1 and RTC2)

1. 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 Solar and Storage Rate incentive program are required to enroll in this rate for a duration as determined by SMUD program rules posted on www.smud.org.

2. A maximum of 30,000 customers may be enrolled in this rate at any given time.

3. CPP Events may range from one to four hours, but not more than once per day. CPP Events may be called during any hour of the day during summer months, including holidays and weekends, up to 50 hours per summer. CPP Events may span multiple time-of-day periods.

4. CPP Events will be announced by SMUD a day in advance. However, in the event of a system emergency, announcements may occur the same day as the event.

5. 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.

Summer (Jun 1 - Sept 30)	**Peak**	Weekdays between 5:00 p.m. and 8:00 p.m.
	Mid-Peak	Weekdays between noon and midnight except during the Peak hours.
	Off-Peak	All other hours, including weekends and holidays[1].
Non-Summer (Oct 1 - May 31)	**Peak**	Weekdays between 5:00 p.m. and 8:00 p.m.
	Off-Peak	All other hours, including weekends and holidays[1].

[1] *See Section V. Conditions of Service*

Effective January 1, 2022, add Subsection C to Section II in Rate Schedule R-TOD as follows:

C. Optional Critical Peak Pricing Rate

1. The CPP Rate base prices per time-of-day period are the same as the prices per time-of-day period for TOD (5-8 p.m.).

2. The CPP Rate provides a discount per kWh on the Mid-Peak and Off-Peak prices during summer months.

3. During CPP Events, customers will be charged for energy used at the applicable time-of-day period rate plus the CPP Rate Event Price per kWh as shown on www.smud.org.

4.During CPP Events, energy exported to the grid will be compensated at the CPP Rate Event Price per kWh as shown on www.smud.org.

5. The CPP Rate Event Price and discount will be updated annually at SMUD's discretion and posted on www.smud.org

Customers electing the optional CPP Rate may also receive the Electric Vehicle discount. The CPP Rate will follow new rates nomenclature as determined by SMUD.

Revisions described above are detailed in Volume 2 of this Report.

Changes to Commercial Rates

Rate Increase for Commercial and Agricultural Rates

Purpose

The proposed 1.5% rate increase on March 1, 2022 and 2.0% on January 1, 2023 will be applied equally to all rate components of SMUD's commercial and agricultural rates. These rate components include the following:

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

Bill Impact

On average, SMUD's commercial and agricultural customers will see an increase on their annual bill of 1.5% in 2022* and 2.0% in 2023.

*The rate increase goes into effect March 1, 2022.

Revenue Impact

With the proposed rate increase, SMUD expects to collect additional revenue from all commercial and agricultural classes of approximately $9 million for March through December 2022 and $26 million for January through December 2023.

Recommendation

Staff recommends adoption of the 1.5% rate increase on March 1, 2022 and 2.0% on January 1, 2023 for all agriculture and commercial rates. Revisions described above are detailed in the AG, CHP, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, DWS and GS-TDP rate schedules included in Volume 2 of this Report.

Implementation of Commercial Rate Restructure

Purpose

On August 20, 2020, the SMUD Board approved postponing the implementation of the commercial rate restructure for one year, with the transition completing no later than May 31, 2022. The Board originally approved the commercial rate restructure in the 2019 rate action to take effect in the first part of 2021. However, in 2020, the COVID-19 pandemic impacted SMUD's operations and shifted priorities, with staff focusing on providing support and relief to ease COVID-19 impacts to customers. In addition, postponing the implementation for one year would give customers more time to adapt to the "new normal" created by COVID-19, which should provide a better customer experience through the transition.

In order to further improve the customer experience, staff recommends starting the initial transition from the legacy commercial rates to the restructured commercial rates as early as October 1, 2021.

Bill Impact

As described in the Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services, dated March 21, 2019, the commercial rate restructure was designed to be revenue neutral by rate category. Changing the timing of the restructure is not expected to create additional bill impacts.

Revenue Impact

As described in the Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services, dated March 21, 2019, the commercial rate restructure was designed to be revenue neutral by rate category. Changing the timing of the restructure is not expected to create additional revenue impacts.

Recommendation

Effective September 17, 2021, staff recommends moving the transition language from Section I, Subsections A and B, to a new Section II. Transition to Restructured Commercial & Industrial Time-of-Day Rates in Rate Schedules CI-TOD2, CI-TOD3 and CI-TOD4.

Effective September 17, 2021, staff recommends replacing the language in Section II of Rate Schedule CI-TOD1 with the following language:

II. Transition to Restructured Commercial & Industrial Time-of-Day Rates

1. *The Legacy commercial rates (GSN_T and GSS_T) will be closed to new customers October 1, 2021.*
2. *Existing customers on the Legacy commercial rates will gradually transition as determined by SMUD to the new restructured Commercial & Industrial Time-of-Day rates (CITS-0 and CITS-1) beginning the first full billing cycle in October 2021.*
3. *Once a customer has been transitioned to the new restructured Commercial & Industrial Time-of-Day rate, they cannot return to the closed Legacy rate(s).*

Effective September 17, 2021, staff recommends replacing the language in Section II of Rate Schedule CI-TOD2 with the following language:

II. Transition to Restructured Commercial & Industrial Time-of-Day Rates

1. *The Legacy commercial rates (GUS_S and GUP_S) will be closed to new customers October 1, 2021.*
2. *Existing customers on the Legacy commercial rates will gradually transition as determined by SMUD to the new restructured Commercial & Industrial Time-of-Day rates (CITS-2 and CITP-2) beginning the first full billing cycle in October 2021.*
3. *Once a customer has been transitioned to the new restructured Commercial & Industrial Time-of-Day rate, they cannot return to the closed Legacy rate(s).*

Effective September 17, 2021, staff recommends replacing the language in Section II of Rate Schedule CI-TOD3 with the following language:

II. Transition to Restructured Commercial & Industrial Time-of-Day Rates

1. *The Legacy commercial rates (GUS_M, GUP_M and GUT_M) will be closed to new customers October 1, 2021.*
2. *Existing customers on the Legacy commercial rates will gradually transition as determined by SMUD to the new restructured Commercial & Industrial Time-of-Day rates (CITS-3, CITP-3, and CITT-3) beginning the first full billing cycle in October 2021.*
3. *Once a customer has been transitioned to the new restructured Commercial & Industrial Time-of-Day rate, they cannot return to the closed Legacy rate(s).*

Effective September 17, 2021, staff recommends replacing the language in Section II of Rate Schedule CI-TOD4 with the following language:

II. Transition to Restructured Commercial & Industrial Time-of-Day Rates

1. *The Legacy commercial rates (GUS_L, GUP_L and GUT_L) will be closed to new customers October 1, 2021.*
2. *Existing customers on the Legacy commercial rates will gradually transition as determined by SMUD to the new restructured Commercial & Industrial Time-of-Day rates (CITS-4, CITP-4, and CITT-4) beginning the first full billing cycle in October 2021.*
3. *Once a customer has been transitioned to the new restructured Commercial & Industrial Time-of-Day rate, they cannot return to the closed Legacy rate(s).*

Effective September 17, 2021, staff recommends modifying Section III, Subsection A of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4 by adding the closing date, October 1, 2021, to the title of Subsection A and the following sentence after the Legacy Rate prices:

All customers on these rates will be transitioned to the new restructured rates as early as October 1, 2021.

Effective September 17, 2021, staff recommends updating the language after the price table in Section III, Subsection C in Rate Schedule CI-TOD1 as follows:

*New restructured commercial rates beyond ~~2021~~**2023** are effective as shown in Section ~~VII~~**IX**. Transition Schedule.*

Effective September 17, 2021, staff recommends updating the language after the price table in Section III, Subsection B in Rate Schedules CI-TOD2, CI-TOD3 and CI-TOD4 as follows:

*New restructured commercial rates beyond ~~2021~~**2023** are effective as shown in Section ~~VII~~**IX**. Transition Schedule.*

Effective September 17, 2021, staff recommends adding the Summer Super Peak Demand Charge to Section V, Subsection D of Rate Schedules CI-TOD2, CI-TOD3 and CI-TOD4 as follows:

*In addition to the Generator Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule. These charges include System Infrastructure Fixed Charges, Site Infrastructure Charges, **Summer Super Peak Demand Charge,** Summer Peak Demand Charges, as well as electricity usage charges for SMUD-provided power.*

Effective September 17, 2021, staff recommends adding the Maximum Demand Charge to Section V, Subsection D of Rate Schedules CI-TOD1 as follows:

*In addition to the Generator Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule, including, but not limited to, System Infrastructure Fixed Charges, Site Infrastructure Charges, **Maximum Demand Charge,** Summer Peak Demand Charges ~~(if applicable)~~ and electricity usage charges for SMUD-provided power.*

Effective September 17, 2021, staff recommends updating the date the Legacy commercial rates will close, October 1, 2021, in Section VII, Subsection A of Rate Schedules CI-TOD2, CI-TOD3, and CI-TOD4.

Effective September 17, 2021, staff recommends modifying the title of Section VII, Subsection A of Rate Schedule CI-TOD1 as follows:

B. Legacy ~~GSN_T, GSS_T and GFN~~**Time-of-Use Billing Periods (closed as of October 1, 2021)**

Effective September 17, 2021, staff recommends adding the Summer Super Peak Demand Charge to Section VIII, Subsection B in Rate Schedules CI-TOD2, CI-TOD3 and CI-TOD4.

All of the recommended changes are specified in Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 included in Volume 2 of this Report.

Miscellaneous Commercial Updates

Purpose

In the 2019 Rate Action, the Board authorized staff to update the names of the new restructured commercial rates. Table 8 shows the new rate schedule names and Table 7 shows the new rate category names.

Table 7 – Updated Rate Schedule Names

Size Range	Legacy Rate Schedule	Updated Rate Schedule	Legacy Rate Category	Updated Rate Category
0-299 kW	GS	CI-TOD1	GSN_T	CITS-0
			GSS_T	CITS-1
300-499 kW	GS-TOD3	CI-TOD2	GUS_S	CITS-2
			GUP_S	CITP-2
500-999 kW	GS-TOD2	CI-TOD3	GUS_M	CITS-3
			GUP_M	CITP-3
			GUT_M	CITT-3
1000+ kW	GS-TOD1	CI-TOD4	GUS_L	CITS-4
			GUP_L	CITP-4
			GUT_L	CITT-4

Staff recommends making several modifications to the Commercial & Industrial rate schedules to allow customers who install storage to have their maximum demand adjusted based on the anticipated reduction in kW, and to improve consistency between commercial rate schedules and clarity.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, staff recommends modifying Section V, Subsection C of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4 as follows:

> *C. Implementation of Energy Efficiency or Installation of New Solar/Photovoltaic **or Storage** Systems*
>
> *Customers who implement a SMUD-sponsored Energy Efficiency program or who install a SMUD-approved solar/photovoltaic **or storage** system to offset their on-site energy usage may request, in writing, within 30 days of the project completion and commissioning, an adjustment to their ~~billing demand~~ **twelve month maximum demand** based on the anticipated reduction in kW from the Energy Efficiency Project Worksheet. The adjusted ~~billing demand~~ **twelve month maximum demand** is valid for 12 months or until it is exceeded by actual maximum demand*

Effective September 17, 2021, staff recommends moving Section V, Subsection D to a new Section VII Commercial & Industrial Time-of-Day Billing Periods, with the remaining section numbers updated accordingly for Rate Schedules CI-TOD2, CI-TOD3 and CI-TOD4.

Effective September 17, 2021, staff recommends adding the holidays in Section VII, Subsection A of Rate Schedules CI-TOD2, CI-TOD3, and CI-TOD4.

Effective September 17, 2021, staff recommends modifying the title of Section VII, Subsection B of Rate Schedule CI-TOD1 as follows:

> B. Restructured ~~CITS-0 and CITS-1~~**Time-of-Day Billing Periods**

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

Modifications to Rate Schedule CI-TOD1

Purpose

Staff recommends making a few minor changes to Rate Schedule CI-TOD1 to reflect the new rate structures as a result of commercial rate restructure.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, staff recommends updating the Section I, Subsection A of Rate Schedule CI-TOD1 as follows:

> *These rates apply to Commercial & Industrial Time-of-Day accounts with a monthly maximum demand of 20 kW or less. Whenever the monthly maximum demand exceeds 20 kW for any three consecutive months and the monthly energy usage is at least 7,300 kWh for any three consecutive months within a 12-month period, the account will be billed on the applicable ~~demand~~ rate. To return to the ~~nondemand~~ **CITS-0** rate, the monthly maximum demand must be 20 kW or less for 12-consecutive months or the usage must be less than 7,300 kWh for 12 consecutive months.*

Effective September 17, 2021, staff recommends updating the Section I, Subsection C of Rate Schedule CI-TOD1 as follows:

> *These rates apply to Commercial & Industrial Time-of-Day accounts with a monthly maximum demand of at least 21 kW but does not exceed 299 kW for any three consecutive months and monthly energy usage of at least 7,300 kWh for any three consecutive months within a 12-month period. The customer will be billed on this ~~demand~~ rate unless the monthly usage is less than 7,300 **kWh** for 12 consecutive months; or the maximum demand falls below 21 kW for 12 consecutive months; or the monthly maximum demand exceeds 299 kW for three consecutive months.*

Revisions described above are detailed in Rate Schedule CI-TOD1 included in Volume 2 of this Report.

Modifications to Rate Schedule CI-TOD2

Purpose

Staff recommends updating language in Rate Schedule CI-TOD2 to clarify the applicability for customers served at the primary voltage level. Rate Schedule CI-TOD2 applies to all accounts with a demand of at least 300 kW for three consecutive months, but not greater than 499 kW for three consecutive months during the preceding 12 months. However, the applicability language also states Rate Schedule CI-TOD2 is mandatory for all accounts previously served at the primary level on Rate Schedule GS. As Rate Schedule GS has not included a rate category that serves at the primary level in many years, staff recommends clarifying the applicability language to reflect current practices.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, staff recommends modifying Section I of Rate Schedule CI-TOD2 as follows:

> *This Rate Schedule CI-TOD2 applies to single- or three-phase service, delivered at standard voltages designated by SMUD as available at the customer's premises. This schedule is mandatory for all commercial and industrial (C&I) accounts with monthly maximum demand of at least 300 kW for three consecutive months, but not greater than 499 kW for three consecutive months during the preceding 12 months~~, and for all accounts previously served at the primary level on Rate Schedule GS~~. Accounts* ***served at the secondary service voltage level*** *will remain on the CI-TOD2 rate schedule unless monthly maximum demand falls below 300 kW for 12 consecutive months or exceeds 499 kW for three consecutive months.* ***Accounts served at the primary service voltage level will remain on the CI-TOD2 rate schedule unless monthly maximum demand exceeds 499 kW for three consecutive months.*** *This schedule is also mandatory for accounts with contract capacity of at least 300 kW, but not greater than 499 kW. The demand for any month shall be the maximum 15-minute kW delivery during the month.*

Revisions described above are detailed in Rate Schedule CI-TOD2 included in Volume 2 of this Report.

Modifications to Rate Schedule AG

Purpose

Staff recommends updating the proration language in Rate Schedule AG by adding the Maximum Demand Charge to be consistent with current billing practices.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective January 1, 2022, add “Maximum Demand Charge” to the proration language in Section VI, Subsection B. of Rate Schedule AG.

Changes to Street, Traffic and Lighting Rates

Rate Increase for Street/Traffic/Lighting Rates

Purpose

The proposed 1.5% rate increase on March 1, 2022 and 2.0% on January 1, 2023 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. SMUD reviews 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 an increase on their annual bill of 1.5% in 2022* and 2.0% in 2023.

*The rate increase goes into effect March 1, 2022.

Revenue Impact

With the proposed rate increases, SMUD expects to collect added revenue of approximately $12,000 for March through December 2022 and $34,000 for January through December 2023 from all lighting classes. This increase does not apply to lighting fees.

Recommendation

Staff recommends adoption of the 1.5% rate increase on March 1, 2022 and 2.0% on January 1, 2023 for Street/Traffic/Lighting Rates. Revisions described above are detailed in the NLGT, SLS, TC ILS and TSS rate schedules included in Volume 2 of this Report.

Miscellaneous Changes to Rate Schedule SLS

Purpose

There are lighting installations where public agencies choose to have SMUD own and maintain the street lighting system. In these instances, SMUD charges the public agency for the electricity used as well as a monthly charge for the installation and ongoing maintenance of the street lighting system. These street lighting systems are referred to as district owned and maintained lights (DOM). Rate Schedule SLS includes rate SL_DOM_M, which is a metered rate that applies to district owned and maintained streetlights. Since this rate was added in 2015, no customers have been billed under this rate. Staff has

determined that the district owned and maintained lights cannot be equipped with a meter because these streetlights are located on SMUD distribution poles and are directly connected from our overhead secondary service. This means there is no physical place to install a meter between the connection and the streetlight. For these reasons, no new customers are expected to be billed under this rate going forward. Therefore, staff is recommending removing the SL_DOM_M rate from Rate Schedule SLS.

In addition, in a previous update to Rate Schedule SLS the language, “Effective the first full billing cycle after the following date(s), the charge will be as follows:” was removed from the unmetered SL_DOM section in error. Staff is recommends adding back this language to those sections ensure the language in rate schedule reflects current processes.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective March 1, 2022, remove all references and prices for SL_DOM_M from Rate Schedule SLS and add, “Effective the first full billing cycle after the following date(s), the charge will be as follows:” in Section V, Subsection A.

The revisions are detailed in Volume 2 of this Report.

Miscellaneous Rate Changes

Miscellaneous Updates Due to Commercial Rate Restructure Delay

Purpose

On August 20, 2020, the Board approved delaying the commercial rate restructure implementation for one year. The commercial rate restructure replaces the “Summer Super Peak Demand Charge” with the “Summer Peak Demand Charge.” With the implementation delay, the “Summer Super Peak Demand Charge” needs to be added back into several rate schedules. Staff recommends adding the “Summer Super Peak Demand Charge” back into Rate Schedules CB, EAPR, EDR and NEM1.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, modify Rate Schedule CB by adding “Summer Super Peak Demand Charge” to Section VI, Subsection B.

Effective September 17, 2021, modify Rate Schedule EAPR by adding “Summer Super Peak Demand Charge (kW)” to Section V, Subsection A.

Effective September 17, 2021, modify Rate Schedule EDR by adding “Summer Super Peak Demand Charge” to Section III, Subsections A and B.

Effective September 17, 2021, modify Rate Schedule NEM1 by adding “Summer Super Peak Demand Charge” to Section V, Subsection A.

Revisions described above are detailed in Rate Schedules CB, EAPR, EDR and NEM1 included in Volume 2 of this Report.

Modifications to Generator Standby Service Language

Purpose

Staff recommends updating the Generator Standby Service language in Rate Schedules AG, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, R and R-TOD to make it clearer that customers with qualifying renewable generation are exempt from paying the Generator Standby Service Charge.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, staff recommends deleting Section V, Subsection D, Subsection 2 of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4.

Effective September 17, 2021, staff recommends modifying the following language in Section V, Subsection D of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 as follows:

> *The Generator Standby Service Charge will be waived **only** for qualifying **renewable** ~~net metered~~ generation~~. Refer to~~ **under** Rate Schedules NEM1 and ~~NEM2~~**SSR**.*

Effective March 1, 2022, staff recommends deleting Section IV, Subsection E, Subsection 2 of Rate Schedule R.

Effective March 1, 2022, staff recommends modifying the following language in Section IV, Subsection E of Rate Schedule R as follows:

> *The Generator Standby Service Charge will be waived **only** for qualifying **renewable** ~~net metered~~ generation~~. Refer to~~ **under** Rate Schedules NEM1 and ~~NEM2~~**SSR**.*

Effective March 1, 2022, staff recommends deleting Section IV, Subsection D, Subsection 2 of Rate Schedule R-TOD.

Effective March 1, 2022, staff recommends modifying the following language in Section IV, Subsection E of Rate Schedule R-TOD as follows:

> *The Generator Standby Service Charge will be waived **only** for qualifying **renewable** ~~net metered~~ generation~~. Refer to~~ **under** Rate Schedules NEM1 and ~~NEM2~~**SSR**.*

Effective March 1, 2022, staff recommends deleting Section IV, Subsection A, Subsection 2 of Rate Schedule AG.

Effective March 1, 2022, staff recommends modifying the following language in Section IV, Subsection A of Rate Schedule AG as follows:

> *The Generator Standby Service Charge will be waived* ***only*** *for qualifying* ***renewable*** ~~*net metered*~~ *generation*~~*. Refer to*~~ ***under*** *Rate Schedules NEM****1*** *and* ~~*NEM2*~~***SSR****.*

Revisions described above are detailed in Rate Schedules AG, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD45, R and R-TOD included in Volume 2 of this Report.

Modifications to Rate Schedule EAPR

Purpose

On June 15, 2017, the Board approved a restructure of the EAPR discount. The restructure was implemented over a period of three years, beginning in 2019 and concluding in 2021. The discounts in 2021 will carry forward until otherwise modified by staff and approved by the Board. Staff recommends removing language in the EAPR Rate Schedule related to the transition period because such transition already occurred.

Additionally, staff recommends adding the Maximum Demand Charge to the list of rate components that qualify for the EAPR discount. The Maximum Demand Charge will apply to commercial customers with a maximum demand less than 20kW and is part of the commercial rate restructure going into effect as early as October 1, 2021 though the price of the Maximum Demand Charge will be $0 until 2024.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, staff recommends adding “Maximum Demand Charge (kW)” to Section V. Subsection A in Rate Schedule EAPR.

Effective January 1, 2022, staff recommends removing the following language from Section III of Rate Schedule EAPR:

> *Beginning as early as the first full bill cycle in 2021*

Effective January 1, 2022, staff recommends removing the reference to 2021 in the table in Section III, Subsection 2 of Rate Schedule EAPR.

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

Modification to Rate Schedule EDR

Purpose

In 2012, SMUD finished installing smart meters to save energy, reduce costs and increase reliability. With this change, we moved away from using meter readers to provide meter reads and to rely on electronic meter data, which is obtained on a billing period, typically every 27 to 34 days. Most of the rate schedules were updated to accommodate this change, but there is one remaining reference to meter reads in the Economic Development Rate (EDR) Rate Schedule. Staff recommends updating the language in Rate Schedule EDR to align with the use of digital communicating meters.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, modify Section IV, Subsection B of Rate Schedule EDR as follows:

> *New customers must apply for the EDR option prior to commencement of service with SMUD. Temporary service is not eligible for the EDR option. Applicants will have 12 months from the agreement date to reach the maximum demand of at least 300 kW load requirement. The effective start date for the EDR for new customers is the ~~date of the first meter read for billing~~* ***first billing period*** *after three consecutive months with a maximum demand of at least 300 kW.*

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

Modifications to Rate Schedule HGA

Purpose

SMUD owns and operates hydroelectric generation in the south fork of the American River. Hydroelectric generation is highly impacted by precipitation levels, generating more energy in years with a lot of precipitation, and less energy in dry years. The more hydroelectric energy that SMUD can generate, the less energy SMUD needs to purchase on the open market. Market prices of power are typically higher than SMUD's cost of generating power in the hydroelectric facilities.

To reduce financial volatility from swings in precipitation, SMUD established a Hydro Rate Stabilization Fund (HRSF) on May 15, 2008, by Board Resolution 08-05-11. In years with more than typical amounts of 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 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 Rate Adjustment (HGA) will be charged on customer bills to cover the increased cost of purchasing replacement power on the open market.

In 2014, the new Federal Energy Regulatory Commission (FERC) license went into effect, with new requirements for recreation and environmental flows. These new restrictions reduce the amount of energy that SMUD can produce per inch of precipitation.

When the HGA Rate Schedule was adopted, SMUD's hydro system was estimated to generate approximately 35,000 megawatt hours (MWh) per inch of precipitation. After analyzing data since the implementation of Rate Schedule HGA and generation capabilities under these new FERC requirements, staff recommends reducing the generation amount in the HGA rate schedule from 35,000 MWh/inch to 30,000 MWh/inch.

Reducing the generation amount will reduce the amount transferred into and out of the HRSF, reducing the likelihood of needing an HGA. If an HGA is needed, the amount of that HGA will be reduced on customer bills.

Bill Impact

This change will reduce the likelihood of an HGA being charged on customer bills. In the event that an HGA is needed, the amount of the HGA on customer bills will be smaller.

Revenue Impact

This change will reduce the amount that will be transferred into and out of the HRSF by approximately 14%. When money is transferred into the HRSF, revenue is reduced, and when money is transferred out of the HRSF, revenue is increased. If the amount being transferred into or out of the HRSF is reduced, the impact on revenue will be smaller.

Recommendation

Effective January 1, 2022, modify Section II, Subsection A of Rate Schedule HGA as follows:

> *SMUD estimates that each inch of precipitation results in ~~35,000~~ **30,000** megawatt hours (MWh) of generation.*

Effective January 1, 2022, modify Section III. Subsection B of Rate Schedule HGA as follows:

> *Generation Conversion*
>
> *± IPV x ~~35,000~~ **30,000** MWh/inch = ± MWh*
>
> *The variance of hydro generation, in megawatt hours, equals the inches of precipitation variance x ~~35,000~~ **30,000** MWh/inch.*

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

Modifications to Rate Schedule RBC

Purpose

With the proposed Solar and Storage Rate and the implementation of the commercial rate restructure, the Renewable Energy Bill Credit (RBC) rate schedule needs to be updated. Staff recommends updating the reference to the NEM rate schedule to both the NEM1 and SSR rate schedules. Additionally, staff recommends adding the "Summer Peak Demand Charge" to Rate Schedule RBC.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, staff recommends modifying Section VI, Subsection C of Rate Schedule RBC as follows:

> *Customers taking service on this Rate Schedule are not eligible to take service on Rate Schedule**s** ~~Net Energy Metering (NEM)~~* ***NEM1 or SSR***.

Effective September 17, 2021, staff recommends adding "Summer Peak Demand Charge" to Section IV, Subsection A and Section VI, Subsection A of Rate Schedule RBC.

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

Changes to Rules and Regulations

Rule 13 – Temporary Service

Purpose

SMUD provides temporary service to operations of a speculative nature or questionable permanency, such as a temporary building at a construction site, under Rule and Regulation 13. Customers pay a temporary charge for the estimated cost of installing and removing the facilities required to provide the temporary service. Temporary service will be considered permanent after three years from the date when it was first established. When this occurs, the customer may request a refund of the temporary charges. The rule states that payments made in excess of meter and service charges shall be refunded without interest, but it is unclear what meter and service charges this refers to. Staff recommends updating the language to clarify that the refund of these temporary charges would first apply to any delinquent meter and service charges, with any remaining funds returned to the customer.

Bill Impact

None.

Revenue Impact

None.

Recommendation

Effective September 17, 2021, amend Section II in Rule and Regulation 13 as follows:

> *Within three years of the date when service was first delivered, service will be considered permanent and payments made in excess of* ***delinquent*** *meter and service charges shall be refunded without interest when a customer served under this rule has requested a refund of temporary charges, and has:*
>
> 1. *Installed sewer, water, and foundation; or*
> 2. *Operated the same or greater electrical load originally installed for a period of 36 consecutive months from the date when service was first delivered under this rule.*

Revisions described above are detailed in Rule and Regulation 13 included in Volume 2 of this Report.

Detail of Rate Changes

Years 2022 and 2023 include proposed rate increases.

Residential Rates

Season and Charge Component	Unit	Proposed	
		March 1, 2022	January 1, 2023
Residential Time-of-Day (5-8 p.m. Peak) Rate (RT02)			
System Infrastructure Fixed Charge	per month	$23.05	$23.50
Non-Summer Peak	per kWh	$0.1516	$0.1547
Non-Summer Off-Peak	per kWh	$0.1098	$0.1120
Summer Peak	per kWh	$0.3215	$0.3279
Summer Mid-Peak	per kWh	$0.1827	$0.1864
Summer Off-Peak	per kWh	$0.1323	$0.1350
Electric Vehicle Credits[1]	per kWh	-$0.0150	-$0.0150
Residential Time-of-Day (4-7 p.m. Peak) Rate (RT01)			
System Infrastructure Fixed Charge	per month	$23.05	$23.50
Summer Super Peak	per kWh	$0.4200	$0.4284
Peak	per kWh	$0.1680	$0.1713
Off-Peak	per kWh	$0.0967	$0.0986
Electric Vehicle Credits[1]	per kWh	-$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.

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Residential Fixed Rate (RF01)			
System Infrastructure Fixed Charge	per month	$23.05	$23.50
Non-Summer	per kWh	$0.1170	$0.1194
Summer	per kWh	$0.1870	$0.1907
Legacy Residential Rate (Closed)			
System Infrastructure Fixed Charge	per month	$23.05	$23.50
Winter[2]	per kWh	$0.1298	$0.1324
Summer	per kWh	$0.1486	$0.1516
Master-Metered Multifamily Accommodation and Mobile Home Park Energy Rate (RSMM) (Closed)			
System Infrastructure Fixed Charge	per month	$23.05	$23.50
Non-Summer	per kWh	$0.1298	$0.1324
Summer	per kWh	$0.1486	$0.1516

[2] Winter is the same time period as Non-Summer.

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Miscellaneous Residential Pricing			
Standby generation (Secondary level)	per kW	$7.562	$7.713
Three-phase power	per month	$49.45	$50.45

Agricultural Rates

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Non-Demand ASN Rate (30 kW and below)			
System Infrastructure Fixed Charge	per month	$12.60	$12.85
Winter kWh	per kWh	$0.1398	$0.1428
Summer kWh	per kWh	$0.1534	$0.1564
Demand ASD Rate (Over 30 kW)			
System Infrastructure Fixed Charge	per month	$29.25	$29.80
Site Infrastructure Charge <= 30 kW	per kW	$0.000	$0.000
Site Infrastructure Charge > 30 kW	per kW	$2.893	$2.951
Winter First 8,750 kWh	per kWh	$0.1549	$0.1580
Winter Additional kWh	per kWh	$0.1216	$0.1240
Summer First 8,750 kWh	per kWh	$0.1484	$0.1514
Summer Additional kWh	per kWh	$0.1074	$0.1095
Non-Demand Time-of-Use AON Rate (30 kW and below)			
System Infrastructure Fixed Charge	per month	$16.90	$17.25
Winter On-Peak	per kWh	$0.1609	$0.1641
Winter Off-Peak	per kWh	$0.1371	$0.1399
Summer On-Peak	per kWh	$0.2332	$0.2379
Summer Off-Peak	per kWh	$0.1254	$0.1279
Demand Time-of-Use AOD Rate (Over 30 kW)			
System Infrastructure Fixed Charge	per month	$101.75	$103.80
Winter Site Infrastructure Charge	per kW	$2.883	$2.940
Winter On-Peak	per kWh	$0.1602	$0.1634
Winter Off-Peak	per kWh	$0.1360	$0.1388
Summer Site Infrastructure Charge	per kW	$4.030	$4.110
Summer On-Peak	per kWh	$0.2478	$0.2528
Summer Off-Peak	per kWh	$0.1322	$0.1348

Small Commercial Rates (0-299 kW)

Legacy Commercial Rates

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Legacy GSN_T: Service at Secondary Voltage Level			
System Infrastructure Fixed Charge	per month	$23.15	$23.60
Winter	per kWh	$0.1492	$0.1522
Summer On-Peak	per kWh	$0.3444	$0.3513
Summer Off-Peak	per kWh	$0.1260	$0.1285
GFN: Service at Secondary Voltage Level			
System Infrastructure Fixed Charge	per month	$10.30	$10.50
All	per kWh	$0.1509	$0.1539
Legacy GSS_T: Service at Secondary Voltage Level			
System Infrastructure Fixed Charge	per month	$28.10	$28.70
Site Infrastructure Charge	per kW	$8.688	$8.862
Winter	per kWh	$0.1170	$0.1194
Summer On-Peak	per kWh	$0.2987	$0.3047
Summer Off-Peak	per kWh	$0.1036	$0.1057

Restructured Commercial Rates

Season and Charge Component	Unit	Adopted[1] October 1, 2021	Proposed Rate Increases[2] March 1, 2022	January 1, 2023	2024*	2025*	2026*	2027*	2028*
CITS-0: C&I Secondary 0-20 kW									
System Infrastructure Fixed Charge	per month	$28.40	$28.85	$35.15	$35.65	$36.15	$36.60	$37.10	$37.60
Maximum Demand Charge	per kW	$0.000	$0.000	$0.000	$0.694	$1.387	$2.081	$2.775	$3.468
Non-Summer Peak	per kWh	$0.1430	$0.1451	$0.1440	$0.1407	$0.1374	$0.1341	$0.1307	$0.1274
Non-Summer Off-Peak	per kWh	$0.1393	$0.1414	$0.1364	$0.1300	$0.1237	$0.1173	$0.1110	$0.1046
Non-Summer Off-Peak Saver	per kWh	$0.1373	$0.1394	$0.1323	$0.1242	$0.1163	$0.1084	$0.1003	$0.0923
Summer Peak	per kWh	$0.2355	$0.2390	$0.2554	$0.2645	$0.2736	$0.2827	$0.2917	$0.3009
Summer Off-Peak	per kWh	$0.1331	$0.1351	$0.1349	$0.1324	$0.1300	$0.1277	$0.1253	$0.1229
CITS-1: C&I Secondary 21-299 kW									
System Infrastructure Fixed Charge	per month	$88.05	$89.35	$158.30	$225.40	$292.50	$359.65	$425.25	$425.25
Site Infrastructure Charge	per kW	$7.930	$8.049	$7.568	$6.916	$6.274	$5.622	$4.969	$4.969
Summer Peak Demand Charge	per kW	$1.680	$1.705	$3.468	$5.208	$6.937	$8.676	$10.415	$10.415
Non-Summer Peak	per kWh	$0.1169	$0.1187	$0.1230	$0.1249	$0.1267	$0.1287	$0.1306	$0.1306
Non-Summer Off-Peak	per kWh	$0.1136	$0.1153	$0.1158	$0.1138	$0.1119	$0.1101	$0.1082	$0.1082
Non-Summer Off-Peak Saver	per kWh	$0.1078	$0.1094	$0.1030	$0.0945	$0.0859	$0.0773	$0.0691	$0.0691
Summer Peak	per kWh	$0.1897	$0.1925	$0.1983	$0.2001	$0.2020	$0.2039	$0.2057	$0.2057
Summer Off-Peak	per kWh	$0.1102	$0.1119	$0.1119	$0.1099	$0.1079	$0.1058	$0.1038	$0.1038

1. Includes rescheduled rate implementation beginning October 1, 2021
2. Adopted prices with proposed rate increases and rescheduled rate implementation
*Adopted prices with proposed rate increases, rescheduled rate implementation and are reflective of proposed rate increases for 2022 and 2023. These prices are subject to future rate increases.

Small Commercial TOD Rates (300-499 kW)

Legacy Commercial Rates

Season and Charge Component	Unit	Proposed	
		March 1, 2022	January 1, 2023
Legacy GUS_S: Service at Secondary Voltage Level			
System Infrastructure Fixed Charge	per month	$123.70	$126.15
Site Infrastructure Charge	per kW	$4.344	$4.431
Winter On-Peak	per kWh	$0.1196	$0.1220
Winter Off-Peak	per kWh	$0.0949	$0.0968
Summer Super-Peak Demand Charge	per kW	$8.770	$8.945
Summer Super Peak	per kWh	$0.2299	$0.2345
Summer On-Peak	per kWh	$0.1570	$0.1602
Summer Off-Peak	per kWh	$0.1248	$0.1273
Legacy GUP_S: Service at Primary Voltage Level			
System Infrastructure Fixed Charge	per month	$123.70	$126.15
Site Infrastructure Charge	per kW	$3.898	$3.976
Winter On-Peak	per kWh	$0.1129	$0.1151
Winter Off-Peak	per kWh	$0.0897	$0.0915
Summer Super-Peak Demand Charge	per kW	$7.998	$8.158
Summer Super Peak	per kWh	$0.2187	$0.2231
Summer On-Peak	per kWh	$0.1512	$0.1543
Summer Off-Peak	per kWh	$0.1188	$0.1211

Restructured Commercial Rates

Season and Charge Component	Unit	Adopted[1] October 1, 2021	Proposed Rate Increases[2] March 1, 2022	Proposed Rate Increases[2] January 1, 2023	2024*	2025*	2026*	2027*	2028*
CITS-2: C&I Secondary 300-499 kW									
System Infrastructure Fixed Charge	per month	$201.60	$204.60	$428.35	$649.65	$879.70	$1,116.60	$1,353.60	$1,588.80
Site Infrastructure Charge	per kW	$4.360	$4.425	$4.597	$4.669	$4.742	$4.824	$4.897	$4.969
Summer Peak Demand Charge	per kW	$9.440	$9.582	$9.877	$9.980	$10.094	$10.198	$10.301	$10.415
Non-Summer Peak	per kWh	$0.1194	$0.1212	$0.1236	$0.1251	$0.1266	$0.1281	$0.1295	$0.1311
Non-Summer Off-Peak	per kWh	$0.0964	$0.0979	$0.1000	$0.1015	$0.1029	$0.1044	$0.1059	$0.1074
Non-Summer Off-Peak Saver	per kWh	$0.0956	$0.0970	$0.0990	$0.0933	$0.0873	$0.0812	$0.0752	$0.0691
Summer Peak	per kWh	$0.2153	$0.2185	$0.2195	$0.2186	$0.2177	$0.2168	$0.2158	$0.2148
Summer Off-Peak	per kWh	$0.1356	$0.1376	$0.1333	$0.1277	$0.1219	$0.1160	$0.1101	$0.1043
CITP-2: C&I Primary 300-499 kW									
System Infrastructure Fixed Charge	per month	$154.45	$156.75	$204.95	$249.95	$297.30	$297.30	$297.30	$297.30
Site Infrastructure Charge	per kW	$3.640	$3.695	$3.551	$3.344	$3.127	$3.127	$3.127	$3.127
Summer Peak Demand Charge	per kW	$8.690	$8.820	$9.401	$9.804	$10.218	$10.218	$10.218	$10.218
Non-Summer Peak	per kWh	$0.1141	$0.1158	$0.1249	$0.1333	$0.1434	$0.1434	$0.1434	$0.1434
Non-Summer Off-Peak	per kWh	$0.0924	$0.0938	$0.1033	$0.1125	$0.1235	$0.1235	$0.1235	$0.1235
Non-Summer Off-Peak Saver	per kWh	$0.0907	$0.0921	$0.0939	$0.0869	$0.0784	$0.0784	$0.0784	$0.0784
Summer Peak	per kWh	$0.2075	$0.2106	$0.2016	$0.1918	$0.1805	$0.1805	$0.1805	$0.1805
Summer Off-Peak	per kWh	$0.1326	$0.1346	$0.1277	$0.1201	$0.1113	$0.1113	$0.1113	$0.1113

1. Includes rescheduled rate implementation beginning October 1, 2021
2. Adopted prices with proposed rate increases and rescheduled rate implementation
*Adopted prices with proposed rate increases, rescheduled rate implementation and are reflective of proposed rate increases for 2022 and 2023. These prices are subject to future rate increases.

Medium Commercial TOD Rates (500-999 kW)

Legacy Commercial Rates

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Legacy GUS_M: Service at Secondary Voltage Level			
System Infrastructure Fixed Charge	per month	$123.70	$126.15
Site Infrastructure Charge	per kW	$3.268	$3.334
Winter On-Peak	per kWh	$0.1178	$0.1202
Winter Off-Peak	per kWh	$0.0932	$0.0950
Summer Super-Peak Demand Charge	per kW	$7.998	$8.158
Summer Super Peak	per kWh	$0.2233	$0.2278
Summer On-Peak	per kWh	$0.1538	$0.1568
Summer Off-Peak	per kWh	$0.1183	$0.1207
Legacy GUP_M: Service at Primary Voltage Level			
System Infrastructure Fixed Charge	per month	$123.70	$126.15
Site Infrastructure Charge	per kW	$2.893	$2.951
Winter On-Peak	per kWh	$0.1113	$0.1136
Winter Off-Peak	per kWh	$0.0883	$0.0901
Summer Super-Peak Demand Charge	per kW	$7.359	$7.506
Summer Super Peak	per kWh	$0.2125	$0.2168
Summer On-Peak	per kWh	$0.1482	$0.1512
Summer Off-Peak	per kWh	$0.1126	$0.1148
Legacy GUT_M: Service at Subtransmission Voltage Level			
System Infrastructure Fixed Charge	per month	$327.55	$334.10
Site Infrastructure Charge	per kW	$2.375	$2.423
Winter On-Peak	per kWh	$0.1074	$0.1095
Winter Off-Peak	per kWh	$0.0864	$0.0881
Summer Super-Peak Demand Charge	per kW	$0.000	$0.000
Summer Super Peak	per kWh	$0.2063	$0.2105
Summer On-Peak	per kWh	$0.1389	$0.1416
Summer Off-Peak	per kWh	$0.1109	$0.1132

Restructured Commercial Rates

Season and Charge Component	Unit	Adopted[1] October 1, 2021	Proposed Rate Increases[2] March 1, 2022	Proposed Rate Increases[2] January 1, 2023	2024*	2025*
CITS-3: C&I Secondary 500-999 kW						
System Infrastructure Fixed Charge	per month	$278.60	$282.80	$781.65	$1,440.30	$2,098.90
Site Infrastructure Charge	per kW	$3.610	$3.664	$4.152	$4.566	$4.969
Summer Peak Demand Charge	per kW	$9.070	$9.206	$9.732	$10.073	$10.415
Non-Summer Peak	per kWh	$0.1183	$0.1201	$0.1225	$0.1241	$0.1261
Non-Summer Off-Peak	per kWh	$0.0958	$0.0972	$0.0992	$0.1017	$0.1040
Non-Summer Off-Peak Saver	per kWh	$0.0919	$0.0933	$0.0906	$0.0788	$0.0673
Summer Peak	per kWh	$0.2071	$0.2102	$0.2111	$0.2084	$0.2058
Summer Off-Peak	per kWh	$0.1262	$0.1281	$0.1212	$0.1108	$0.1003
CITP-3: C&I Primary 500-999 kW						
System Infrastructure Fixed Charge	per month	$287.15	$291.45	$297.30	$297.30	$297.30
Site Infrastructure Charge	per kW	$3.020	$3.065	$3.127	$3.127	$3.127
Summer Peak Demand Charge	per kW	$9.870	$10.018	$10.218	$10.218	$10.218
Non-Summer Peak	per kWh	$0.1269	$0.1288	$0.1314	$0.1314	$0.1314
Non-Summer Off-Peak	per kWh	$0.1102	$0.1119	$0.1141	$0.1141	$0.1141
Non-Summer Off-Peak Saver	per kWh	$0.0702	$0.0712	$0.0727	$0.0727	$0.0727
Summer Peak	per kWh	$0.2058	$0.2089	$0.2131	$0.2131	$0.2131
Summer Off-Peak	per kWh	$0.1047	$0.1063	$0.1084	$0.1084	$0.1084
CITT-3: C&I Subtransmission 500-999 kW						
System Infrastructure Fixed Charge	per month	$1,195.45	$1,213.40	$1,237.65	$1,237.65	$1,237.65
Site Infrastructure Charge	per kW	$3.310	$3.360	$3.427	$3.427	$3.427
Summer Peak Demand Charge	per kW	$9.620	$9.764	$9.960	$9.960	$9.960
Non-Summer Peak	per kWh	$0.1099	$0.1115	$0.1138	$0.1138	$0.1138
Non-Summer Off-Peak	per kWh	$0.0918	$0.0932	$0.0950	$0.0950	$0.0950
Non-Summer Off-Peak Saver	per kWh	$0.0597	$0.0606	$0.0618	$0.0618	$0.0618
Summer Peak	per kWh	$0.1848	$0.1876	$0.1913	$0.1913	$0.1913
Summer Off-Peak	per kWh	$0.0890	$0.0903	$0.0922	$0.0921	$0.0921

1. Includes rescheduled rate implementation beginning October 1, 2021
2. Adopted prices with proposed rate increases and rescheduled rate implementation
*Adopted prices with proposed rate increases, rescheduled rate implementation and are reflective of proposed rate increases for 2022 and 2023. These prices are subject to future rate increases.

Large Commercial TOD (1000+ kW)

Legacy Commercial Rates

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Legacy GUS_L: Service at Secondary Voltage Level			
System Infrastructure Fixed Charge	per month	$123.70	$126.15
Site Infrastructure Charge	per kW	$4.608	$4.700
Winter On-Peak	per kWh	$0.1236	$0.1261
Winter Off-Peak	per kWh	$0.0979	$0.0999
Summer Super-Peak Demand Charge	per kW	$0.000	$0.000
Summer Super Peak	per kWh	$0.1925	$0.1964
Summer On-Peak	per kWh	$0.1537	$0.1567
Summer Off-Peak	per kWh	$0.1229	$0.1254
Legacy GUP_L: Service at Primary Voltage Level			
System Infrastructure Fixed Charge	per month	$123.70	$126.15
Site Infrastructure Charge	per kW	$4.415	$4.504
Winter On-Peak	per kWh	$0.1176	$0.1200
Winter Off-Peak	per kWh	$0.0917	$0.0935
Summer Super-Peak Demand Charge	per kW	$0.000	$0.000
Summer Super Peak	per kWh	$0.1587	$0.1619
Summer On-Peak	per kWh	$0.1444	$0.1473
Summer Off-Peak	per kWh	$0.1122	$0.1144
Legacy GUT_L: Service at Subtransmission Voltage Level			
System Infrastructure Fixed Charge	per month	$327.55	$334.10
Site Infrastructure Charge	per kW	$3.512	$3.582
Winter On-Peak	per kWh	$0.1134	$0.1156
Winter Off-Peak	per kWh	$0.0895	$0.0913
Summer Super-Peak Demand Charge	per kW	$0.000	$0.000
Summer Super Peak	per kWh	$0.1541	$0.1572
Summer On-Peak	per kWh	$0.1355	$0.1382
Summer Off-Peak	per kWh	$0.1105	$0.1127

Restructured Commercial Rates

Season and Charge Component	Unit	Adopted[1] October 1, 2021	Proposed Rate Increases[2] March 1, 2022	Proposed Rate Increases[2] January 1, 2023	2024*
CITS-4: C&I Secondary 1000+ kW					
System Infrastructure Fixed Charge	per month	$1,181.05	$1,198.75	$2,319.35	$3,496.60
Site Infrastructure Charge	per kW	$4.630	$4.699	$4.876	$4.969
Summer Peak Demand Charge	per kW	$3.350	$3.400	$6.937	$10.415
Non-Summer Peak	per kWh	$0.1230	$0.1248	$0.1284	$0.1294
Non-Summer Off-Peak	per kWh	$0.0996	$0.1011	$0.1048	$0.1064
Non-Summer Off-Peak Saver	per kWh	$0.0939	$0.0953	$0.0833	$0.0686
Summer Peak	per kWh	$0.1905	$0.1934	$0.2048	$0.2124
Summer Off-Peak	per kWh	$0.1208	$0.1226	$0.1143	$0.1033
CITP-4: C&I Primary 1000+ kW					
System Infrastructure Fixed Charge	per month	$204.50	$207.55	$297.30	$297.30
Site Infrastructure Charge	per kW	$4.300	$4.365	$4.400	$4.400
Summer Peak Demand Charge	per kW	$4.930	$5.004	$10.218	$10.218
Non-Summer Peak	per kWh	$0.1205	$0.1223	$0.1295	$0.1295
Non-Summer Off-Peak	per kWh	$0.0965	$0.0979	$0.1051	$0.1051
Non-Summer Off-Peak Saver	per kWh	$0.0832	$0.0845	$0.0679	$0.0678
Summer Peak	per kWh	$0.1733	$0.1759	$0.1997	$0.1997
Summer Off-Peak	per kWh	$0.1078	$0.1094	$0.1014	$0.1014
CITT-4: C&I Subtransmission 1000+ kW					
System Infrastructure Fixed Charge	per month	$1,081.85	$1,098.10	$1,178.85	$1,237.65
Site Infrastructure Charge	per kW	$3.410	$3.461	$3.479	$3.427
Summer Peak Demand Charge	per kW	$3.210	$3.258	$6.636	$9.960
Non-Summer Peak	per kWh	$0.1155	$0.1173	$0.1228	$0.1260
Non-Summer Off-Peak	per kWh	$0.0933	$0.0947	$0.0998	$0.1030
Non-Summer Off-Peak Saver	per kWh	$0.0854	$0.0867	$0.0774	$0.0666
Summer Peak	per kWh	$0.1568	$0.1592	$0.1699	$0.1775
Summer Off-Peak	per kWh	$0.1074	$0.1090	$0.1050	$0.0987

1. Includes rescheduled rate implementation beginning October 1, 2021
2. Adopted prices with proposed rate increases and rescheduled rate implementation
*Adopted prices with proposed rate increases, rescheduled rate implementation and are reflective of proposed rate increases for 2022 and 2023. These prices are subject to future rate increases.

Temperature Dependent Pricing Rate (TDP)

Season and Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
GDT-99: Service at Subtransmission Voltage Level (Closed)			
System Infrastructure Fixed Charge	per month	$327.55	$334.10
Site Infrastructure Charge	per kW	$0.639	$0.652
Winter On-Peak	per kWh	$0.1134	$0.1156
Winter Off-Peak	per kWh	$0.0810	$0.0826
Summer Super-Peak Demand Charge			
Heat Storm	per kW	$6.577	$6.709
Extremely Hot	per kW	$6.181	$6.305
Very Hot	per kW	$1.147	$1.170
Mild to Hot	per kW	$0.000	$0.000
Summer Super-Peak	per kWh	$0.1541	$0.1572
Summer On-Peak	per kWh	$0.1355	$0.1382
Summer Off-Peak	per kWh	$0.1019	$0.1039

Combined Heat & Power (CHP) Distributed Generation

Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Combined Heat & Power (CHP) Distributed Generation			
Reserved Capacity Charge			
Secondary	per kW	$7.278	$7.423
Primary	per kW	$7.278	$7.423
Subtransmission	per kW	$6.993	$7.133

Distribution Wheeling Service

Voltage Level	Unit	Proposed March 1, 2022	Proposed January 1, 2023
12/21 kV	$/kW-month	$10.934	$11.152
69 kV	$/kW-month	$1.703	$1.737

Miscellaneous Commercial Charges

Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Power Factor Adjustment	per excess kVar x kWh	$0.0125	$0.0127
Power Factor Waiver	per excess kVar	$0.3306	$0.3372
Standby Charges for Customer Generation			
Secondary Voltage Service	per kW of contract capacity	$7.562	$7.713
Primary Voltage Service		$6.009	$6.129
Subtransmission Voltage Service		$3.035	$3.096

Outdoor Street and Traffic Lighting Rates

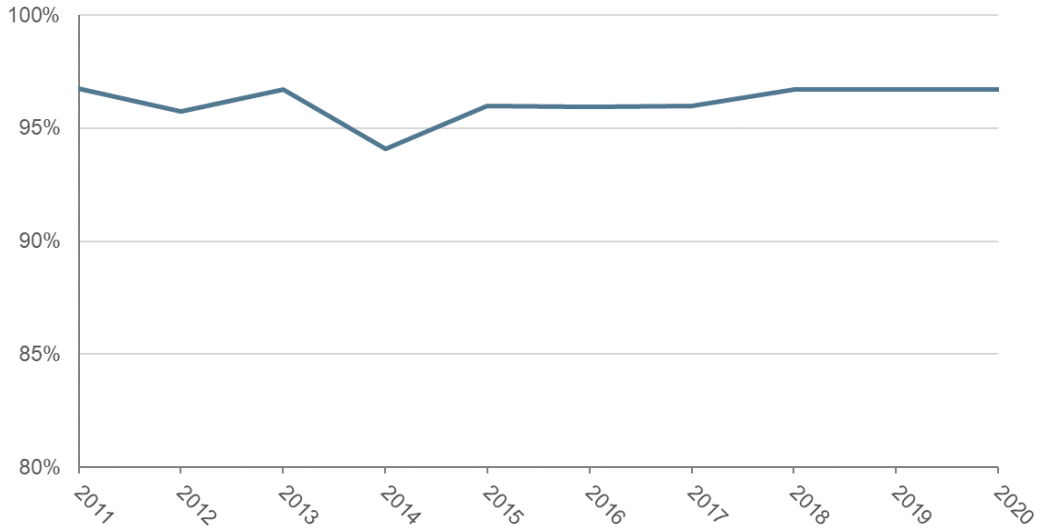
Charge Component	Unit	Proposed March 1, 2022	Proposed January 1, 2023
Metered Customer owned and maintained (COM_M)			
System Infrastructure Fixed Charge	per month	$10.50	$10.70
Year-round energy charges	per kWh	$0.0907	$0.0925
Unmetered Streetlighting Rates			
Monthly charge (per rated wattage of lamp & ballast)			
NLGT Outdoor Lighting Service		$0.0302	$0.0308
Customer-owned and maintained (COM)		$0.0302	$0.0308
SMUD (District) owned and maintained (DOM)		$0.0302	$0.0308
Customer-owned SMUD (District) maintained (CODM)		$0.0302	$0.0308
TC ILS Traffic Control -- Intersection Lighting Service			
System Infrastructure Fixed Charge	per month	$6.23	$6.36
Year-round energy charges	per kWh	$0.1138	$0.1161
TSS Traffic Signal Service SL_TSF (Closed)			
<70 watts	per unit	$4.52	$4.61
> 70 watts	per lamp per watt	$0.0317	$0.0323
Minimum monthly charge		$4.52	$4.61

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 SMUD 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 96.7% in 2018, 2019 and 2020.

Figure 18 – Customer Satisfaction Survey Results



Since 2000, SMUD has 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. SMUD has been 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 2020 surveys for residential and business are shown in Figures 19 and 20.

Figure 19 – J.D. Power 2020 Residential Satisfaction Index

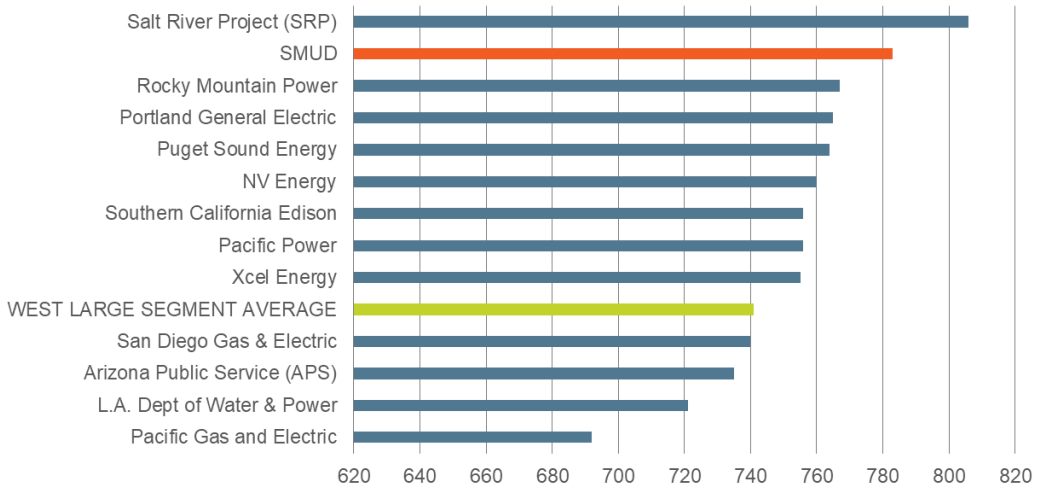
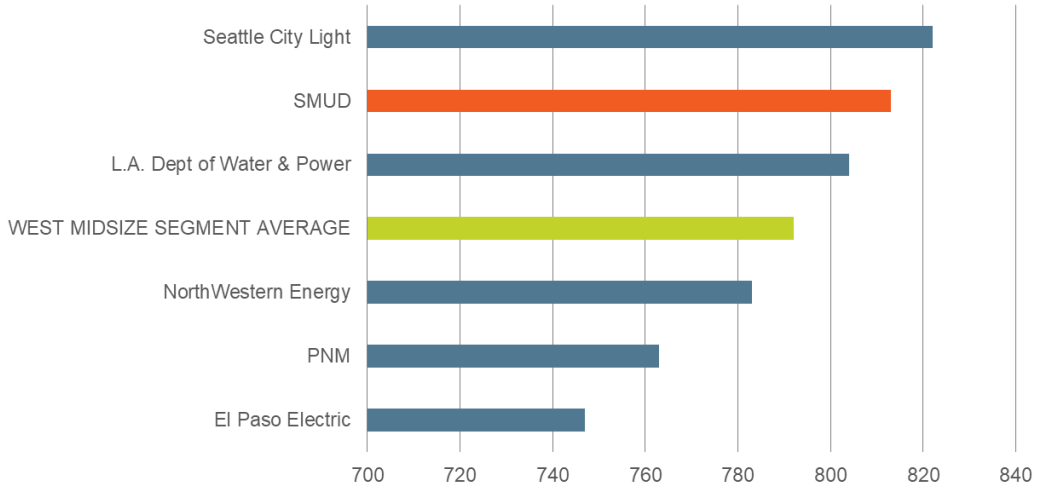


Figure 20 – J.D. Power 2020 Business Satisfaction Index



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 outage per customer per year 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.

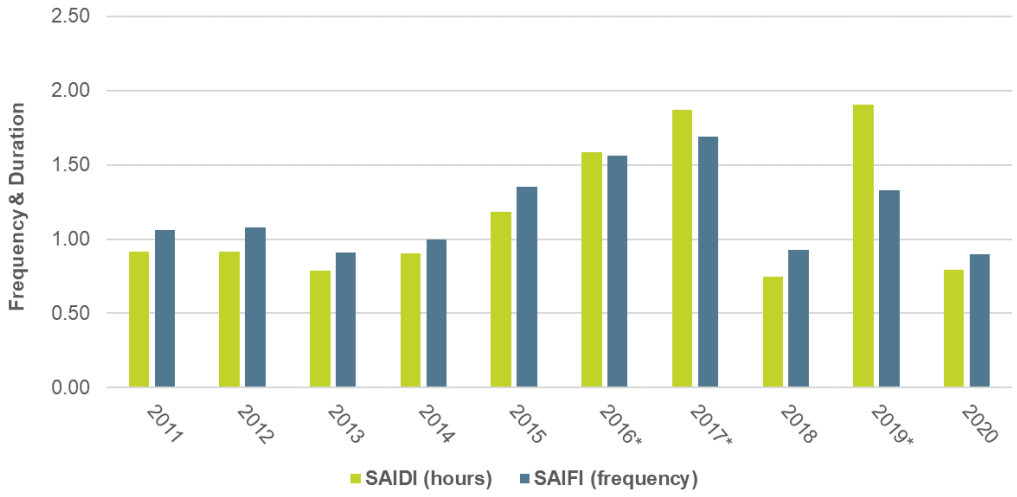
For SAIDI, SD-4 Reliability limits the average duration of outages per customer per year:

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

SMUD system reliability for SAIDI with major events fell outside the acceptable range set by Board Policy SD-4 on Reliability for 2019, but standards for SAIDI excluding major events and SAIFI including and excluding major events were met in 2019. The system reliability standard was met for both SAIDI and SAIFI in 2020.

In 2019, there was one qualifying major event on January 6-7 and there were no qualifying major events in 2020. Annual system maintenance initiatives designed to enhance reliability include the Distribution Line Inspection Program, the Cable Replacement program and the Vegetation Management Program.

Figure 21 – SMUD Outage Duration and Frequency by Year

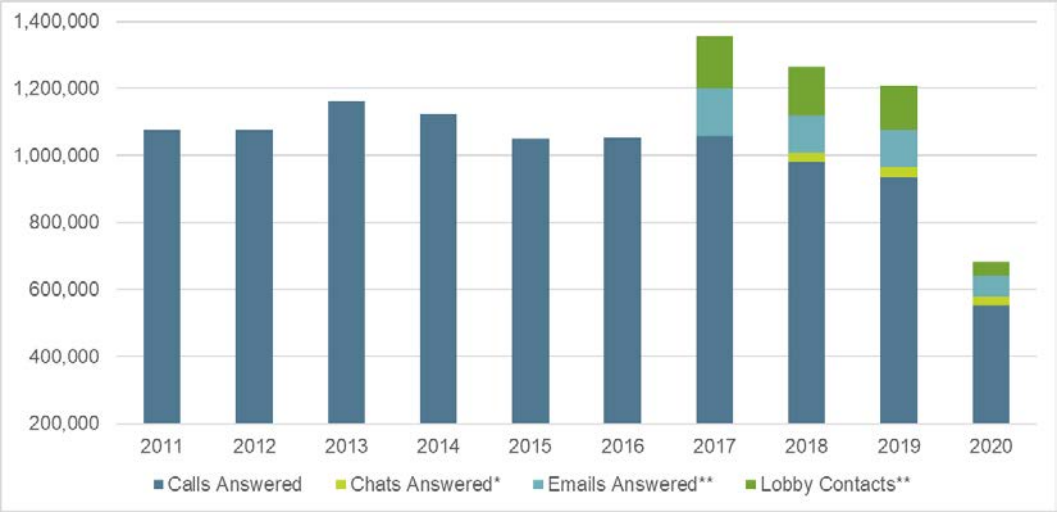


*Years with major events.

Customer Contacts

SMUD's Contact Center and Lobby continue to manage a high volume of customer contacts each year. While previously SMUD only tracked data on calls answered, in 2016 SMUD expanded tracking by including all emails answered and all lobby contacts. In addition, in 2017 SMUD introduced an online chat feature on its website, smud.org. 2018 was the first full year chat was available to customers. All of the customer contact data from 2011 to 2020 can be seen in Figure 22. From 2011 to 2019, SMUD 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 SMUD's decision to suspend customer power shutoffs for non-payment and the closing of the SMUD lobby in mid-March of 2020 due to the impact of COVID-19. SMUD will be resuming collections activities in the third quarter of 2021 and expects to open the lobby to customers in alignment with all safety protocols. Customers behind on payments have been encouraged to contact SMUD to make payment arrangements or to inquire about energy assistance rates and other programs that could be beneficial.

Figure 22 – Customer Contacts Answered by Year



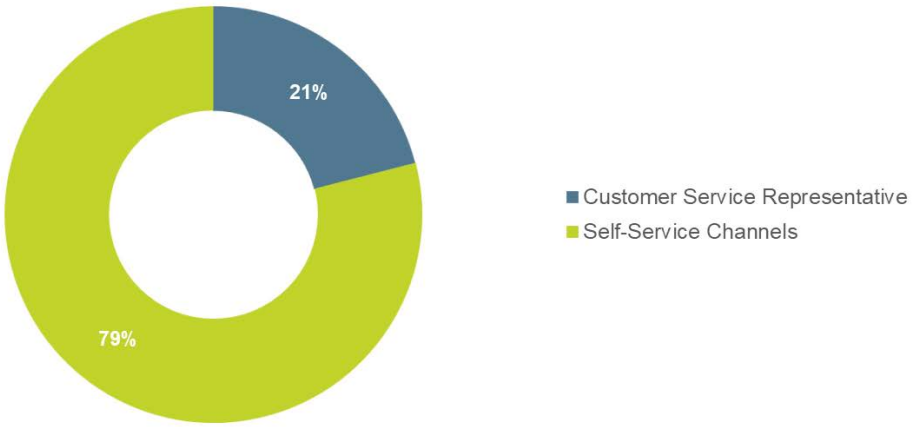
*2018 was the first full year that chat was available.
**2017 was the first full year tracking all emails answered and lobby contacts.

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 SMUD's 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 is counted as an assisted transaction. If the customer completes the transaction without the help of a CSR, it is counted as an unassisted transaction.

The use of SMUD's self-service channels continues to grow with 79% of primary transactions completed in a self-service channel in 2020. This number is up from 74% in 2018, which demonstrates the need to continue to invest in technology enhancements that promote and expand self-service options.

Figure 23 – Self-Service Transactions versus the CSR Channel in 2020



Environmental Assessment

1.0 Section 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 action to modify the NEM program, including NEM1 and NEM 2 rate schedules, 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.

3.0 The proposed action to create the Solar and Storage Rate, 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 increase rates of all customer classes by 1.5% in 2022 and 2.0% in 2023, 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 make clarifying changes to the residential Rate Schedule R, including adding months in the rate table for the different seasons and enrollment in the Fixed Rate, 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 make clarifying changes to the residential Rate Schedule R-TOD, including adding months in the rate table for the different seasons and application of the TOD (5-8 p.m.) and TOD (4-7 p.m.) optional 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.

7.0 The proposed action to establish the Critical Peak Pricing Rate, 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 implement the restructuring of commercial rates, including adjusting time periods, increasing the fixed cost rate component while decreasing the per kWh energy charge, and improving consistency in charge components across rate classes, 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 make miscellaneous changes to the commercial rates, including updating name references, updating references is Rate Schedule CI-TOD1, clarifying applicability of the Rate Schedule CI-TOD2 applies to customers served at the primary voltage level, and adding in references to Summer Super Peak Demand 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.

10.0 The proposed action to make miscellaneous changes to Rate Schedule SLS, 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 modify the Generator Standby Service language, 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 modify Rate Schedule EAPR to remove references to the transition and add the Maximum Demand 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.

13.0 The proposed action to make minor modifications to the Rate Schedules EDR, HGA, and RBC, 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 change the refund process for Rule 13 Temporary Service work, 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

SMUD has information regarding a variety programs and bill assistance available to customers that can be found at the following links:

2030 Zero Carbon Plan

smud.org/CleanPowerCity

Rebates, Incentives and Financing

smud.org/Rebates

Calculate Energy Consumption

smud.org/MyEnergyUse

Learn About Energy Efficiency

smud.org/EnergyTips

Payment Assistance Programs

smud.org/FinancialAssistance

Business Solutions and Rebates

smud.org/Business

Rate Information

smud.org/RateInfo

Time-of-Day Rates

smud.org/TOD

Time-of-Day Cost Estimator

smud.org/CostEstimator

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. Earlier this year the Board updated several of the SDs to reflect our zero-carbon goal. The most current version of these guidelines can be found on SMUD's website at smud.org/StrategicDirection.

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, 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 within 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.

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

g) 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	Net 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 their 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 cybersecurity, 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 with solar, hydro, fuel cell, wind and geothermal power.

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 California Constitution, article XIII C, section 1, 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 to the extent to which they exceed cost is the result of legacy pre-existing 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 (" 2020 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) a rate lock-in for certain NEM customers, (3) customer self-generating restructuring to include export

compensation at the rate of 7.4 cents per kWh, (4) a voluntary Critical Peak Pricing Rate for customers who choose to install a battery or thermostat, and (5) implementation of restructured commercial charges.

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 in order 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. As noted above, charges for services and benefits that reasonably reflect the cost of providing those services or benefits is excepted under California Constitution, article XIII C, section 1, subdivisions (e)(1) and (e)(2). The proposed rate increases therefore comply with Proposition 26.

2. Lock-In for NEM Customers

The proposed rates include a lock-in for NEM customers that interconnect prior to January 1, 2022, which will apply through December 31, 2030. SMUD is permitted to reward investment in a solar demand management program designed to encourage conservation of traditional resources and increase clean energy supply for all customers, and the cost of such a program may be borne by all who benefit, including non-solar customers.

State law also requires that SMUD displace its fossil fuel reliance with renewable energy, and compliance with this regulatory mandate is a cost of service that may be funded by all ratepayers.

Moreover, the NEM 1.0 rate structure was in place prior to the adoption of Proposition 26, and NEM2 subsequently brought a subset of solar rates closer to the cost of service. Therefore, both rates may be locked in as legacy rates under Proposition 26.

3. Export Compensation Rate

Solar and other self-generating customers export energy to the system during time periods when solar generation exceeds the customer's needs. The proposed rates include cost-justified export compensation in the amount of 7.4 cents per kWh for customers that interconnect after December 31, 2021, which will become effective when the new Solar and Storage Rate applies as early as 2022. This rate is supported by the E3 VOS Study, and will be adjusted every 4 years in response to future studies.

However, these 4-year adjustments cannot increase or decrease the export compensation rate by more than 30% of the rate that applied during the previous 4-year period. Because the value of solar power is expected to decrease in the future, the 30% cap on rate increases is not anticipated to impact export compensation. Conversely, to the extent that the 30% cap on rate decreases benefits customers on the Solar and Storage Rate, this subsidy is justified by both increased supply available to all customers, and the displacement of fossil fuel reliance to comply with state law.

4. Voluntary Critical Peak Pricing Rate

This program provides two benefits to customers that choose to install a qualifying device (e.g., battery for storage of solar energy, or a smart thermostat). First, those customers receive a rate

discount for electricity consumed from the grid. Second, customers will be compensated at the rate of 50 cents per kWh for power that is exported during critical peak periods. However, if these customers consume electricity off the grid during the critical peak periods, they will be charged 50 cents per kWh.

This program is cost-justified under the 2020 Rate Study, and it is therefore permitted under Proposition 26. (Cal. Const., art. XIII C, §1 subdivisions (e)(1) and (e)(2).) It is also voluntary, which means that it is not "imposed" and therefore not subject to Proposition 26.

In addition, the program furthers system-wide requirements to buy clean energy during critical peak periods (as opposed to running a fossil fuel plant or purchasing fuel on the wholesale market), achieve certainty in the cost of energy (which the wholesale market cannot provide), and increase supply available to all customers.

5. Restructuring of Commercial Charges

The proposed rates also include implementation of commercial rate restructuring which was approved in the 2019 rate action on June 24, 2019 and subsequently delayed on August 18, 2020. The restructuring includes new time parameters for commercial TOU energy rates, and a new demand charge for small commercial customers that have not historically paid a demand charge. Both of these changes bring commercial TOU rates and small commercial customer rates closer to the cost of service, and this restructuring of commercial rates therefore complies with Proposition 26.

The new small commercial demand charge is subject to the EAPR discount for qualifying customers; however, even a discounted demand charge will bring small commercial EAPR rates closer to the cost of service, as permitted under Proposition 26.

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

In addition to the exceptions applicable to permitting legacy rates that predate Proposition 26 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

2030 Zero Carbon Plan

SMUD's 2030 Zero Carbon Plan, adopted by the Board in April 2021, is our flexible plan to reduce greenhouse gas (GHG) emissions in our electricity supply, 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 exploration of new technologies and business models. Additionally, SMUD will continue pursuing GHG savings through vehicle, building and equipment electrification. In meeting our goal of zero carbon by 2030, SMUD will maintain reliable and safe electric service, minimize environmental impacts, emphasize local and regional benefits, improve equity for underserved communities, and maintain affordable rates.

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.

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 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.

Critical Peak Pricing (CPP) Rate

The CPP Rate is an optional rate designed to allow our customers to help reduce demand on our grid during times when there are emergency conditions with the power system or energy demand is at its

highest. Customers who voluntarily participate in the CPP Rate will be asked to reduce their energy usage to help conserve electricity when it's needed most to take pressure off of the grid.

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.

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.

Distributed Energy Resources (DERs)

Energy resources that include, but are not limited to, rooftop solar, battery storage and energy reduction applications.

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 optional SMUD residential 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.

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

Integrated Resource Plan (IRP)

A plan to detail how utilities will meet their customer resource needs, reduce GHG's, and ramp up the deployment of clean energy resources.

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

SMUD's commercial rates GSN_T, GSS_T, GUS_S, GUP_S, GUS_M, GUP_M, GUT_M, GUS_L, GUP_L, GUT_L on Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4. The legacy commercial rates will be closed to new customers effective October 1, 2021 and existing customers on the legacy commercial rates will transition to the new restructured commercial rates no later than December 31, 2022.

Legacy Rate

SMUD's non-time based residential rate in effect on January 1, 2017. For eligible customers, this rate will be subject to rate adjustments in rate processes through December 31, 2022.

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. SMUD uses marginal cost to set rates.

Net Energy Metering (NEM)

Customers who have qualifying renewable energy technologies, as defined by the NEM1 rate schedule, 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 Schedule NEM1.

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.

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.

Solar and Storage Rate

Customers who have qualifying renewable energy technologies, as defined by the SSR rate schedule, are compensated for the energy they export to SMUD (for example, from solar or a battery). The terms and conditions of this rate are specified in Rate Schedule SSR.

Standard Customer Bill

Refers to customers who are on the standard residential rate (TOD 5-8 p.m.) and are not receiving any Energy Assistance Program Rate (EAPR) discount or the Medical Equipment Discount (MED).

Standard Residential Rate

The (TOD 5-8 p.m.) residential rate is the standard rate that all residential customers will be enrolled in, with a few exceptions, as adopted by the Board. Eligible customers may elect to enroll in the Fixed Rate or any other available rate.

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, also known as a rate schedule. Tariff sheets are published on smud.org.

Time-of-Day Rate

SMUD's name for a 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.) 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 4-9 p.m. on weekdays, especially in the summer, when heavy air-conditioning use causes spikes in electricity consumption.

Unaudited Financial Statistics

SMUD Retail Energy Sales Forecast

Table 8 – 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			
2022	1	428,449	2,105	64,475	136,498	43,135	44,319	168,540	4,567	268	892,356
	2	360,724	2,596	60,355	132,064	42,295	43,215	160,670	4,489	268	806,676
	3	314,784	2,746	55,960	128,571	41,606	43,569	160,745	4,354	267	752,603
	4	279,656	3,296	51,694	123,337	40,456	42,299	159,851	4,359	267	705,215
	5	272,610	5,670	53,336	133,359	41,870	44,329	160,365	4,211	266	716,016
	6	349,559	9,293	61,051	150,798	45,324	49,204	173,715	4,369	266	843,578
	7	492,668	12,108	69,801	168,023	49,804	51,993	181,900	4,374	265	1,030,937
	8	510,109	12,473	70,515	168,239	49,199	52,734	184,039	4,378	265	1,051,951
	9	459,968	10,410	68,985	166,167	50,464	51,699	180,904	4,383	264	993,245
	10	315,959	6,216	57,797	144,178	45,605	49,069	173,168	4,388	265	796,645
	11	284,943	3,520	52,269	129,660	41,773	46,236	167,698	4,393	264	730,756
	12	371,587	2,552	57,287	132,945	44,184	45,478	167,232	4,398	264	825,927
2023	1	419,026	2,099	64,395	136,917	42,969	45,060	173,761	4,628	263	889,118
	2	355,761	2,586	60,321	132,512	42,145	43,952	166,067	4,550	262	808,156
	3	307,927	2,744	55,816	128,968	41,431	44,285	166,156	4,413	262	752,001
	4	277,189	3,284	51,590	123,629	40,181	42,151	159,355	4,418	261	702,058
	5	267,146	5,658	53,111	133,526	41,522	44,146	159,869	4,268	261	709,507
	6	347,459	9,290	60,989	151,259	45,085	49,025	173,355	4,428	260	841,153
	7	485,740	12,107	69,656	168,280	49,467	51,805	181,675	4,434	260	1,023,424
	8	503,290	12,513	70,467	168,709	48,947	52,619	184,166	4,439	259	1,045,408
	9	452,381	10,378	68,677	166,078	50,024	51,509	180,960	4,444	259	984,709
	10	315,301	6,209	57,673	144,539	45,376	48,947	173,530	4,449	259	796,281
	11	286,939	3,503	51,946	129,530	41,368	46,140	168,237	4,454	259	732,375
	12	359,708	2,555	56,957	132,956	43,942	45,425	167,874	4,459	259	814,135

Note: Includes energy usage of SMUD facilities.

Pro Forma Tables

Table 9 – Pro Forma Consolidated Income Statement

PRO FORMA CONSOLIDATED INCOME STATEMENT
2021-2023 ($ Millions)

	2021 Budget	2022 Projection	2023 Projection
Operating Revenues:			
Billed Sales*	1,508.0	1,515.8	1,514.1
EAPR/MED Discounts	(40.0)	(33.4)	(30.7)
Recommended Revenue Adjustment		19.3	52.4
Uncollectable Electric Sales	(10.0)	(10.9)	(10.9)
Net Sales	**1,458.0**	**1,490.8**	**1,525.0**
Other Revenue	39.4	44.2	47.2
Total Revenue	**1,497.3**	**1,534.9**	**1,572.1**
Operating Expenses:			
Commodity	440.9	442.9	476.7
Energy Operations	96.7	104.2	110.5
Energy Delivery	234.0	268.6	249.6
Customer/Community	139.4	146.4	151.2
Internal	16.4	18.4	19.3
Technology	35.2	33.2	34.0
Corporate	59.6	26.6	43.4
Enterprise	49.8	36.3	37.8
Public Good (excluding EAPR/MED Discount)	68.1	65.8	69.5
Total Operations	**1,140.2**	**1,142.4**	**1,192.0**
Depreciation, Depletion, and Amortization	220.4	231.3	238.8
Total Operating Expenses	**1,360.6**	**1,373.7**	**1,430.8**
Net Operating Income	**136.7**	**161.3**	**141.4**
Other (Income) Expenses:			
Interest Income and Other	(27.9)	(9.9)	(9.5)
Other Non Cash	(12.8)	(10.1)	(11.1)
Total Interest Income & Other	**(40.8)**	**(20.1)**	**(20.7)**
Interest Expense			
Interest Expense	99.9	94.1	86.7
Net Interest Charges	**99.9**	**94.1**	**86.7**
Change in net position - Net Income (Loss)	**77.6**	**87.2**	**75.4**
Cash Available for Fixed Debt Service	409.6	405.3	394.2
Interest Payments	114.8	111.2	107.2
Principal Payments	113.0	118.6	123.6
Total Fixed Debt Service	**227.8**	**229.8**	**230.8**
Fixed Charge Coverage Ratio	**1.80**	**1.76**	**1.71**

Note: Department names and structures may change due to a realignment that will go into effect July 2021. The projections shown reflect the current organization structure.

Table 10 – Pro Forma Capital Expenditures

PRO FORMA CAPITAL EXPENDITURES
2021-2023 ($ Millions)

	2021 Budget	2022 Projection	2023 Projection
Energy Operations	$ 8.4	$ 14.2	$ 5.4
Energy Delivery	269.0	287.2	295.3
Customer/Community	7.3	4.6	4.9
Internal	33.9	34.5	26.7
Technology	26.3	39.3	53.0
Corporate/Enterprise	46.1	20.3	15.0
Total Capital	$ 390.9	$ 400.2	$ 400.2

Note: Department names and structures may change due to a realignment that will go into effect July 2021. The projections shown reflect the current organization structure.

Table 11 – Pro Forma Consolidated Sources and Uses of Cash

PRO FORMA CONSOLIDATED SOURCES AND USES OF CASH
2021-2023 ($ Millions)

	2021 Budget	2022 Projection	2023 Projection
Operating Sources of Funds:			
Receipt from Customers	1,454.0	1,471.3	1,478.0
Recommended Revenue Adjustment		19.3	52.4
Other Electric Revenue	50.0	34.2	34.3
Total Operating Sources of Funds:	**1,504.0**	**1,524.8**	**1,564.6**
Operating Uses of Funds:			
Net Operating Expenses	688.6	690.0	706.4
Commodity Expenses	422.2	423.3	456.7
Total Operating Uses of Funds:	**1,110.8**	**1,113.2**	**1,163.0**
Net Source of Funds from Operations:	**393.2**	**411.6**	**401.6**
Financing Sources of Funds:			
Issuance of Debt	-	60.0	-
Total Financing Sources of Funds:	**-**	**60.0**	**-**
Financing Uses of Funds:			
Capital & Reserve Expenditures	390.9	400.2	400.2
Principal Payments on Debt	108.9	114.6	119.5
Net Loans	1.8	1.8	-
Interest Payments on Debt	105.2	98.9	91.1
Total Use of Funds from Financing:	**606.8**	**615.4**	**610.9**
Net Use of Funds from Financing:	**606.8**	**555.4**	**610.9**
Investing Sources of Funds:			
Interest Income	5.9	4.3	3.8
Net Source of Funds from Investing:	**5.9**	**4.3**	**3.8**
Net Source/ (Use) of Funds	**(207.7)**	**(139.5)**	**(205.4)**

Annual Sales Data Tables

Table 12 – Annual Sales Data by Rate Schedule – 2019

SACRAMENTO MUNICIPAL UTILITY DISTRICT
YTD TOTAL SALES DATA BY RATE SCHEDULE
AS OF: DECEMBER 2019

		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
AGRICULTURAL		AOD	48	202,860	37,083	135,981	25,066
		AON	54	67,841	8,506	58,560	7,128
		ASD	6,391	49,859,412	6,432,698	41,737,483	5,392,173
		ASN	22,559	18,124,666	2,660,593	14,524,148	2,131,418
		ASN_BH	1	0	0	1,628	219
	(b)	Various_1	0	0	-350	0	0
TOTAL AGRICULTURAL			**29,053**	**68,254,779**	**9,138,529.39**	**56,457,800**	**7,556,003.35**
COMMERCIAL AND INDUSTRIAL							
SMALL		GEV_FC	0	13,722	3,185	0	0
		GFN	5,580	224,346	81,111	85,975	46,273
		GFN_C	4,352	2,393,831	632,106	1,925,232	505,398
		GSN	6	0	0	0	0
		GSN_T	670,977	748,315,231	113,360,892	478,720,435	72,589,495
		GSN_C	6	11,834	2,576	5,079	1,043
	(b)	Various_2	0	-40,005,000	-2,176,069	0	0
TOTAL SMALL			**680,921**	**710,953,964**	**111,903,801.52**	**480,736,722**	**73,142,208.81**
LARGE		GSS_T	96,203	1,801,224,986	251,496,752	1,227,279,848	171,587,760
		GUP_S	723	25,602,642	3,524,840	19,239,604	2,393,278
		GUS_S	4,723	503,653,596	65,442,667	360,964,012	43,794,456
		Sub-total	101,649	2,330,481,224	320,464,259.96	1,607,483,464	217,775,493.52
		GUP_M	137	18,811,494	2,345,276	12,716,737	1,456,466
		GUS_M	2,764	540,810,097	65,753,544	358,906,443	41,081,981
		GUT_M	55	3,257,012	442,727	2,995,215	406,600
		Sub-total	2,956	562,878,603	68,541,546.90	374,618,395	42,945,047.29
		GDT_99	24	133,762,815	11,492,381	132,212,131	11,317,199
		GNT_05	24	326,374,893	27,453,260	99,576,968	8,378,794
		GNT_06	12	10,170,469	1,462,346	8,943,283	1,357,749
		GNT_07	12	87,830,765	10,196,853	86,234,702	10,002,979
		GUP_L	437	332,217,949	36,310,403	250,743,279	26,758,970
		GUS_L	1,161	520,720,849	62,489,416	367,167,635	43,954,739
		GUT_L	279	534,859,723	55,128,718	422,700,256	43,010,681
		GUT_L19	12	6,753,085	1,221,369	6,693,294	1,209,469
	(b)	Various_3	0	0	-1,392,098	0	0
		Sub-total	1,961	1,952,690,548	204,362,648.32	1,374,271,548	145,990,579.30
TOTAL LARGE			**106,566**	**4,846,050,375**	**593,368,455.18**	**3,356,373,406**	**406,711,120.11**
TOTAL COMMERCIAL AND INDUSTRIAL			**787,487**	**5,557,004,339**	**705,272,256.70**	**3,837,110,128**	**479,853,328.92**
STREET LIGHTS		SL_CODM	360	236,513	36,249	89,288	13,863
		SL_COM	3,751	41,153,848	3,266,525	17,576,683	1,412,666
		SL_COM_M	2,835	1,045,149	105,680	615,971	66,430
		SL_DOM	7,578	3,661,213	2,343,634	1,528,907	1,013,778
		SL_TSF	60	375,004	37,594	122,045	11,367
	(b)	Various_4	0	0	1	0	0
TOTAL STREET LIGHTS			**14,584**	**46,471,727**	**5,789,683.02**	**19,932,893**	**2,518,103.80**
INTERSECTION LGHT		TS	21,966	5,826,062	709,585	4,048,679	491,891
		TS_F	635	75,856	11,359	46,299	7,018
	(b)	Various_5	0	0	0	0	0
TOTAL INTERSECTION LIGHTS			**22,601**	**5,901,918**	**720,943.79**	**4,094,978**	**498,909.24**
NIGHT LIGHTS		NLGT	51,912	3,490,533	1,123,067	2,189,654	709,937
	(b)	Various_6	0	0	-17,572	0	0
TOTAL NIGHT LIGHTS	(c)		**51,912**	**3,490,533**	**1,105,494.62**	**2,189,654**	**709,937.14**

RESIDENTIAL		RF01	85,925	46,944,944	8,006,275	28,609,059	4,863,482
		RF01_E	9,210	5,294,940	591,108	3,047,940	345,421
		RF01_EL	707	458,273	43,711	255,865	25,544
		RF01_L	1,269	960,245	134,809	507,792	71,232
		RSCH	19,441	30,849,915	4,120,023	16,422,222	2,197,866
		RSCH_E	216	242,063	24,405	154,412	16,655
		RSCH_EL	10	14,029	1,598	5,914	1,894
		RSCH_L	50	68,772	8,236	32,435	4,013
		RSEH	126,591	160,788,520	22,593,792	91,522,385	12,971,525
		RSEH_E	3,137	4,021,967	389,740	2,689,428	265,950
		RSEH_EL	88	157,180	13,330	110,906	9,035
		RSEH_L	292	263,616	34,291	169,386	22,649
		RSMM	1,097	30,776,828	4,402,026	18,380,607	2,690,785
		RWCH	2,482	5,914,584	764,443	4,271,367	560,254
		RWCH_E	50	68,130	7,039	45,361	4,192
		RWCH_L	27	30,721	4,426	13,226	2,264
		RWEH	4,927	11,288,931	1,457,085	8,095,264	1,057,170
		RWEH_E	118	185,489	18,715	135,296	14,719
		RWEH_EL	0	2,943	288	2,681	262
		RWEH_L	13	13,875	1,002	7,875	632
		Sub-total	255,650	298,346,366	42,616,375.66	174,479,812	25,125,574.31
		RSGH	608,310	532,524,453	80,259,149	305,829,619	46,442,275
		RSGH_E	10,248	8,799,881	846,812	5,961,191	578,058
		RSGH_EL	431	386,082	31,858	293,150	24,280
		RSGH_L	2,223	1,473,690	198,622	826,263	111,386
		RWGH	7,430	11,370,907	1,525,894	8,564,973	1,197,568
		RWGH_E	91	142,288	14,773	127,096	14,195
		RWGH_EL	3	15,177	1,516	13,723	1,363
		RWGH_L	71	85,520	10,306	74,425	10,303
	(b)	Various_8	0	0	-3,320,047	0	0
		Subtotal	628,816	554,805,251	79,569,870.25	321,695,596	48,380,105.72
		RT01	60,880	38,192,527	5,283,189	23,894,290	3,345,822
		RT01_E	1,817	941,602	86,914	516,765	51,773
		RT01_EL	126	84,453	6,500	42,811	3,045
		RT01_L	647	394,762	49,981	221,418	30,725
		RT02	4,899,025	3,022,133,567	483,709,077	1,817,906,830	288,579,247
		RT02_E	797,228	476,925,124	48,498,204	275,578,298	28,343,231
		RT02_EL	42,554	29,011,069	2,453,444	17,269,203	1,499,177
		RT02_L	64,198	53,344,106	6,963,987	31,052,388	4,058,309
	(d)	Subtotal	5,866,475	3,621,027,210	547,051,295.94	2,166,482,003	325,911,330.64
TOTAL RESIDENTIAL			**6,750,941**	**4,474,178,827**	**669,237,541.85**	**2,662,657,410**	**399,417,010.67**
TOTAL ALL CLASSES	(c)		**7,656,578**	**10,155,302,123**	**1,391,264,449.37**	**6,582,442,864**	**890,553,293.12**

(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 13 – Annual Sales Data by Rate Schedule – 2020

SACRAMENTO MUNICIPAL UTILITY DISTRICT
YTD TOTAL SALES DATA BY RATE SCHEDULE
AS OF: DECEMBER 2020

		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
AGRICULTURAL		AOD	48	262,170	48,712	185,542	33,861
		AON	60	80,844	10,461	76,739	9,890
		ASD	6,379	57,336,792	7,585,869	50,846,423	6,801,724
		ASN	22,479	21,530,490	3,211,638	19,188,404	2,866,600
	(b)	Various_1	0	0	-356	0	0
TOTAL AGRICULTURAL			**28,966**	**79,210,296**	**10,856,324.06**	**70,297,107**	**9,712,076.16**
COMMERCIAL AND INDUSTRIAL							
SMALL		GFN	5,528	282,030	91,968	104,334	51,703
		GFN_C	6,377	5,195,998	1,251,251	3,768,303	579,016
		GSN	1	0	0	0	0
		GSN_T	674,654	720,880,107	114,345,653	455,013,414	72,448,483
		GSN_C	12	13,490	2,890	12,406	2,671
	(b)	Various_2	0	-31,299,000	-2,145,488	0	0
TOTAL SMALL			**686,572**	**695,072,625**	**113,546,274.42**	**458,898,457**	**73,081,873.08**
LARGE		GSS_T	94,726	1,704,555,877	251,071,044	1,140,542,898	168,901,870
		GUP_S	742	24,541,880	3,601,092	19,222,985	2,785,561
		GUS_S	4,749	474,669,766	64,250,456	335,613,499	45,220,645
		Sub-total	100,217	2,203,767,523	318,922,592.64	1,495,379,381	216,908,076.18
		GUP_M	128	16,538,069	2,135,482	11,263,475	1,441,312
		GUS_M	2,837	530,092,045	66,554,511	352,417,402	44,360,520
		GUT_M	60	3,599,807	481,530	3,339,995	449,933
		Sub-total	3,025	550,229,921	69,171,523.14	367,020,871	46,251,765.21
		GDT_99	24	125,869,384	10,953,347	124,592,726	11,133,192
		GNT_05	24	400,934,245	32,779,049	147,224,186	19,022,104
		GNT_06	12	7,310,241	914,746	6,464,898	1,022,828
		GNT_07	12	82,821,018	9,704,635	82,126,348	9,940,453
		GUP_L	432	318,075,542	35,863,628	230,322,326	25,720,160
		GUS_L	1,233	501,842,178	62,579,182	347,698,760	43,360,736
		GUT_L	268	515,507,109	55,087,227	383,560,299	41,159,353
		GUT_L19	12	9,050,781	1,465,857	5,450,567	1,240,447
	(b)	Various_3	0	0	-1,347,215	0	0
		Sub-total	2,017	1,961,410,498	208,000,455.59	1,327,440,109	152,599,272.05
TOTAL LARGE			**105,259**	**4,715,407,942**	**596,094,571.37**	**3,189,840,362**	**415,759,113.44**
TOTAL COMMERCIAL AND INDUSTRIAL			**791,831**	**5,410,480,567**	**709,640,845.79**	**3,648,738,819**	**488,840,986.52**
STREET LIGHTS		SL_CODM	360	237,009	37,064	96,867	15,375
		SL_COM	3,692	41,008,808	3,394,586	18,088,996	1,512,408
		SL_COM_M	3,605	1,413,182	147,494	897,743	97,743
		SL_DOM	7,530	2,934,425	2,293,097	1,312,396	1,055,287
		SL_TSF	60	368,290	34,729	127,575	12,236
TOTAL STREET LIGHTS			**15,247**	**45,961,714**	**5,906,970.53**	**20,523,577**	**2,693,049.81**
INTERSECTION LGHT		TS	22,278	6,081,314	768,491	4,235,224	528,975
		TS_F	601	75,319	11,603	43,203	6,667
TOTAL INTERSECTION LIGHTS			**22,879**	**6,156,633**	**780,093.61**	**4,278,427**	**535,642.59**
NIGHT LIGHTS		NLGT	50,477	3,347,020	1,110,659	2,076,076	697,147
	(b)	Various_6	0	0	-17,573	0	0
TOTAL NIGHT LIGHTS	(c)		**50,477**	**3,347,020**	**1,093,086.26**	**2,076,076**	**697,147.18**

RESIDENTIAL		RF01	123,545	83,183,885	14,104,341	50,347,663	8,409,494
		RF01_E	16,617	11,215,522	1,370,910	6,357,556	955,195
		RF01_EL	1,126	870,887	90,973	505,691	73,301
		RF01_L	1,660	1,445,301	209,627	781,985	123,409
		RSCH	2,865	1,702,157	247,473	1,407,087	211,195
		RSCH_E	149	95,641	11,583	44,704	6,314
		RSCH_EL	12	10,296	1,456	4,434	584
		RSCH_L	17	17,706	1,812	11,238	1,645
		RSEH	10,138	7,143,799	1,040,613	5,546,874	819,311
		RSEH_E	1,115	733,647	77,159	510,854	70,201
		RSEH_EL	50	43,710	3,275	22,467	3,039
		RSEH_L	170	114,154	14,317	92,738	13,820
		RSMM	1,069	32,815,508	5,013,431	13,455,364	2,991,465
		RWCH	628	647,133	84,303	637,094	89,718
		RWCH_E	14	15,653	1,615	11,691	1,576
		RWCH_EL	11	5,383	642	7,704	1,043
		RWCH_L	24	19,575	2,218	20,297	2,864
		RWEH	1,311	1,593,685	223,695	1,518,529	210,939
		RWEH_E	83	99,277	11,531	84,691	11,274
		RWEH_L	32	27,935	3,745	33,489	4,797
		Sub-total	160,636	141,800,854	22,514,718.67	81,402,149	14,001,180.92
		RSGH	116,155	59,585,784	9,266,950	51,546,178	8,063,795
		RSGH_E	5,426	2,992,483	329,898	2,218,010	316,948
		RSGH_EL	299	167,273	16,539	143,764	20,217
		RSGH_L	1,576	903,137	119,058	688,540	106,465
		RWGH	1,858	1,776,490	245,877	1,863,395	266,469
		RWGH_E	71	84,193	10,014	89,624	11,507
		RWGH_L	60	80,265	11,685	85,735	11,955
	(b)	Various_8	0	0	-3,831,596	0	0
		Subtotal	125,445	65,589,625	6,168,425.83	56,635,246	8,797,357.24
		RT01	44,550	23,253,268	3,221,624	20,746,273	3,086,969
		RT01_E	1,795	1,049,106	105,755	722,280	100,142
		RT01_EL	122	83,255	7,004	49,733	6,643
		RT01_L	626	416,449	53,523	305,970	43,788
		RT02	5,494,631	4,005,442,517	638,199,683	2,389,266,381	378,686,272
		RT02_E	870,038	575,358,394	66,008,683	322,387,427	46,943,246
		RT02_EL	44,673	32,652,153	3,138,215	19,072,155	2,722,311
		RT02_L	64,271	56,907,619	7,745,915	32,974,604	5,021,386
	(d)	Subtotal	6,520,706	4,695,162,761	718,480,401.92	2,785,524,824	436,610,756.21
TOTAL RESIDENTIAL			**6,806,787**	**4,902,553,240**	**747,163,546.42**	**2,923,562,219**	**459,409,294.37**
TOTAL ALL CLASSES	(c)		**7,716,187**	**10,447,709,470**	**1,475,440,866.67**	**6,669,476,225**	**961,888,196.63**

(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, 2020 and 2019

Financial Statements

Report of Independent Auditors

December 31, 2020 and 2019

SMUD®

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Independent Auditors' Report

To the Board of Directors of
Sacramento Municipal Utility District

Report on the Financial Statements

We have audited the accompanying financial statements of Sacramento Municipal Utility District, as of and for the years ended December 31, 2020 and 2019, and the related notes to the financial statements, which collectively comprise Sacramento Municipal Utility District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control over financial reporting relevant to Sacramento Municipal Utility District's preparation and fair presentation of the financial statements 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 Sacramento Municipal Utility District's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Sacramento Municipal Utility District as of December 31, 2020 and 2019, and the respective changes in financial position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matter

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplemental information as listed in the table of contents be presented to supplement the basic financial statements. Such information, 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 issued our report dated February 19, 2021, on our consideration of 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 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 Sacramento Municipal Utility District's internal control over financial reporting and compliance.

Baker Tilly US, LLP

Madison, Wisconsin
February 19, 2021

Sacramento Municipal Utility District
Management's Discussion and Analysis - Unaudited
For the Years Ended December 31, 2020 and 2019

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, 2020 and 2019. This discussion and analysis should be read in conjunction with the financial statements 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.

Nature of Operations

Under provisions of California's Municipal Utility District Act, the citizens of Sacramento voted in 1923 to form their own electric utility – SMUD. The independently run community-owned utility began operations on December 31, 1946 and is not subject to regulation or oversight by the California Public Utilities Commission. It is now the sixth largest community-owned electric utility in the nation.

Governed by an elected board of directors (Board), SMUD has the rights and powers to fix rates and charges for commodities and services it furnishes, incur indebtedness, and issue bonds or other obligations. 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. Its purpose is to enhance the quality of life for its customers and community through creative energy solutions. 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.

In 2018, SMUD began rolling out the transition to Time-of-Day (TOD) rates to better align with the cost of providing electricity, send more accurate price signals to customers, and give customers the opportunity to better manage their electricity bills by shifting usage to lower-cost time periods. In 2020, after the first full year of TOD, SMUD showed a lower energy consumption and a 130 MW reduction in peak load, surpassing our environmental, peak load reduction and financial goals set for TOD. In June 2019, the Board approved a 3.75 percent rate increase effective January 2020, 3.0 percent rate increase effective October 1, 2020, 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. Additionally, the Board approved a restructuring of the commercial rates and increases in the fixed bill components, such as the System Infrastructure Fixed Charge and demand charges along with a decrease in energy charges. Due to COVID-19, the Board delayed the implementation of the Commercial Rate Restructure for one year to be effective not later than May 31, 2022. Even with these increases, SMUD's rates continue to remain amongst the lowest in the state. In 2020, the average system rate was 35.0 percent below the average rate of the nearest investor-owned utility.

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.

COVID-19 Global Pandemic

In response to national, state, and local mandates, in mid-March SMUD ordered its non-essential employees to work remotely and reduced critical workforce onsite. SMUD continues to support its customers during the COVID-19 pandemic. 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 through April 2021. 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. As a result, SMUD increased its uncollectable reserve for account write-offs to $45.0 million as of December 31, 2020. Other financial and operational impacts to SMUD associated with COVID-19 are noted throughout this report.

Financial & Operational Highlights

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, our 2030 Clean Energy Vision calls for absolute zero carbon emission in our power supply by 2030. It's an aggressive and nation-leading goal and a dedicated team is now developing our 2030 Zero Carbon Plan, which will be presented to the Board in March 2021. To achieve zero carbon by 2030, we must address our reliability needs, and we see much promise in technologies such as long duration energy storage, flexible load, and renewable power-to-gas technologies.

Due to our strong credit rating and financial strength, SMUD was one of the first utilities able to issue debt after the debt markets froze due to COVID-19. This shows the importance of maintaining our strong credit rating of AA by two of the three major rating agencies and continuing to monitor our financial metrics by exceeding the Board's policy for a minimum fixed charge coverage ratio of 1.50 times of annual budgets. Our successful issuance of $400.0 million of new debt in May was used to reimburse SMUD for 2018 and 2019 capital projects and paid off all the outstanding commercial paper notes. This included the issuance of $25.2 million of Green Bonds, which reimbursed SMUD for capital expenditures tied to South Fork Powerhouse, Jones Powerhouse, and the Rancho Seco II Solar interconnection. This was SMUD's second green bond

issuance. Paying off our commercial paper notes frees up additional capacity for future capital expenditures, provides reserves for any unforeseen circumstances and creates flexibility in choosing when to issue new debt. SMUD ended the year strong with more than 150 days cash on hand and over $168.0 million in the rate stabilization funds.

In 2020, SMUD was recognized by its residential and commercial customers as the top California utility by J.D. Power, receiving its highest scores ever. SMUD also received recognition for its efforts in innovations and environmental stewardship. SMUD developed and released the Sustainable Communities Resource Priorities Map to drive community support to under resourced neighborhoods. The map has logged over 3,500 unique hits since launch and has gained adoption by over 10 local jurisdictions. In addition, approximately 24.0 percent of contract dollars were awarded to small, local businesses.

SMUD has continued to grow its Greenergy® program and is now one of the largest of its kind in the nation. The program was redesigned in 2020 to now focus on carbon savings in addition to renewable energy to provide consistency and alignment with our 2040 Carbon Plan. In February 2020, the California Energy Commission approved SMUD to offer the Neighborhood SolarShares® program as an alternative to the 2019 solar mandate for new low-rise, residential homes.

In 2014, FERC issued a fifty-year license for the Upper American River Project (UARP) which consists of three relatively large storage reservoirs and eight powerhouses containing eleven turbines. The UARP is one of SMUD's lowest cost power sources. In addition to providing clean hydroelectric power and operational flexibility, it provides habitat for fish and wildlife and a variety of recreational opportunities, including camping, fishing, boating, hiking, horseback riding, mountain biking, and cross-country skiing. The combined capacity of the UARP is approximately 673 MW and represents about 15.0 percent of SMUD's average annual retail energy requirements. SMUD's other power generation facilities include a 3 MW of solar photovoltaic installations, 230 MW Solano Wind Project (Phase 1-3), and five local gas-fired power plants with total capacity of approximately 1,103 MW. In addition, SMUD has entered into several power purchase agreements to help meet its remaining power requirements.

As part of the hydro relicensing process, SMUD entered into long-term contracts to provide certain services to four different government agencies – U.S. Department of Interior Bureau of Land Management, U.S. Department of Agriculture Forest Service, El Dorado County, and the California Department of Parks and Recreation. At December 31, 2020, the liability for these contract payments was $64.8 million.

As of December 2020, SMUD's total reservoir storage in the UARP was about 51.0 percent of capacity, approximately 8.0 percent below the historical average for this date. SMUD manages its reservoirs to maximize water storage going into the summer season and thereby preserving generating capacity during SMUD's high load months. Although reservoir levels in the UARP are only slightly below historical averages, there remains the potential for wide swings in precipitation from year to year and dry conditions could return again in any year. In years with below average rainfall, SMUD may have to generate or purchase replacement energy at additional cost. A Hydro Rate Stabilization Fund (HRSF) was established to help absorb higher energy costs when hydroelectric production is down and to serve as a buffer against unexpected financial developments. In April 2020, $7.7 million was transferred from the HRSF due to below average precipitation. The balance in the HRSF at December 31, 2020 was $74.7 million.

SMUD also has a long-term agreement with the Western Area Power Administration (WAPA) to purchase power generated by the Central Valley Project, a series of federal hydroelectric facilities operated by the U.S. Bureau of Reclamation. SMUD uses a Rate Stabilization Fund (RSF) to offset any excess or deficits in WAPA energy deliveries. Due to excess deliveries by WAPA, $1.6 million was transferred to the RSF in 2020. SMUD also participates in carbon allowance auctions under California Assembly Bill 32 (AB-32), the Global Warming Solutions Act. Proceeds from these auctions are recognized with related expenses. When proceeds from these auctions exceed related expenses the difference is deferred into future years. SMUD participates in the Low Carbon Fuel Standards (LCFS) program under AB-32, which is designed to reduce greenhouse gas emissions associated with the lifecycle of transportation fuels used in California.

SMUD receives credit from this program which are then sold. Revenue from these sales are recognized with related expenses. When proceeds from these sales exceed related expenses the difference is deferred into future years. In 2020, amounts transferred from the RSF to revenue for related expenses for AB-32 and LCFS sales amounted to $4.1 million. In 2020, the Board authorized SMUD to transfer $35.0 million from revenue to the RSF to offset future one-time specific expenses which may have a significant financial impact on SMUD. This will provide reserves to cover large contingencies while limiting or leveling out the impact of cost increases to ratepayers. At December 31, 2020, the balance of the RSF was $94.0 million.

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 $104.0 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 $99.5 million as of December 31, 2020.

Employee Relations and Benefits

SMUD has a four-year memorandum of understanding (MOU) with both of its collective bargaining units, the International Brotherhood of Electrical Workers Local Union 1245, and the Organization of SMUD Employees that is effective through 2021. Both contracts contain a no-strike/no-lockout clause effective during the life of the agreements. In October 2019 SMUD began operating under an MOU for the Public Safety Officers' Association that is effective through 2021. This contract also contains a no-strike/no-lockout clause effective during the life of the agreement.

SMUD participates in the California Public Employees' Retirement System (PERS), an agent multiple-employer public employee defined benefit pension plan. SMUD reports the Net Pension Liability (NPL), which 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, in its Statements of Net Position. At December 31, 2020, the NPL was $469.8 million. SMUD elected to follow accounting for regulated operations under GASB SGAS No. 62, ***"Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements,"*** (GASB No. 62) and as of December 31, 2020, the balance of the regulatory asset for pension amounted to $374.6 million. Amortization of the regulatory asset began in 2018 over a period of 25 years. In 2020, as part of a ten-year funding strategy for the unfunded liability, SMUD made an additional $99.0 million in supplemental contributions to the plan as part of this strategy.

SMUD provides other postemployment benefits (OPEB) to all employees who retire from SMUD and their dependents, in accordance with SMUD policy and MOUs. These benefits are funded through the PERS California Employer's Retiree Benefit Trust, an agent multiple-employer plan. In 2018, SMUD implemented SGAS No. 75 ***"Accounting and Financial Reporting for Postemployment Benefits Other than Pensions"*** (GASB No. 75). The primary objective of GASB No. 75 is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions. SMUD is required to report the Net OPEB Liability (NOL) or Net OPEB Asset (NOA), which is the difference between the actuarial present value of projected OPEB benefit payments attributable to employees' past service and the OPEB plan's fiduciary net position, in its Statements of Net Position. At December 31, 2020, the NOA was $1.0 million. SMUD elected to follow accounting for regulated operations under GASB No. 62 and recorded a regulatory asset and as of December 31, 2020, the balance of the regulatory asset for OPEB amounted to $306.6 million. Amortization of the regulatory asset began in 2020 over a period of 25 years.

Developments in the Energy Market

New developments in the energy market at both the federal and state level kept SMUD on high alert as it continued to monitor and address the potential impacts on the organization. Legislation at the federal level include policies on cyber security, regulations related to transmission access, the North American Electric Reliability Corporation reliability standards, anti-market manipulation rules, advance refunding or refinancing municipal bonds and GHG emissions. Legislation at the state level includes bills that provide for GHG standards and greater investment in energy efficiency, mandate rooftop solar, renewable portfolio standards, wildfire mitigation and ongoing regulatory proceedings related to Sacramento - San Joaquin River Bay - Delta processes.

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, 2020, total regulatory assets were $742.6 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, 2020, total regulatory credits were $516.2 million.

Requests for Information

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

FINANCIAL POSITION

CONDENSED STATEMENTS OF NET POSITION

	December 31,		
	2020	2019	2018 (restated)*
	(millions of dollars)		
Assets			
Electric Utility Plant - net	$ 3,747	$ 3,626	$ 3,517
Restricted and Designated Assets	187	173	120
Current Assets	1,239	933	960
Noncurrent Assets	1,516	1,606	1,620
Total Assets	6,689	6,338	6,217
Deferred Outflows of Resources	271	238	229
Total Assets and Deferred Outflows of Resources	$ 6,960	$ 6,576	$ 6,446
Liabilities			
Long-Term Debt - net	$ 3,259	$ 2,944	$ 2,639
Current Liabilities	437	491	766
Noncurrent Liabilities	694	731	730
Total Liabilities	4,390	4,166	4,135
Deferred Inflows of Resources	613	606	586
Net Position	1,957	1,804	1,725
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 6,960	$ 6,576	$ 6,446

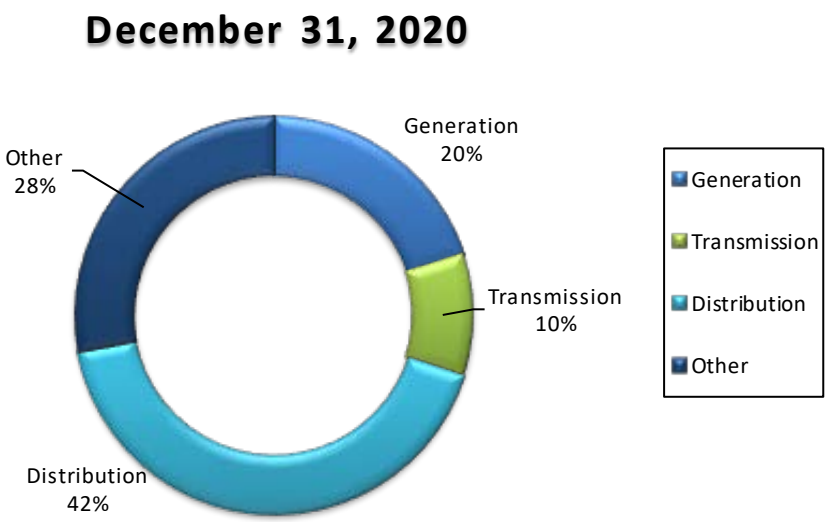
*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2018 Statement of Net Position.

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES

2020 Compared to 2019

- As of December 31, 2020, SMUD has invested approximately $3,747.0 million in electric utility plant assets and construction work in progress (CWIP) net of accumulated depreciation. Electric Utility Plant - net makes up about 54 percent of SMUD's Total Assets and Deferred Outflows of Resources, which is similar to 2019. In 2020, SMUD capitalized approximately $201.0 million of additions to electric utility plant in the Statements of Net Position. The additions were primarily due to the completion of Slab Creek, distribution line work, purchases related to the replacement of bulk substations. These additions were offset by the retirement of distribution assets, fleet equipment and communication equipment.

The following charts show the breakdown of Electric Utility Plant - net by major plant category:



- SMUD's restricted and designated assets are comprised of debt service reserves, nuclear decommissioning trust funds, rate stabilization fund, and other third-party agreements or Board actions, less the current portion. These assets increased $14.1 million during 2020. The increase was due to transfers of $25.0 million to the RSF (including the HRSF), as a result of $35.0 million deferral of 2020 operating revenues for recognition in future years to offset one-time expenditures not identified in the annual budget, offset by HRSF transfer to revenue for below average precipitation, and funds used for low carbon and electric vehicle programs. In addition, there was a decrease of third-party agreements of $6.7 million and decrease of $4.3 million in revenue bond, debt service and construction reserves and the current portion.

- Total current assets increased $305.6 million in 2020. Unrestricted cash and cash equivalents and unrestricted investments increased $263.4 million primarily as a result of the issuance of $400.0 million of new debt, receivables from retail customers – net increased $23.5 million due to suspension of disconnections and collection activities amidst COVID-19 in March 2020, and inventory increased by $12.3 million.

- Total noncurrent assets decreased $89.7 million primarily due to decreases in unrestricted investments, regulatory costs for future recovery and prepaid gas.

- Total deferred outflows of resources increased by $32.7 million primarily due to an increase in deferred pension and OPEB outflows of $70.0 million offset by a decrease in accumulated decrease in fair value of hedging derivatives of 33.6 million.

2019 compared to 2018

- As of December 31, 2019, SMUD has invested approximately $3,625.9 million in electric utility plant assets and construction work in progress (CWIP) net of accumulated depreciation. Electric Utility Plant - net makes up about 55 percent of SMUD's Total Assets and Deferred Outflows of Resources, which is unchanged compared to 2018. In 2019, SMUD capitalized approximately $420.4 million of additions to electric utility plant in the Statements of Net Position. The additions were primarily due to the renovation of the Headquarters building, distribution line work, purchases related to the replacement of bulk substations, investments in software and hardware and major overhauls in the Joint

Power Authorities (JPAs). These additions were offset by the divestment of the Rosa gas reserves, retirement of distribution assets, fleet equipment and communication equipment.

- SMUD's restricted and designated assets increased $53.0 million during 2019. The increase was due to transfers of $47.0 million to the RSF (including the HRSF), as a result of above average precipitation, higher energy deliveries from WAPA and excess AB-32 auction and LCFS credit sales. In addition, there was an increase of third-party agreements of $16.4 million, offset by a decrease of $10.6 million in revenue bond, debt service and construction reserves and the current portion.

- Total current assets increased $55.9 million in 2019. Unrestricted cash and cash equivalents increased $44.3 million, regulatory costs to be recovered within one year increased by $12.8 million, unrestricted investments increased by 11.5 million, and prepayments and other increased by $7.7 million. These increases were offset by a decrease in prepaid gas of $22.2 million.

- Total noncurrent assets decreased $97.9 million primarily due to decreases in unrestricted investments, regulatory costs for future recovery and prepaid gas.

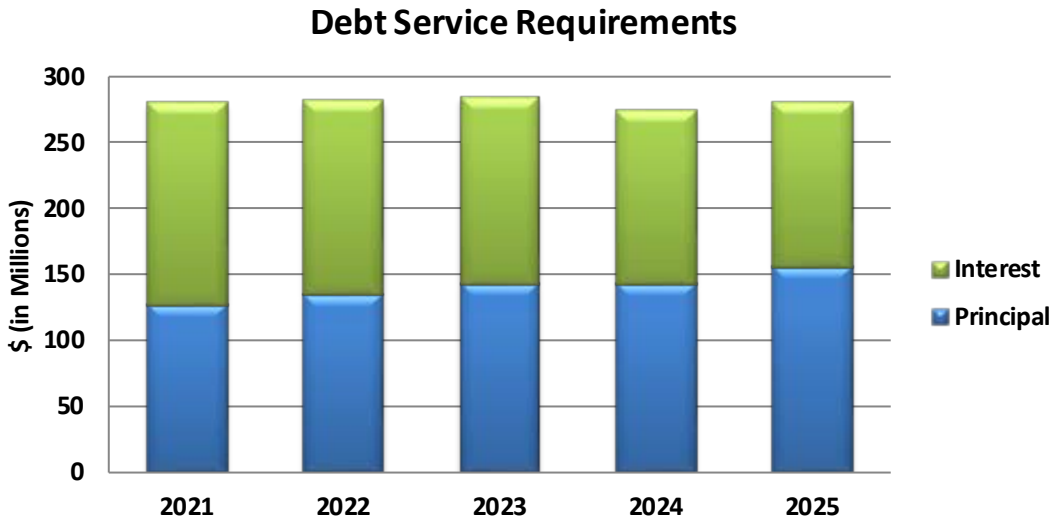
- Total deferred outflows of resources increased by $9.4 million due to an increase in deferred pension and OPEB outflows of $14.2 million offset by a decrease in unamortized bond losses of $4.2 million.

LIABILITIES AND DEFERRED INFLOWS OF RESOURCES

2020 compared to 2019

- In May 2020, SMUD issued $400.0 million of 2020 Series H Revenue Bonds. Proceeds from the 2020 Series H Bonds were used to pay off all the outstanding commercial paper notes and reimburse SMUD for 2018 and 2019 capital projects. The 2020 Series H Bonds have a fixed coupon rate of 4.0 percent to 5.0 percent and amortize from 2029 to 2050.

The following table shows SMUD's future debt service requirements through 2025 as of December 31, 2020:



As of December 31, 2020, 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.

- Total current liabilities decreased $54.7 million during 2020. The decrease was primarily due to pay off of commercial paper notes of $50.0 million and decrease in hedging derivative instruments maturing within one year of $19.1 million. This decrease was offset by an increase in purchased power payable, interest payable and long-term debt due within one year of $18.5 million.

- Total noncurrent liabilities decreased $36.8 million during 2020. The decrease was mainly due to a $32.2 million decrease in the net OPEB liability and hedging derivative investments of $14.5 million, offset by an increase in net pension liability and accrued decommissioning of $8.8 million.

- Total deferred inflows of resources increased $6.6 million. The increase was primarily due to regulatory credits increased by $26.7 million and OPEB inflows increased by $16.0 million, offset by a decrease in deferred pension inflows of $31.8 million.

2019 compared to 2018

- In July 2019, SMUD issued $191.9 million of 2019 Series G Revenue Bonds, $100.0 million of 2019 Series A Subordinate Revenue Bonds, and $100.0 million of 2019 Series B Subordinate Revenue Bonds. The 2019 Series G Bonds have a fixed coupon rate of 2.375 percent to 5.0 percent and amortize from 2029 to 2041. The 2019 Series A has a fixed interest coupon rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2023. The 2019 Series B has a fixed coupon interest rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2025. Proceeds from 2019 Series G Bonds, the 2019 Series A Bonds and the 2019 Series B Bonds were used to refund outstanding commercial paper.

  In September 2019, CVFA defeased $5.4 million of 2009 Series Bonds maturing in July 2020, along with the accrued interest using CVFA's available funds. The corresponding amount was placed in an irrevocable trust which has a balance of $5.6 million at December 31, 2019. In addition, 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 has a balance of $13.7 million as of December 31, 2019. The defeasances resulted in a current accounting loss of $0.8 million which is included in Interest on Debt in the Statements of Revenues, Expenses, and Changes in Net Position.

- Total current liabilities decreased $274.4 million during 2019. The decrease was mainly due to decreases in commercial paper, accounts payables, and long-term debt due within one year of $308.3 million, offset by increases in interest payable, and hedging derivative instruments maturing within one year of $26.3 million.

- Total noncurrent liabilities increased $1.0 million during 2020. The increase was mainly due to a $13.6 million increase in the net pension liability and a $10.1 million increase in the net OPEB liability, offset by a decrease in investment and hedging derivative investments of $19.4 million and a decrease in accrued decommissioning of $4.5 million.

- Total deferred inflows of resources increased $19.6 million. Regulatory credits increased by $46.8 million. This increase was offset by a decrease in deferred pension inflows of $16.8 million and OPEB inflows of $12.2 million.

RESULTS OF OPERATIONS

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	December 31,		
	2020	2019	2018 (restated)*
	(millions of dollars)		
Operating revenues	$ 1,588	$ 1,559	$ 1,595
Operating expenses	(1,389)	(1,363)	(1,353)
Operating income	199	196	242
Other revenues/(expenses)	63	(19)	57
Interest charges	(109)	(98)	(90)
Change in net position	153	79	209
Net position - beginning of year	1,804	1,725	1,516
Net position - end of year	$ 1,957	$ 1,804	$ 1,725

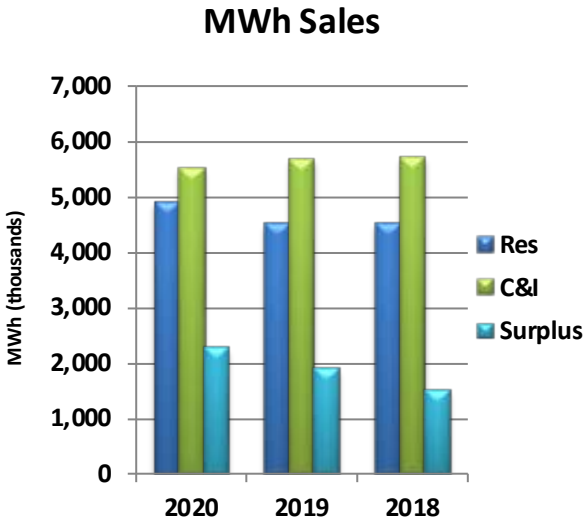
*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2018 Statement of Revenue, Expenses and Changes in Net Position.

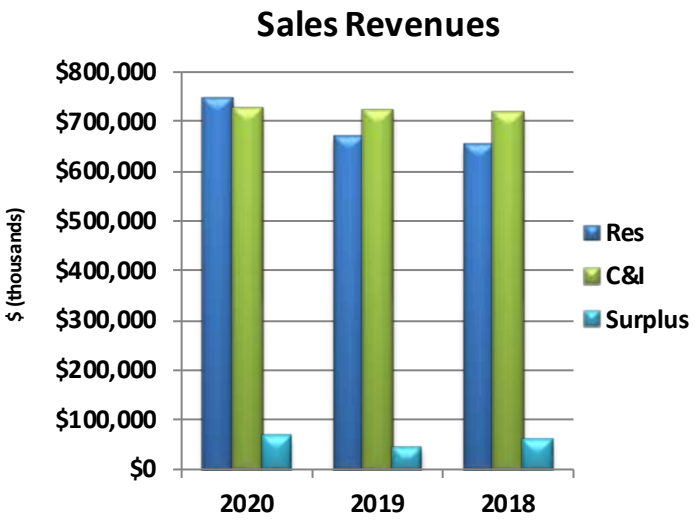
2020 compared to 2019

OPERATING REVENUES

Total operating revenues were $1,588 million for 2020, an increase of $28.7 million or 1.8 percent over 2019 operating revenues. In 2020, the impacts of COVID-19 led to residential MWh sales increase of 9.2 percent and sales revenues increase of 11.9 percent compared to 2019, primarily due to increased remote work from home and the unseasonably hot summer. The commercial & industrial MWh sales decreased 2.9 percent and sales revenues increased 0.6 percent compared to 2019, primarily due to the California mandated shut down and limited re-openings of commercial businesses for majority of year.

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:





The net rate stabilization transfers (including the HRSF) increased by $21.9 million. In 2020, SMUD transferred $48.2 million to the RSF primarily due to a $35.0 million deferral of 2020 operating revenues for recognition in future years to offset one-time expenditures not identified in the annual budget and $9.8 million LCFS sales. SMUD also transferred $15.4 million from the RSF to be used for low carbon and electric vehicle programs and $7.7 million from the HRSF as a result of a below average precipitation.

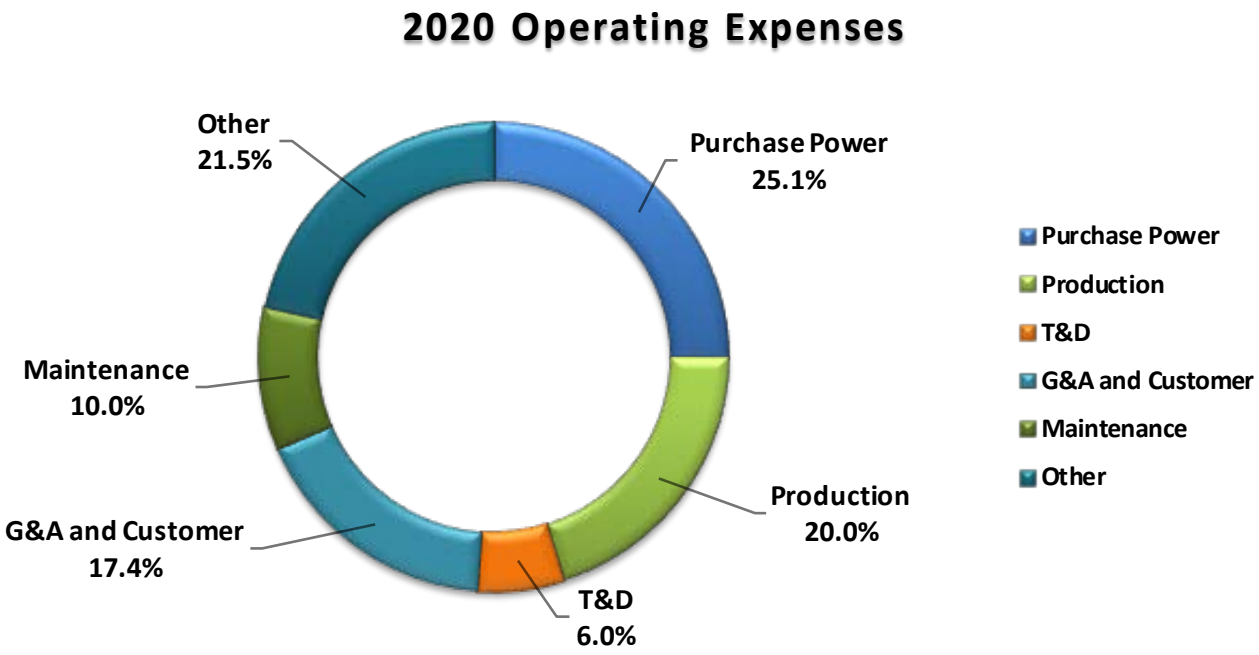
Wholesale revenues are comprised of both surplus gas and energy sales which are part of the operational strategy in managing fuel and energy costs. In 2020, energy sales were higher by $22.3 million as compared to 2019 due to higher energy prices and energy sales. Surplus gas sales were lower than 2019 by $32.7 million due to lower gas prices and volume of gas sold.

OPERATING EXPENSES

Total operating expenses were $1,389 million for 2020, an increase of $25.6 million or 1.9 percent over 2019.

- Purchased power increased by $44.5 million or 14.6 percent due to higher energy purchases offset by lower prices.
- Production expense decreased by $18.4 million or 6.2 percent due to reduction of hydro generation and fuel costs.
- General, administrative and customer decreased by $15.9 million or 6.2 percent due to reduction in administrative and labor costs related to employees working remotely and reduction in customer programs during COVID.
- Maintenance expense increased by $3.3 million or 2.4 percent primarily due to $19.3 million increase in outside service costs related to wild-fire tree trimming offset by $10.3 million decrease in thermal plant maintenance compared to 2019.
- Other expenses increased by $15.0 million or 5.3 percent primarily due to increase of depreciation expense of $17.0 million as a result of $402.4 million of additions to electric utility plant in 2019.

The following chart show the breakdown of operating expenses for 2020:



OTHER REVENUES

Total other revenues (net) were $63.0 million for 2020, an increase of $82.7 million over 2019. In 2020, SMUD received $10.9 million related to an early termination of a gas prepay contract and $5.5 million insurance proceeds on the 2017 winter storm claim. The remaining increase is primarily due to a $52.1 million loss on the divestment of SMUD's interest in the Rosa gas properties in 2019.

2019 compared to 2018

RESULTS OF OPERATIONS

- Total operating revenues decreased $36.2 million in 2019. Rate stabilization transfers decreased by $50.2 million. In 2019, SMUD transferred $28.6 million to the RSF as a result of higher energy deliveries from WAPA and excess proceeds from AB-32 auctions and LCFS sales. SMUD also transferred $18.4 million to the HRSF as a result of above average precipitation.

- In 2019, energy sales were lower by $15.1 million as compared to 2018 due to lower energy prices offset by higher energy sales. Surplus gas sales were higher than 2018 by $8.2 million due to higher gas prices and an increase in the volume of gas sold.

- Residential, commercial, and industrial revenues increased by $26.2 million compared to 2018 due to the rate increase that took place in 2019.

- Total operating expenses increased $10.0 million compared to 2018. Administrative, general and customer and maintenance expenses increased by $32.6 million. These expenses were offset by decreases of purchased power, production and transmission and distribution expenses of $24.1 million mainly due to lower fuel costs.

- Total other revenues were $77.0 million lower in 2019. The decrease in other revenue as compared to 2018 is due to the divestment of SMUD's interest in the Rosa gas properties resulting in a loss of $52.1 million. Additionally, in 2018 other revenue included a gain of $46.7 million from the repurchase of the Solano Wind Phase 3 plant. These decreases in other revenue were offset by lower arbitration payments of $17.0 million.

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SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
ASSETS		
ELECTRIC UTILITY PLANT		
Plant in service	$ 6,425,366	$ 6,227,374
Less accumulated depreciation and depletion	(3,139,526)	(2,955,316)
Plant in service - net	3,285,840	3,272,058
Construction work in progress	461,319	353,802
Total electric utility plant - net	3,747,159	3,625,860
RESTRICTED AND DESIGNATED ASSETS		
Revenue bond and debt service reserves	121,845	116,527
Nuclear decommissioning trust fund	8,873	8,798
Rate stabilization fund	168,726	143,669
Other funds	23,246	29,953
Less current portion	(135,550)	(125,870)
Total restricted and designated assets	187,140	173,077
CURRENT ASSETS		
Unrestricted cash and cash equivalents	680,618	255,578
Unrestricted investments	33,798	195,435
Restricted and designated cash and cash equivalents	44,014	41,717
Restricted and designated investments	91,536	84,153
Receivables - net:		
Retail customers	175,777	152,264
Wholesale and other	38,863	44,271
Regulatory costs to be recovered within one year	38,162	37,622
Investment derivative instruments maturing within one year	-0-	488
Hedging derivative instruments maturing within one year	4,913	8,732
Inventories	84,037	71,719
Prepaid gas to be delivered within one year	23,261	20,866
Prepayments and other	23,915	20,453
Total current assets	1,238,894	933,298
NONCURRENT ASSETS		
Unrestricted investments	-0-	43,962
Regulatory costs for future recovery	742,588	766,808
Prepaid gas	692,511	715,772
Prepaid power and capacity	588	795
Investment derivative instruments	33	-0-
Hedging derivative instruments	8,606	7,986
Energy efficiency loans - net	18,503	23,262
Credit support collateral deposits	5,650	4,400
Due from affiliated entity	28,370	28,858
Prepayments and other	19,038	13,703
Total noncurrent assets	1,515,887	1,605,546
TOTAL ASSETS	6,689,080	6,337,781
DEFERRED OUTFLOWS OF RESOURCES		
Accumulated decrease in fair value of hedging derivative instruments	51,580	85,194
Deferred pension outflows	176,340	105,868
Deferred other postemployment benefits outflows	26,136	26,658
Deferred asset retirement obligations outflows	1,734	1,956
Unamortized bond losses	15,216	18,802
TOTAL DEFERRED OUTFLOWS OF RESOURCES	271,006	238,478
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	$ 6,960,086	$ 6,576,259

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

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
LIABILITIES		
LONG-TERM DEBT - net	$ 3,259,312	$ 2,943,795
CURRENT LIABILITIES		
Commercial paper notes	-0-	50,000
Accounts payable	101,396	103,829
Purchased power payable	33,335	26,997
Credit support collateral obligation	4,413	3,235
Long-term debt due within one year	127,390	118,305
Accrued decommissioning	6,751	5,649
Interest payable	52,940	49,832
Accrued salaries and compensated absences	44,703	45,403
Investment derivative instruments maturing within one year	1,401	2,235
Hedging derivative instruments maturing within one year	22,284	41,374
Customer deposits and other	41,887	44,379
Total current liabilities	436,500	491,238
NONCURRENT LIABILITIES		
Net pension liability	469,820	467,647
Net other postemployment benefits liability	-0-	32,211
Accrued decommissioning	92,723	86,054
Investment derivative instruments	7,903	8,769
Hedging derivative instruments	29,296	43,820
Self insurance and other	94,238	92,304
Total noncurrent liabilities	693,980	730,805
TOTAL LIABILITIES	4,389,792	4,165,838
DEFERRED INFLOWS OF RESOURCES		
Accumulated increase in fair value of hedging derivative instruments	13,519	16,718
Regulatory credits	516,209	489,486
Deferred pension inflows	14,212	45,996
Deferred other postemployment benefits inflows	58,854	42,859
Unamortized bond gains	6,504	7,516
Unearned revenue	3,484	3,569
TOTAL DEFERRED INFLOWS OF RESOURCES	612,782	606,144
NET POSITION		
Net investment in capital assets	1,112,982	1,284,694
Restricted:		
Revenue bond and debt service	63,351	60,744
Other funds	18,833	26,828
Unrestricted	762,346	432,011
TOTAL NET POSITION	1,957,512	1,804,277
COMMITMENTS, CLAIMS AND CONTINGENCIES (Notes 17 and 18)		
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION	$ 6,960,086	$ 6,576,259

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,	
	2020	2019
	(thousands of dollars)	
OPERATING REVENUES		
Residential	$ 710,912	$ 666,477
Commercial and industrial	712,495	714,001
Street lighting and other	38,493	43,321
Wholesale	135,522	145,915
Senate Bill - 1 revenue deferral	2,276	2,765
AB-32 revenue	-0-	26,936
LCFS revenue	9,762	3,825
Public good deferral	3,501	2,959
Rate stabilization fund transfers	(25,056)	(46,975)
Total operating revenues	1,587,905	1,559,224
OPERATING EXPENSES		
Operations:		
Purchased power	348,040	303,566
Production	278,236	296,612
Transmission and distribution	83,236	86,230
Administrative, general and customer	241,581	257,464
Public good	57,198	63,572
Maintenance	138,734	135,420
Depreciation	206,452	189,469
Depletion	-0-	4,103
Regulatory amounts collected in rates	34,915	26,389
Total operating expenses	1,388,392	1,362,825
OPERATING INCOME	199,513	196,399
NON-OPERATING REVENUES AND EXPENSES		
Other revenues and (expenses):		
Interest income	14,291	16,639
Investment expense	(3,455)	(3,700)
Other income (expense) - net	52,186	(32,573)
Total other revenues and (expenses)	63,022	(19,634)
Interest charges:		
Interest on debt	109,300	104,960
Allowance for funds used during construction	-0-	(7,110)
Total interest charges	109,300	97,850
Total non-operating revenues and (expenses)	(46,278)	(117,484)
CHANGE IN NET POSITION	153,235	78,915
NET POSITION - BEGINNING OF YEAR	1,804,277	1,725,362
NET POSITION - END OF YEAR	$ 1,957,512	$ 1,804,277

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

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF CASH FLOWS

	Year Ended December 31,	
	2020	2019
	(thousands of dollars)	
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 1,426,267	$ 1,423,897
Receipts from surplus power and gas sales	134,080	153,216
Other receipts	23,660	32,305
Payments to employees - payroll and other	(406,810)	(366,815)
Payments for wholesale power and gas purchases	(491,480)	(476,205)
Payments to vendors/others	(315,982)	(350,465)
Net cash provided by operating activities	369,735	415,933
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Repayment of debt	(16,675)	(34,560)
Receipts from federal and state grants	10,214	10,333
Proceeds from insurance settlements	5,500	-0-
Interest on debt	(30,122)	(21,223)
Net cash used in noncapital financing activities	(31,083)	(45,450)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Construction expenditures	(357,897)	(330,412)
Proceeds from land sales	479	878
Payments for gas fields divestment	(232)	(8,521)
Contributions in aid of construction	19,551	15,959
Net proceeds from bond issues	483,456	475,623
Repayments and refundings of debt	(101,630)	(128,685)
Issuance of commercial paper	-0-	161,250
Repayments of commercial paper	(50,000)	(400,000)
Interest on debt	(113,864)	(99,822)
Net cash used in capital and related financing activities	(120,137)	(313,730)
CASH FLOWS FROM INVESTING ACTIVITIES		
Sales and maturities of securities	386,898	686,547
Purchases of securities	(197,811)	(703,118)
Proceeds from termination of prepaid gas contracts	10,915	-0-
Interest and dividends received	15,406	16,105
Investment revenue/expenses - net	(3,420)	(3,682)
Net cash provided by (used in) investing activities	211,988	(4,148)
Net increase in cash and cash equivalents	430,503	52,605
Cash and cash equivalents at the beginning of the year	308,108	255,503
Cash and cash equivalents at the end of the year	$ 738,611	$ 308,108
Cash and cash equivalents included in:		
Unrestricted cash and cash equivalents	$ 680,618	$ 255,578
Restricted and designated cash and cash equivalents	44,014	41,717
Restricted and designated assets (a component of the total of $187,140 and $173,077 at December 31, 2020 and 2019, respectively)	13,979	10,813
Cash and cash equivalents at the end of the year	$ 738,611	$ 308,108

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,	
	2020	2019
	(thousands of dollars)	
Operating income	$ 199,513	$ 196,399
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	206,452	189,469
Depletion	-0-	4,103
Regulatory amortization	34,915	26,389
Other Amortizations	24,307	31,110
Revenue deferred to (recognized from) regulatory credits - net	19,279	41,251
Other (receipts) payments - net	(3,549)	(6,729)
Changes in operating assets, deferred outflows, liabilities and deferred inflows:		
Receivables - retail customers, wholesale and other	(16,631)	14,211
Inventories, prepayments and other	(14,190)	(7,852)
Credit support collateral deposits	(1,250)	1,500
Deferred pension outflows	(70,472)	(2,837)
Deferred other postemployment benefits outflows	522	(11,328)
Payables and accruals	40,322	(51,429)
Credit support collateral obligation	1,178	747
Decommissioning	(4,814)	(5,179)
Net pension liability	2,173	13,603
Net other postemployment benefits liability	(32,211)	10,145
Deferred pension inflows	(31,784)	(16,770)
Deferred other postemployment benefits inflows	15,995	(12,165)
Deferred unearned revenue	(20)	1,295
Net cash provided by operating activities	$ 369,735	$ 415,933

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

	Year Ended December 31,	
	2020	2019
	(thousands of dollars)	
Amortization of debt related (expenses) and premiums - net	$ 37,939	$ 30,797
(Loss) Gain on debt extinguishment and refundings	-0-	(731)
Unrealized holding gain (loss)	1,768	4,165
Change in valuation of derivative financial instruments	31,661	8,824
Amortization of revenue for assets contributed in aid of construction	14,250	16,904
Allowance for funds used during construction	-0-	7,110
Construction expenditures included in accounts payable	39,196	81,902
Losses on sale and asset retirements	(287)	(845)
Loss on gas fields divestment	-0-	(43,609)
Write-off capital projects and preliminary surveys	(1,329)	(13,614)

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

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. 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 2020 and 2019 were 3.3 percent and 3.1 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	5 to 90 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).

Investment in Gas Properties. In 2019, SMUD sold its approximate 21 percent non-operating ownership interest in the Rosa Unit gas properties in New Mexico, of which SMUD's portion of the extracted gas was transported to use in its component unit natural gas fired power plants. The loss on sale was $52.1 million and included as Other income (expense) – net in the Statements of Revenues, Expenses and Changes in Net Position.

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 $22.6 million and $29.3 million of Other funds as of December 31, 2020 and 2019, respectively. 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, 2020 and 2019. 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 implemented Statement of Governmental Accounting Standards (SGAS) No. 83, ***"Certain Asset Retirement Obligations"*** in 2019. 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, 2020 and 2019, unbilled revenues were $68.8 and $69.4 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 and Allowance for Doubtful Accounts. 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. Due to COVID-19, SMUD suspended disconnections for non-payment beginning in March 2020 through April 2021. At December 31, 2020, SMUD estimated its uncollectible retail customer accounts at $45.0 million 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.

The summarized activity of the changes in the allowance for doubtful accounts during 2020 and 2019 is presented below:

	Balance at beginning of Year	Additions	(Write-offs) and Recoveries	Balance at end of Year
		(thousands of dollars)		
Other Non-Electric:				
December 31, 2020	$ 2,790	$ 802	$ 37	$ 3,629
December 31, 2019	$ 1,509	$ 2,188	$ (907)	$ 2,790
Retail Customers:				
December 31, 2020	$ 3,044	$ 43,966	$ (2,010)	$ 45,000
December 31, 2019	$ 6,005	$ 3,137	$ (6,098)	$ 3,044
Energy Efficiency Loans:				
December 31, 2020	$ 680	$ (194)	$ 183	$ 669
December 31, 2019	$ 637	$ (483)	$ 526	$ 680

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, 2020 and 2019, the total estimated liability for vacation and other compensated absences was $37.7 million and $31.3 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.

Allowance for Funds Used During Construction (AFUDC). SMUD capitalizes, as an additional cost of Construction Work In Progress (CWIP), AFUDC, which represents the cost of borrowed funds used for such purposes. The amount capitalized is determined by a formula prescribed by FERC. The AFUDC rate for 2019 was 2.4 percent of eligible CWIP. In 2020, SMUD implemented GASB 89 ***"Accounting for Interest Cost Incurred before the End of a Construction Period"*** and has discontinued including the cost of borrowed funds as an additional cost of CWIP (see Note 3).

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 obligations for several land sites, including one where it will be building a substation (see Note 18). At December 31, 2020 and 2019, the total pollution remediation liability was $19.3 million and $17.8 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, 2020 and 2019, the liability for these contract payments was $64.8 million and $63.4 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 (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, Low Carbon Fuel Standards (LCFS) was enacted through AB-32. The CARB is responsible for the adoption and 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. The LCFS credits are sold to parties that have a compliance obligation. CARB requires that 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 Liability (NPL). The 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). SMUD implemented SGAS No. 75, ***"Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions,"*** (GASB No. 75) in 2018. 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. At December 31, 2020, SMUD's NOA is $0.8 million and is recorded in Prepayments and other under Noncurrent Assets on the Statements of Net Position. At December 31, 2019, SMUD's NOL is $32.2 million and is recorded under Noncurrent Liabilities on the Statements of 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. When applicable, these programs may be subject to financial and compliance audits pursuant to regulatory requirements. SMUD considers the possibility of any material disallowances to be remote. 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 2020 and 2019 due to budget sequestration by the federal government. SMUD recognized $9.3 million and $9.2 million in revenues in 2020 and 2019, respectively 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 19, 2021, which is the date that the financial statements were available to be issued.

Reclassifications. Certain amounts in the 2019 Financial Statements have been reclassified in order to conform to the 2020 presentation.

Recent Accounting Pronouncements, adopted. In January 2020, GASB issued SGAS No. 92, ***"Omnibus 2020"*** (GASB No. 92). This statement addresses a variety of topics and includes specific provisions to clarify issues related to leases, intra-entity transfers, pension and postemployment benefits, asset retirement obligations, risk pools, fair value measurements, and derivative instruments. This statement is effective for SMUD in 2020 or 2022 depending on the topic. SMUD has assessed the note disclosure impact of adopting the derivative instruments topic of this statement and has updated the terminology used to refer to derivative or derivatives to derivative instrument or derivative instruments, respectively (see Note 9). No other topics in this statement apply to SMUD.

In May 2020, GASB issued SGAS No. 95, ***"Postponement of the Effective Dates of Certain Authoritative Guidance"*** (GASB No. 95). The primary objective of this statement is to provide temporary relief to governments and other stakeholders as a result of the COVID-19 pandemic. GASB No. 95 postpones the effective dates of certain provisions in statements and implementation guides that first became effective or are scheduled to become effective for periods beginning after June 15, 2018, and later. This statement is effective for SMUD in 2020. SMUD has postponed the implementation of GASB No. 87, ***"Leases"*** and GASB No. 93, ***"Replacement of Interbank Offered Rates."***

Recent Accounting Pronouncements, not yet adopted. In June 2017, GASB issued SGAS No. 87, ***"Leases"*** (GASB No. 87). The objective of this statement is 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. This statement is effective for SMUD in 2022. SMUD is currently assessing the financial statement impact of adopting this statement.

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. SMUD is currently assessing the financial statement impact of adopting this statement but does not expect it to be material.

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 2020, GASB issued SGAS No. 97, ***"Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans"*** (GASB No. 97). The primary objectives of this statement are to (1) increase consistency and comparability related to the reporting of fiduciary component units in circumstances in which a potential component unit does not have a governing board and the primary government performs the duties that a governing board typically would perform; (2) mitigate costs associated with the reporting of certain defined contribution pension plans, defined contribution other postemployment benefit (OPEB) plans, and employee benefit plans other than pension plans or OPEB plans as fiduciary component units in fiduciary fund financial statements; and (3) enhance the relevance, consistency, and comparability of the accounting and financial reporting for Internal Revenue Code Section 457 deferred compensation plans that meet the definition of a pension plan and for benefits provided through those plans. This statement is effective for SMUD in 2022. SMUD is currently assessing the financial statement impact of adopting this statement but does not expect it to be material.

NOTE 3. ACCOUNTING CHANGE

In June 2018, GASB issued SGAS No. 89, ***"Accounting for Interest Cost Incurred before the End of a Construction Period"*** (GASB No. 89). The objectives of this statement are (1) to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) to simplify accounting for interest cost incurred before the end of a construction period. GASB No. 89 requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity. SMUD has assessed the financial statement impact of adopting the new statement and its impact is not material. Although GASB No. 95 postponed this statement for one year to 2021, SMUD had already implemented this statement before GASB No. 95 was issued.

Beginning January 1, 2020, SMUD recognizes interest costs incurred before the end of a construction period as an expense in the period in which the costs are incurred and no longer includes these interest costs as part of the historical cost of a capital asset. This standard is to be applied prospectively, so the interest costs already included in construction work in progress (CWIP) on December 31, 2019 will still be included as part of the historical cost of the capital asset.

NOTE 4. ELECTRIC UTILITY PLANT

The summarized activity of SMUD's Electric Utility Plant during 2020 is presented below:

	Balance January 1, 2020	Additions	Transfers and Disposals	Balance December 31, 2020
		(thousands of dollars)		
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 142,291	$ 17,471	$ (247)	$ 159,515
CWIP	353,802	318,354	(210,837)	461,319
Total nondepreciable electric utility plant	496,093	335,825	(211,084)	620,834
Depreciable Electric Utility Plant:				
Generation	1,670,224	43,017	(2,821)	1,710,420
Transmission	390,296	21,255	(984)	410,567
Distribution	2,427,408	76,335	(5,217)	2,498,526
Investment in JPAs	22,844	7,168	-0-	30,012
Intangibles	495,651	21,764	-0-	517,415
General	1,078,660	31,463	(11,212)	1,098,911
	6,085,083	201,002	(20,234)	6,265,851
Less: accumulated depreciation and depletion	(2,948,350)	(204,088)	20,191	(3,132,247)
Less: accumulated amortization on JPAs	(6,966)	(313)	-0-	(7,279)
	(2,955,316)	(204,401)	20,191	(3,139,526)
Total depreciable plant	3,129,767	(3,399)	(43)	3,126,325
Total Electric Utility Plant - net	$ 3,625,860	$ 332,426	$ (211,127)	$ 3,747,159

The summarized activity of SMUD's Electric Utility Plant during 2019 is presented below:

	Balance January 1, 2019	Additions	Transfers and Disposals	Balance December 31, 2019
	(thousands of dollars)			
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 139,625	$ 3,418	$ (752)	$ 142,291
CWIP	428,249	342,545	(416,992)	353,802
Total nondepreciable electric utility plant	567,874	345,963	(417,744)	496,093
Depreciable Electric Utility Plant:				
Generation	1,632,081	38,956	(813)	1,670,224
Transmission	336,407	54,637	(748)	390,296
Distribution	2,337,484	96,264	(6,340)	2,427,408
Investment in gas properties	206,624	36	(206,660)	-0-
Investment in JPAs	19,012	3,832	-0-	22,844
Intangibles	426,267	69,836	(452)	495,651
General	929,701	156,812	(7,853)	1,078,660
	5,887,576	420,373	(222,866)	6,085,083
Less: accumulated depreciation and depletion	(2,932,724)	(192,524)	176,898	(2,948,350)
Less: accumulated amortization on JPAs	(6,653)	(313)	-0-	(6,966)
	(2,939,377)	(192,837)	176,898	(2,955,316)
Total depreciable plant	2,948,199	227,536	(45,968)	3,129,767
Total Electric Utility Plant - net	$ 3,516,073	$ 573,499	$ (463,712)	$ 3,625,860

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 $172.0 million (unaudited) at December 31, 2020, 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 $17.5 million and $17.9 million in 2020 and 2019, respectively.

Summary financial information for TANC is presented below:

	December 31,	
	2020 (Unaudited)	2019 (Unaudited)
	(thousands of dollars)	
Total Assets	$ 356,807	$ 345,739
Total Deferred Outflows of Resources	731	1,240
Total Assets and Deferred Outflows of Resources	$ 357,538	$ 346,979
Total Liabilities	$ 305,096	$ 312,470
Total Net Position	52,442	34,509
Total Liabilities and Net Position	$ 357,538	$ 346,979
Changes in Net Position for the Six Months Ended December 31	$ (564)	$ (413)

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 $1.7 million in 2020 and $2.1 million in 2019.

Summary financial information for BANC is presented below:

	December 31,	
	2020 (Audited)	2019 (Audited)
	(thousands of dollars)	
Total Assets	$ 8,125	$ 6,184
Total Liabilities	$ 8,125	$ 6,184
Total Net Position	-0-	-0-
Total Liabilities and Net Position	$ 8,125	$ 6,184
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 Cogeneration Project. CVFA is a JPA formed by SMUD and the Sacramento Regional County Sanitation District. CVFA operates the Carson Project, a 65 MW (net) natural gas-fired cogeneration facility and a 42 MW (net) natural gas-fired simple cycle peaking plant.

SCA Procter & Gamble Cogeneration Project. SCA is a JPA formed by SMUD and the SFA. SCA operates the Procter & Gamble Project, a 136 MW (net) natural gas-fired cogeneration facility and a 50 MW (net) natural gas-fired simple cycle peaking plant.

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.

SPA Campbell Soup Cogeneration Project. SPA is a JPA formed by SMUD and the SFA. SPA operates the Campbell Soup Project, a 160 MW (net) natural gas-fired cogeneration facility, and the McClellan Project, a 72 MW (net) natural gas-fired simple cycle peaking plant.

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 2020 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2020
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Assets						
Electric Utility Plant - net	$ 31,264	$ 48,502	$ 207,058	$ 48,351	$ -0-	$ -0-
Restricted Assets	-0-	-0-	-0-	-0-	-0-	90
Current Assets	12,373	31,823	60,107	21,285	37,271	27,857
Noncurrent Assets	2	1	892	1	160,648	532,525
Total Assets	43,639	80,326	268,057	69,637	197,919	560,472
Deferred Outflows of Resources	1,733	-0-	1,829	-0-	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 45,372	$ 80,326	$ 269,886	$ 69,637	$ 197,919	$ 560,472
Liabilities						
Long-Term Debt - net	$ -0-	$ -0-	$ 113,152	$ -0-	$ 163,485	$ 556,794
Current Liabilities	3,441	5,515	36,819	5,190	24,288	10,876
Noncurrent Liabilities	8,633	-0-	-0-	-0-	-0-	121
Total Liabilities	12,074	5,515	149,971	5,190	187,773	567,791
Net Position	33,298	74,811	119,915	64,447	10,146	(7,319)
Total Liabilities and Net Position	$ 45,372	$ 80,326	$ 269,886	$ 69,637	$ 197,919	$ 560,472

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2020
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Operating Revenues	$ 16,599	$ 35,932	$ 141,874	$ 26,818	$ 25,935	$ 20,053
Operating Expenses	22,073	39,624	137,415	32,545	17,810	3,366
Operating Income (Loss)	(5,474)	(3,692)	4,459	(5,727)	8,125	16,687
Non-Operating Revenues and Expenses						
Other Revenues	48	205	179	113	533	-0-
Interest Charges and Other	-0-	-0-	(3,670)	-0-	(8,205)	(16,197)
Change in Net Position Before Distributions and Contributions	(5,426)	(3,487)	968	(5,614)	453	490
Distribution to Member	-0-	-0-	-0-	-0-	(507)	(1,090)
Member Contributions and Adjustments	-0-	-0-	-0-	-0-	86	127
Change in Net Position	(5,426)	(3,487)	968	(5,614)	32	(473)
Net Position – Beginning of Year	38,724	78,298	118,947	70,061	10,114	(6,846)
Net Position – End of Year	$ 33,298	$ 74,811	$ 119,915	$ 64,447	$ 10,146	$ (7,319)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2020
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 1,232	$ 4,462	$ 19,673	$ 1,929	$ 26,597	$ 20,053
Net Cash Used in Noncapital Financing Activities	-0-	-0-	-0-	-0-	(25,550)	(22,843)
Net Cash Used in Capital Financing Activities	(500)	(54)	(16,683)	(748)	-0-	-0-
Net Cash Provided by Investing Activities	46	242	226	138	450	2,714
Net Increase in Cash and Cash Equivalents	778	4,650	3,216	1,319	1,497	(76)
Cash and Cash Equivalents at the Beginning of the Year	4,311	16,003	20,650	9,586	13,315	10,953
Cash and Cash Equivalents at the End of the Year	$ 5,089	$ 20,653	$ 23,866	$ 10,905	$ 14,812	$ 10,877

The summarized activity of SMUD's component units for 2019 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2019
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Assets						
Electric Utility Plant - net	$ 37,248	$ 56,309	$ 220,676	$ 55,074	$ -0-	$ -0-
Restricted Assets	-0-	-0-	-0-	-0-	-0-	2,840
Current Assets	11,418	26,939	54,906	20,487	33,422	27,096
Noncurrent Assets	2	2	998	2	180,564	535,991
Total Assets	48,668	83,250	276,580	75,563	213,986	565,927
Deferred Outflows of Resources	1,955	-0-	2,195	-0-	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 50,623	$ 83,250	$ 278,775	$ 75,563	$ 213,986	$ 565,927
Liabilities						
Long-Term Debt - net	$ -0-	$ -0-	$ 126,571	$ -0-	$ 181,935	$ 561,820
Current Liabilities	3,370	4,952	33,257	5,502	21,937	10,876
Noncurrent Liabilities	8,529	-0-	-0-	-0-	-0-	77
Total Liabilities	11,899	4,952	159,828	5,502	203,872	572,773
Net Position	38,724	78,298	118,947	70,061	10,114	(6,846)
Total Liabilities and Net Position	$ 50,623	$ 83,250	$ 278,775	$ 75,563	$ 213,986	$ 565,927

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2019
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Operating Revenues	$ 23,858	$ 36,208	$ 157,200	$ 27,732	$ 33,472	$ 16,438
Operating Expenses	26,046	33,947	120,562	31,106	25,133	2,682
Operating Income (Loss)	(2,188)	2,261	36,638	(3,374)	8,339	13,756
Non-Operating Revenues and Expenses						
Other Revenues	114	363	376	142	850	-0-
Interest Charges and Other	(534)	(1,211)	(3,962)	-0-	(9,280)	(16,091)
Change in Net Position Before Distributions and Contributions	(2,608)	1,413	33,052	(3,232)	(91)	(2,335)
Distribution to Member	-0-	-0-	-0-	-0-	(953)	-0-
Member Contributions and Adjustments	-0-	7,902	-0-	-0-	80	88
Change in Net Position	(2,608)	9,315	33,052	(3,232)	(964)	(2,247)
Net Position – Beginning of Year	41,332	68,983	85,895	73,293	11,078	(4,599)
Net Position – End of Year	$ 38,724	$ 78,298	$ 118,947	$ 70,061	$ 10,114	$ (6,846)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2019
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 6,382	$ 10,855	$ 42,686	$ 3,295	$ 35,948	$ 13,135
Net Cash Provided by (Used in) Noncapital Financing Activities	-0-	7,902	-0-	-0-	(45,135)	(11,601)
Net Cash Used in Capital Financing Activities	(11,345)	(20,698)	(46,462)	(2,774)	-0-	-0-
Net Cash Provided by Investing Activities	135	351	389	134	787	8,656
Net Increase (Decrease) in Cash and Cash Equivalents	(4,828)	(1,590)	(3,387)	655	(8,400)	10,190
Cash and Cash Equivalents at the Beginning of the Year	9,139	17,593	24,037	8,931	21,715	763
Cash and Cash Equivalents at the End of the Year	$ 4,311	$ 16,003	$ 20,650	$ 9,586	$ 13,315	$ 10,953

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 CVFA's, SCA's, SFA's, SPA'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 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, 2020 and 2019, $12.2 million and $5.5 million in deposits were uninsured, respectively. The bank balance is also, per a depository pledge agreement between SMUD and SMUD's bank, collateralized at 134 percent and 131 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, 2020 and 2019, respectively. SMUD had money market funds of $128.4 million and $103.4 million which were uninsured at December 31, 2020 and 2019, 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 and federal agency securities.

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

	December 31,	
	2020	2019
Investment Type:		
Federal Home Loan Banks	17%	27%
Freddie Mac	7%	12%
Commercial Paper – Toyota Motor Credit Corp	N/A	10%
Municipal Bond – CA Department of Water Resources	10%	6%
Municipal Bond – State of Florida	9%	N/A
Municipal Bond – State of California	4%	6%
Corporate Note – Tennessee Valley Authority	7%	5%
Corporate Note – Wells Fargo Bank	7%	5%
Corporate Note – Microsoft Corporation	9%	3%
Corporate Note – Apple Inc	11%	9%

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, 2020 and 2019. 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, 2020, 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	$ 8,607	$ -0-	$ -0-	$ 8,607
LAIF	Not Rated	512,682	-0-	-0-	512,682
Money Market Funds	AAAm	128,406	-0-	-0-	128,406
Deposit at Notice	N/A	80,062	-0-	-0-	80,062
Commercial Paper	A-1+/A-1	8,854	-0-	-0-	8,854
Total cash and cash equivalents		738,611	-0-	-0-	738,611
Investments:					
Federal Farm Credit Bank	AA+	15,188	-0-	-0-	15,188
Federal Home Loan Bank	AA+	49,986	-0-	-0-	49,986
Freddie Mac	AA+	-0-	20,462	-0-	20,462
U.S. Treasury Obligations	AAA	20,248	-0-	-0-	20,248
Corporate Notes	AAA/AA+/A+/A-/A	113,980	4,035	-0-	118,015
Municipal Bonds	AAA/AA+/AA-	-0-	63,647	-0-	63,647
Guaranteed Investment Contracts	BBB+	10,859	90	-0-	10,949
Total investments		210,261	88,234	-0-	298,495
Total cash, cash equivalents, and investments		$ 948,872	$ 88,234	$ -0-	$ 1,037,106

At December 31, 2019, SMUD's cash, cash equivalents, and investments consist of the following:

Description	Credit Rating	Remaining Maturities (in years) Less Than 1	1-5	More Than 5	Total Fair Value
			(thousands of dollars)		
Cash and Cash Equivalents:					
Cash	N/A	$ 1,093	$ -0-	$ -0-	$ 1,093
LAIF	Not Rated	104,742	-0-	-0-	104,742
Money Market Funds	AAAm	103,367	-0-	-0-	103,367
Deposit at Notice	N/A	51,432	-0-	-0-	51,432
Commercial Paper	A-1+/A-1	47,474	-0-	-0-	47,474
Total cash and cash equivalents		308,108	-0-	-0-	308,108
Investments:					
Fannie Mae	AA+	3,030	-0-	-0-	3,030
Federal Farm Credit Bank	AA+	-0-	15,001	-0-	15,001
Federal Home Loan Bank	AA+	111,844	-0-	-0-	111,844
Freddie Mac	AA+	27,984	20,308	-0-	48,292
U.S. Treasury Obligations	AAA	105,116	20,167	-0-	125,283
Corporate Notes	AAA/AA+/AA-/A+/A	6,302	114,897	-0-	121,199
Municipal Bonds	AA/AA-	15,063	33,013	-0-	48,076
Guaranteed Investment Contracts	BBB+	10,249	2,840	-0-	13,089
Total investments		279,588	206,226	-0-	485,814
Total cash, cash equivalents, and investments		$ 587,696	$ 206,226	$ -0-	$ 793,922

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

	December 31, 2020	2019
	(thousands of dollars)	
Cash, Cash Equivalents, and Investments:		
Revenue bond reserve and debt service funds:		
Revenue bond reserve fund	$ 3,813	$ 4,748
Debt service fund	80,022	73,250
Component unit bond reserve and debt service funds	38,010	38,529
Total revenue bond reserve and debt service funds	121,845	116,527
Nuclear decommissioning trust fund	8,873	8,798
Rate stabilization fund	168,726	143,669
Component unit other restricted funds	7,413	8,707
Escrow fund	15,179	20,592
Other restricted funds	654	654
Unrestricted funds	714,416	494,975
Total cash, cash equivalents, and investments	$ 1,037,106	$ 793,922

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 2020 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 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 liability. The regulatory asset will be amortized over a period of 25 years starting in 2020. SMUD's total regulatory costs for future recovery are presented below:

	December 31,	
	2020	2019
	(thousands of dollars)	
Regulatory Costs:		
Decommissioning	$ 88,652	$ 81,076
Derivative financial instruments	9,270	10,517
Debt issuance costs	1,673	1,882
Pension	374,599	391,626
OPEB	306,556	319,329
Total regulatory costs	780,750	804,430
Less: regulatory costs to be recovered within one year	(38,162)	(37,622)
Total regulatory costs for future recovery - net	$ 742,588	$ 766,808

Regulatory Credits

CIAC. In 2020 and 2019, SMUD added CIAC totaling $25.1 million and $18.8 million, respectively, to Regulatory Credits in the Statements of Net Position and recorded $13.3 million and $12.8 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 transferred into this fund

(which reduces revenues), or amounts are transferred out of this fund (which increases revenues). The Board authorizes Rate Stabilization Fund (RSF) transfers on an event driven basis.

In 2020 and 2019, $1.6 million and $10.7 million, respectively, was transferred from revenue to the RSF as a result of higher 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 2020, the Board authorized transferring the difference out of the RSF and $4.1 million was transferred from the RSF to revenue. In 2019, the Board authorized transferring the difference into the RSF and $15.6 million was transferred 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 2020 and 2019, the Board authorized transferring the difference into the RSF and $0.3 million and $2.3 million, respectively, was transferred from revenue to the RSF.

In 2020, the Board authorized SMUD to transfer $35.0 million from revenue to the RSF to offset future one-time specific expenses which may have a significant financial impact on SMUD. This will provide reserves to cover large contingencies while limiting or leveling out the impact of cost increases to ratepayers.

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 2020, $7.7 million was transferred from the HRSF to revenue as a result of low precipitation. In 2019, $18.4 million was transferred from revenue to the HRSF as a result of high precipitation.

Energy Assistance Program Rate (EAPR). In 2016, the Board authorized SMUD to transfer $10.0 million of revenue to a regulatory credit related to EAPR. This regulatory credit is intended to offset future expenditures for energy efficiency programs for EAPR customers from the period 2018-2020. In 2020 and 2019, $3.5 million and $3.0 million was spent on energy efficiency programs for EAPR customers, respectively.

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 2020 and 2019, $2.3 million and $2.8 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,	
	2020	2019
	(thousands of dollars)	
Regulatory Credits:		
CIAC	$278,791	$ 267,041
Rate stabilization	94,006	61,231
Hydro rate stabilization	74,720	82,438
EAPR	-0-	3,501
Senate Bill 1	4,254	6,529
Grant revenues	36,068	39,888
TANC operations costs	28,370	28,858
Total regulatory credits	$ 516,209	$ 489,486

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).

During 2020 and 2019, 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.

For electricity and gas derivative instruments, fair values are estimated by comparing contract prices to forward market prices quoted by an independent external pricing service. When external quoted market prices are not available for derivative instrument contracts, SMUD uses an internally developed valuation model utilizing short term observable inputs. For interest rate derivative instruments, SMUD calculates the fair value by discounting the expected cash flows at their corresponding zero coupon rate.

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, 2020 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2020 Changes in Fair Value		Fair Value at December 31, 2020		
	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	$ (69)	$ 33	$ -0-	$ 33	305 Dth
Gas – Storage	(141)	-0-	-0-	-0-	
Gas – Transportation	(278)	-0-	-0-	-0-	
Total Investment Derivative Instruments	$ (488)	$ 33	$ -0-	$ 33	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ (189)	$ 2,311	$ 1,329	$ 2,325	39,730 Dth
Gas – Storage	(90)	-0-	301	-0-	900 Dth
Gas – Transportation	(3,836)	-0-	1,490	-0-	11,958 Dth
Interest Rate	295	(1,692)	1,793	6,281	$280,320
Total Hedging Derivative Instruments	$ (3,820)	$ 619	$ 4,913	$ 8,606	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ 1,164	$ 1,402	$ 9	$ 263	1,675 Dth
Gas – Storage	191	-0-	-0-	-0-	
Gas – Transportation	93	-0-	-0-	-0-	
Interest Rate	(614)	(536)	1,392	7,640	$80,100
Total Investment Derivative Instruments	$ 834	$ 866	$ 1,401	$ 7,903	
Liability: Hedging Derivative Instruments					
Gas – Commodity	$ 20,193	$ 23,002	$ 20,666	$ 18,698	47,778 Dth
Gas – Storage	(583)	-0-	1,097	-0-	1,210 Dth
Gas – Transportation	-0-	-0-	-0-	-0-	
Interest Rate	(521)	(8,478)	521	10,598	$284,815
Total Hedging Derivative Instruments	$ 19,089	$ 14,524	$ 22,284	$ 29,296	

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, 2019 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2019 Changes in Fair Value		Fair Value at December 31, 2019		
	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	$ 49	$ -0-	$ 69	$ -0-	150 Dth
Gas – Storage	141	-0-	141	-0-	295 Dth
Gas – Transportation	278	-0-	278	-0-	310 Dth
Total Investment Derivative Instruments	$ 468	$ -0-	$ 488	$ -0-	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ 1,055	$ 13	$ 1,517	$ 13	2,835 Dth
Gas – Storage	154	-0-	391	-0-	687 Dth
Gas – Transportation	2,729	-0-	5,326	-0-	14,320 Dth
Interest Rate	270	(2,507)	1,498	7,973	$215,500
Total Hedging Derivative Instruments	$ 4,208	$ (2,494)	$ 8,732	$ 7,986	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ 195	$ 6,938	$ 1,173	$ 1,665	2,433 Dth
Gas – Storage	(191)	-0-	191	-0-	295 Dth
Gas – Transportation	(93)	-0-	93	-0-	310 Dth
Interest Rate	(403)	(379)	778	7,104	$85,625
Total Investment Derivative Instruments	$ (492)	$ 6,559	$ 2,235	$ 8,769	
Liability: Hedging Derivative Instruments					
Gas – Basis	$ 3,651	$ -0-	$ -0-	$ -0-	
Gas – Commodity	(15,857)	14,984	40,859	41,700	61,957 Dth
Gas – Storage	(124)	-0-	515	-0-	688 Dth
Gas – Transportation	41	-0-	-0-	-0-	
Interest Rate	-0-	(2,120)	-0-	2,120	$157,785
Total Hedging Derivative Instruments	$ (12,289)	$ 12,864	$ 41,374	$ 43,820	

Objectives and Terms of Hedging Derivative Instruments. The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2020 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	89,565	01/01/08	12/31/24	$ .89	$ 7.17
Gas – Storage	2,110	01/01/21	03/31/21	.26	3.13
Gas – Transportation	11,958	01/01/21	12/31/21	(0.82)	.43

The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2019 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	67,375	01/01/08	12/31/22	$ .43	$ 7.17
Gas – Storage	1,965	01/01/20	10/31/20	.24	3.02
Gas – Transportation	14,940	01/01/20	12/31/20	(1.51)	.69

SMUD hedges its interest rate exposure with swaps. One swap is used to convert some of the interest expense associated with fixed rate bonds to a variable rate interest expense. SMUD has four 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 2011 Series X, 2012 Series Y, 2013 Series A and 2013 Series B bonds in 2021, 2022 and 2023, respectively (see Note 10). SMUD also has a swap that is designed to fix the interest expense associated with commercial paper (see Note 11).

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, 2020.

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, 2020 and 2019 are shown in the table below. The credit ratings listed are from S&P or Moody's.

	December 31, 2020	December 31, 2019
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	A3
Mitsui Bussan	A	N/A
Morgan Stanley Capital Group, Inc.	A+	BBB+
Nextera	A-	N/A
Royal Bank of Canada	AA-	N/A
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, 2020	December 31, 2019
	(thousands of dollars)	
Electric revenue bonds, 2.0%-6.32%, 2021-2050	$ 2,085,120	$ 1,778,040
Subordinated electric revenue bonds, 5.0%, 2021-2049	200,000	200,000
Total electric revenue bonds	2,285,120	1,978,040
Component unit project revenue bonds, 5.0%, 2021-2030	112,085	120,795
Gas and Commodity supply revenue bonds, index rates and 4.0%-5.0%, 2021-2049	721,550	738,225
Total long-term debt outstanding	3,118,755	2,837,060
Bond premiums - net	267,947	225,040
Total long-term debt	3,386,702	3,062,100
Less: amounts due within one year	(127,390)	(118,305)
Total long-term debt - net	$ 3,259,312	$ 2,943,795

The summarized activity of SMUD's long-term debt during 2020 is presented below:

	January 1, 2020	Additions	Defeasance Payments or Amortization	December 31, 2020	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 1,778,040	$ 400,000	$ (92,920)	$ 2,085,120	$ 98,040
Subordinate electric revenue bonds	200,000	-0-	-0-	200,000	-0-
Component unit project revenue bonds	120,795	-0-	(8,710)	112,085	10,900
Gas and Commodity supply revenue bonds	738,225	-0-	(16,675)	721,550	18,450
Total	2,837,060	400,000	(118,305)	3,118,755	$ 127,390
Unamortized premiums - net	225,040	83,457	(40,550)	267,947	
Total long-term debt	$ 3,062,100	$ 483,457	$ (158,855)	$ 3,386,702	

The summarized activity of SMUD's long-term debt during 2019 is presented below:

	January 1, 2019	Additions	Defeasance Payments or Amortization	December 31, 2019	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 1,673,590	$ 191,875	$ (87,425)	$ 1,778,040	$ 92,920
Subordinate electric revenue bonds	-0-	200,000	-0-	200,000	-0-
Component unit project revenue bonds	162,055	-0-	(41,260)	120,795	8,710
Gas and Commodity supply revenue bonds	772,785	-0-	(34,560)	738,225	16,675
Total	2,608,430	391,875	(163,245)	2,837,060	$ 118,305
Unamortized premiums - net	175,187	83,748	(33,895)	225,040	
Total long-term debt	$ 2,783,617	$ 475,623	$ (197,140)	$ 3,062,100	

At December 31, 2020 scheduled annual principal maturities and interest are as follows:

	Principal	Interest	Total
		(thousands of dollars)	
2021	$ 127,390	$ 152,881	$ 280,271
2022	135,115	146,723	281,838
2023	143,515	140,929	284,444
2024	143,310	130,519	273,829
2025	155,900	124,813	280,713
2026 – 2030 (combined)	677,550	498,136	1,175,686
2031 – 2035 (combined)	559,375	342,033	901,408
2036 – 2040 (combined)	466,645	198,044	664,689
2041 – 2045 (combined)	379,530	107,541	487,071
2046 – 2050 (combined)	330,425	36,830	367,255
Total requirements	$ 3,118,755	$ 1,878,449	$ 4,997,204

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, 2020 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, 2020:

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% - 5.9%	$ 131,030	$ 72,620
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
10/04/2011	2011 Series X Bonds	08/15/2028	1.5% - 5.0%	325,550	156,770
05/31/2012	2012 Series Y Bonds	08/15/2033	3.0% - 5.0%	196,945	169,530
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	84,905
07/14/2016	2016 Series D Bonds	08/15/2028	2.0% - 5.0%	149,890	133,360
12/14/2017	2017 Series E Bonds	08/15/2028	5.0%	202,500	152,560
07/12/2018	2018 Series F Bonds	08/15/2028	5.0%	165,515	141,480
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
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	2.0% - 5.0%	193,335	112,085
05/31/2007	2007B NCGA#1 Bonds	07/01/2027	Index Rate	668,470	181,935
12/19/2018	2018 NCEA Bonds	07/01/2049	4.0% - 5.0%	539,615	539,615

2020 Bond Issuances. In May 2020, SMUD issued $400.0 million of 2020 Series H Revenue Bonds. The 2020 Series H Bonds have a fixed coupon rate of 4.0 percent to 5.0 percent and amortize from 2029 to 2050. Proceeds from the 2020 Series H Bonds were used to refund all outstanding commercial paper and reimburse SMUD for capital projects in 2018, 2019 and through February 2020.

2019 Bond Issuances. In July 2019, SMUD issued $191.9 million of 2019 Series G Revenue Bonds, $100.0 million of 2019 Series A Subordinated Revenue Bonds, and $100.0 million of 2019 Series B Subordinated Revenue Bonds. The 2019 Series G Bonds have a fixed coupon rate of 2.375 percent to 5.0 percent and amortize from 2029 to 2041. The 2019 Series A Bonds have a fixed interest coupon rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2023. The 2019 Series B Bonds have a fixed coupon interest rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2025. Proceeds from 2019 Series G Bonds, the 2019 Series A Bonds and the 2019 Series B Bonds were used to refund outstanding commercial paper.

Component Unit Bond Defeasances. In September 2019, CVFA defeased $5.4 million of 2009 Series Bonds maturing on July 2020, along with the accrued interest using CVFA's available funds. The corresponding amount was placed in an irrevocable trust which had a balance of $5.6 million at December 31, 2019. In addition, 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 has a remaining balance of $6.9 million and $13.7 million as of December 31, 2020 and 2019, respectively. The defeasances resulted in an accounting loss of $0.8 million which is included in Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position.

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 six interest rate swap agreements as of December 31, 2020 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
$ 72,620	Variable	5.166%	SIFMA	07/01/24	BBB+
80,100	Fixed	2.894%	63% of 1 M LIBOR	08/15/28	A+
127,030	Fixed	1.099%	67% of 1M LIBOR	08/15/28	BBB+
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

A summary of SMUD's four interest rate swap agreements as of December 31, 2019 are as follows:

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 88,470	Variable	5.166%	SIFMA	07/01/24	BBB+
85,625	Fixed	2.894%	63% of 1M LIBOR	08/15/28	A+
127,030	Fixed	1.099%	67% of 1M LIBOR	08/15/28	BBB+
157,785	Fixed	1.607%	SIFMA	08/15/33	A+

At December 31, 2020 and 2019, SMUD had a fixed-to-variable interest rate swap agreement with a notional amount of $72.6 million and $88.5 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 (.09 percent and 1.61 percent at December 31, 2020 and 2019, respectively) and receives fixed rate payments of 5.166 percent as of December 31, 2020 and 2019. In connection with the swap agreement, SMUD has a put option agreement, also with a notional amount of $72.6 million and $88.5 million as of December 31, 2020 and 2019, 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 and 0.162 percent as of December 31, 2020 and 2019, respectively, 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, 2020 and 2019, SMUD had one variable-to-fixed interest rate swap agreement with a notional amount of $80.1 million and $85.6 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 becomes effective in July 2021. 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 becomes effective in July 2022. 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. Additionally, on August 15, 2026 and for the remaining life of the Morgan Stanley Capital Services swap associated with 2012 Series Y Bonds, the swap can be terminated at no cost to SMUD. 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.

Component Unit Interest Rate Swap Agreements. NCGA had one interest rate swap agreement as of December 31, 2020, 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
$ 181,935	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

NCGA had one interest rate swap agreement as of December 31, 2019, which are summarized as follows:

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 198,610	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

At December 31, 2020 and 2019, 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 (0.23 percent and 1.91 percent at December 31, 2020 and 2019, respectively) plus an interest rate spread, as specified in the swap agreement. The total notional amount of the swap at December 31, 2020 and 2019 was $181.9 million and $198.6 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, all of which are fixed rate Build America Bonds debt. SMUD also has $492.5 million of bonds that become callable from 2021 through 2026, 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 2020. 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, 2020.

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,	
	2020	2019
	(thousands of dollars)	
Pledged future revenues	$ 3,118,755	$ 2,837,060
Principal and interest payments for the year ended	$ 262,291	$ 265,930
Total net revenues for the year ended	$ 632,572	$ 586,514
Total remaining principal and interest to be paid	$ 4,997,204	$ 4,469,891
Annual principal and interest payments as a percent of net revenues for the year ended	41%	45%

NOTE 11. COMMERCIAL PAPER NOTES

SMUD issues Commercial Paper Notes (Notes) to finance or reimburse capital expenditures. In February 2019, SMUD expanded its commercial paper program from $288.8 million to $400.0 million. At December 31, 2020, there were no Notes outstanding. At December 31, 2019, Notes outstanding totaled $50.0 million. The average interest rate for the Notes outstanding at December 31, 2019 was 1.02 percent and the average term was 90 days. SMUD's commercial paper program is backed by $409.9 million in letter of credit agreements (LOCs) 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. The LOCs contain a provision that in an event of default, the outstanding amounts may become immediately due.

The summarized activity of SMUD's Notes during 2020 and 2019 is presented below:

	Balance at Beginning of Year	Additions	Reductions	Balance at End of Year
	(thousands of dollars)			
December 31, 2020	$ 50,000	$ -0-	$ (50,000)	$ -0-
December 31, 2019	$ 288,750	$ 161,250	$ (400,000)	$ 50,000

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 Derivative Instruments:
  - 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. 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.

- 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 calculated based on prevailing market quotes in active markets (i.e. Henry Hub and So Cal) where identical contracts are available.

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, 2020 and 2019, 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, 2020		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 512,682	$ 512,682
U.S. Government Agency Obligations	-0-	85,636	85,636
U.S. Treasury Obligations	20,248	-0-	20,248
Corporate Notes	-0-	118,015	118,015
Municipal Bonds	-0-	63,647	63,647
Total Investments, including cash and cash equivalents	$ 20,248	$ 779,980	$ 800,228
Investment Derivative Instrument Assets:			
Gas related agreements	$ 33	$ -0-	$ 33
Total Investment Derivative Instrument Assets	$ 33	$ -0-	$ 33
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 5,445	$ -0-	$ 5,445
Interest rate swap agreements	-0-	8,074	8,074
Total Hedging Derivative Instrument Assets	$ 5,445	$ 8,074	$ 13,519
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 272	$ -0-	$ 272
Interest rate swap agreements	-0-	9,032	9,032
Total Investment Derivative Instrument Liabilities	$ 272	$ 9,032	$ 9,304
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 40,461	$ -0-	$ 40,461
Interest rate swap agreements	-0-	11,119	11,119
Total Hedging Derivative Instrument Liabilities	$ 40,461	$ 11,119	$ 51,580

Recurring Fair Value Measures	At fair value as of December 31, 2019		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 104,742	$ 104,742
U.S. Government Agency Obligations	-0-	178,167	178,167
U.S. Treasury Obligations	125,283	-0-	125,283
Corporate Notes	-0-	121,199	121,199
Municipal Bonds	-0-	48,076	48,076
Total Investments, including cash and cash equivalents	$ 125,283	$ 452,184	$ 577,467
Investment Derivative Instrument Assets:			
Gas related agreements	$ 488	$ -0-	$ 488
Total Investment Derivative Instrument Assets	$ 488	$ -0-	$ 488
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 7,247	$ -0-	$ 7,247
Interest rate swap agreements	-0-	9,471	9,471
Total Hedging Derivative Instrument Assets	$ 7,247	$ 9,471	$ 16,718
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 3,122	$ -0-	$ 3,122
Interest rate swap agreements	-0-	7,882	7,882
Total Investment Derivative Instrument Liabilities	$ 3,122	$ 7,882	$ 11,004
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 83,074	$ -0-	$ 83,074
Interest rate swap agreements	-0-	2,120	2,120
Total Hedging Derivative Instrument Liabilities	$ 83,074	$ 2,120	$ 85,194

NOTE 13. ACCRUED DECOMMISSIONING LIABILITY

Asset Retirement Obligations (ARO). SMUD implemented GASB No. 83 in 2019. 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. These applications are 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. 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 2020. 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, 2020 is $8.9 million.

CVFA Power Plant. CVFA's ground lease agreement with the Sacramento Regional County Sanitation District requires CVFA 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. CVFA used the annual All Urban Consumer Price Index to adjust this obligation for inflation in 2020. The remaining useful life of the Agency's assets is five years at December 31, 2020.

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, 2020 and 2019, SMUD's Accrued Decommissioning balance in the Statements of Net Position was $99.5 million and $91.7 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, 2019 and June 30, 2018.

During 2019, SMUD also provided a supplemental benefit in lieu of PERS' Single Highest Year (SHY) for certain represented employees hired before January 1, 2013. For these employees, if the present value of pension allowance under the PERS Plan with the employer paid member contributions (EPMC) benefit enhancement program is less than the present value of what the employee would have received under the PERS Plan benefit with SHY earnings but no EPMC, SMUD pays a lump sum equivalent to the difference. There are no assets accumulated in a trust for SHY. At December 31, 2020 SMUD no longer had an obligation to provide the supplemental benefit in lieu of PERS' SHY.

GASB No. 68 and GASB No. 73 require 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,	
	2020	2019
Valuation date	June 30, 2019	June 30, 2018
Measurement date	June 30, 2020	June 30, 2019

SHY	December 31,	
	2020	2019
Valuation date and Measurement date	N/A	June 30, 2019

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms for the year ended:

PERS Plan	December 31,	
	2020	2019
Inactive employees or beneficiaries currently receiving benefit payments	3,003	2,936
Inactive employees entitled to but not yet receiving benefit payments	979	946
Active employees	2,265	2,260
Total employees covered by benefit terms	6,247	6,142

SHY	December 31,	
	2020	2019
Inactive employees or beneficiaries currently receiving benefit payments	-0-	-0-
Inactive employees entitled to but not yet receiving benefit payments	-0-	-0-
Active employees	-0-	215
Total employees covered by benefit terms	-0-	215

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, 2020 and 2019, the average active employee contribution rate is 6.6 percent and 6.7 percent of annual pay, respectively. For the PERS fiscal year ended June 30, 2020, the employer's contribution rate is 8.7 percent of annual payroll plus $31.1 million for the unfunded accrued liability contribution. For the PERS fiscal year ended June 30, 2019, the employer's contribution rate is 8.2 percent of annual payroll plus $29.4 million for the unfunded accrued liability contribution. Employer contribution rates may change if plan contracts are amended. For the fiscal years ended June 30, 2020 and 2019, SMUD made contributions recognized by the PERS Plan in the amount of $98.3 million and $69.1 million, respectively.

Net Pension Liability (NPL). SMUD's NPL at December 31, 2020 and 2019 was measured at June 30, 2020 and 2019, respectively. The total pension liability used to calculate the NPL was determined by actuarial valuations as of June 30, 2019 and 2018 rolled forward using generally accepted actuarial procedures to the June 30, 2020 and 2019 measurement dates for the PERS Plan and actuarial valuations as of June 30, 2019 for SHY.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2020 and December 31, 2019 total pension liabilities are as follows for the PERS Plan:

Actuarial Cost Method	Entry age normal
Discount Rate	7.15%
Inflation	2.5%
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 2020 and 2019, the lesser of contract COLA or 2.5% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.5% thereafter

The actuarial methods and assumptions used for the December 31, 2019 total pension liabilities are as follows for SHY:

Actuarial Cost Method	Entry age normal
Discount Rate	Bond Buyer 20 Index - 3.50% (2019)
Inflation	2.5% (2019)
Salary Increases	Aggregate – 2.75% (2019); merit - PERS 1997-2015 Experience Study
Mortality, Retirement, Disability, Termination	PERS 1997-2015 Experience Study
Mortality Improvement	Mortality projected 15 years with 90% of Scale MP-2016

Discount Rates. For the PERS Plan, the discount rate used to measure the total pension liability for the years ended December 31, 2020 and 2019 was 7.15 percent for both years. For the year ended December 31, 2020, 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 short-term (first 10 years) and the long-term (11-60 years) using a building-block approach.

The expected real rates of return by asset class used for December 31, 2020 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%)

The expected real rates of return by asset class used for December 31, 2019 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 NPL. The following table shows the changes in NPL recognized over the year ended December 31, 2020:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2020	$ 2,332,097	$ 1,864,450	$ 467,647
Changes recognized for the measurement period:			
Service cost	38,901	-0-	38,901
Interest	164,044	-0-	164,044
Changes in assumptions	-0-	-0-	-0-
Differences between expected and actual experience	9,981	-0-	9,981
Contributions - employer	-0-	98,344	(98,344)
Contributions - employee	-0-	18,095	(18,095)
Net investment income	-0-	92,534	(92,534)
Benefit payments	(125,581)	(125,581)	-0-
Administrative expense	-0-	(2,628)	2,628
Other – GASB 73 pension liability write off	(4,408)	-0-	(4,408)
Net changes	82,937	80,764	2,173
Balances at December 31, 2020	$ 2,415,034	$ 1,945,214	$ 469,820

The following table shows the changes in NPL recognized over the year ended December 31, 2019:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2019	$ 2,234,911	$ 1,780,867	$ 454,044
Changes recognized for the measurement period:			
Service cost	38,264	-0-	38,264
Interest	158,160	-0-	158,160
Changes in assumptions	(194)	-0-	(194)
Differences between expected and actual experience	18,561	-0-	18,561
Contributions - employer	-0-	69,119	(69,119)
Contributions - employee	-0-	17,411	(17,411)
Net investment income	-0-	115,867	(115,867)
Benefit payments	(117,605)	(117,548)	(57)
Administrative expense	-0-	(1,270)	1,270
Other	-0-	4	(4)
Net changes	97,186	83,583	13,603
Balances at December 31, 2019	$ 2,332,097	$ 1,864,450	$ 467,647

Sensitivity of the NPL to Changes in the Discount Rate. The following presents the NPL of the Plan as of the measurement date, calculated using the current discount rate, as well as what the net pension liability 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 (6.15%)	Current Discount Rate (7.15%)	1% Increase (8.15%)
		(thousands of dollars)	
Plan's NPL, December 31, 2020	$ 777,072	$ 469,820	$ 214,331
Plan's NPL, December 31, 2019	761,785	463,239	215,186

SHY	1% Decrease (2.50%)	Current Discount Rate (3.50%)	1% Increase (4.50%)
		(thousands of dollars)	
Plan's NPL, December 31, 2019	$ 5,375	$ 4,408	$ 3,642

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 and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions. For the years ended December 31, 2020 and 2019, SMUD recognized pension expense of $79.7 million and $91.8 million, respectively.

At December 31, 2020 and 2019, SMUD reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	December 31, 2020	2019
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	$ -0-	$ 23,961
Differences between expected and actual experience	17,222	14,788
Differences between projected and actual earnings on pension plan investments	16,985	-0-
Employer's contributions to the Plan subsequent to the measurement of total pension liability	142,133	67,119
Total deferred outflows of resources	$ 176,340	$ 105,868
Deferred inflows of resources:		
Changes of assumptions	$ 14,212	$ 30,825
Differences between expected and actual experience	-0-	7,239
Differences between projected and actual earnings on pension plan investments	-0-	7,932
Total deferred inflows of resources	$ 14,212	$ 45,996

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended December 31:	
2021	$ (13,622)
2022	13,040
2023	12,545
2024	8,032
2025	-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 $5.8 million in 2020 and $5.4 million in 2019. 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 $28.8 million in 2020 and $24.8 million in 2019.

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,	
	2020	2019
Inactive employees or beneficiaries currently receiving benefit payments	2,286	2,244
Inactive employees entitled to but not yet receiving benefit payments	46	44
Active employees	2,136	2,186
Total employees covered by benefit terms	4,468	4,474

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, 2020 and 2019, SMUD made contributions recognized by the OPEB Plan in the amounts of $13.3 million and $14.0 million, respectively.

Net OPEB Asset (NOA) or Liability (NOL). SMUD's NOA at December 31, 2020 and NOL at December 31, 2019 was measured as of June 30, 2020 and 2019, respectively, and the total OPEB liability used to calculate the NOA and NOL was determined by actuarial valuations as of those dates.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2020 and December 31, 2019 total OPEB liabilities are as follows:

Discount Rate	6.37% (2020). Blended discount rate based on projected benefit streams expected to be paid from each Strategy. 6.40% (2019)
Inflation	2.75%
Salary Increases	Aggregate - 3.0%; merit - PERS 1997-2015 Experience Study
Mortality, Retirement, Disability, Termination	PERS 1997-2015 Experience Study
Mortality Improvement	Mortality projected fully generational with Scale MP-19 (2020), MP-18 (2019)
Healthcare Cost Trend Rates	Non-medicare: 7.0% for 2022, decreasing to an ultimate rate of 4.0% in 2076 (2020); 7.25% for 2021, decreasing to an ultimate rate of 4.0% in 2076 (2019) Kaiser Medicare: 5.0% for 2022, decreasing to an ultimate rate of 4.0% in 2076 (2020) Medicare: 6.1% for 2022, decreasing to an ultimate rate of 4.0% in 2076 (2020); 6.3% for 2021, decreasing to an ultimate rate of 4.0% in 2076 (2019)

Discount Rates. For the OPEB Plan, the discount rate used to measure the total OPEB liability was 6.37 percent and 6.40 percent for the years ended December 31, 2020 and 2019, 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 6.75 percent for Strategy 1 and 5.50 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, 2020 and 2019.

The expected real rates of return by asset class used and presented as geometric means for December 31, 2020 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	59%	4.82%
Fixed Income	25%	1.47%
TIPS	5%	1.29%
Commodities	3%	0.84%
REITS	8%	3.76%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	22%	4.82%
Fixed Income	49%	1.47%
TIPS	16%	1.29%
Commodities	5%	0.84%
REITS	8%	3.76%

The expected real rates of return by asset class used and presented as geometric means for December 31, 2019 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	59%	4.82%
Fixed Income	25%	1.47%
TIPS	5%	1.29%
Commodities	3%	0.84%
REITS	8%	3.76%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	22%	4.82%
Fixed Income	49%	1.47%
TIPS	16%	1.29%
Commodities	5%	0.84%
REITS	8%	3.76%

Changes in the NOA/NOL. The following table shows the changes in NOA/NOL recognized over the year ended December 31, 2020:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2020	$ 419,483	$ 387,272	$ 32,211
Changes recognized for the measurement period:			
Service cost	8,903	-0-	8,903
Interest	26,653	-0-	26,653
Changes in assumptions	(11,453)	-0-	(11,453)
Differences between expected and actual experience	(23,529)	-0-	(23,529)
Contributions - employer	-0-	13,299	(13,299)
Net investment income	-0-	20,447	(20,447)
Benefit payments	(23,848)	(23,848)	-0-
Administrative expense	-0-	(191)	191
Net changes	(23,274)	9,707	(32,981)
Balances at December 31, 2020	$ 396,209	$ 396,979	$ (770)

The following table shows the changes in NPL recognized over the year ended December 31, 2019:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2019	$ 399,845	$ 377,779	$ 22,066
Changes recognized for the measurement period:			
Service cost	8,946	-0-	8,946
Interest	26,766	-0-	26,766
Changes in assumptions	15,332	-0-	15,332
Differences between expected and actual experience	(6,885)	-0-	(6,885)
Contributions - employer	-0-	13,963	(13,963)
Net investment income	-0-	20,132	(20,132)
Benefit payments	(24,521)	(24,521)	-0-
Administrative expense	-0-	(81)	81
Net changes	19,638	9,493	10,145
Balances at December 31, 2019	$ 419,483	$ 387,272	$ 32,211

Sensitivity of the NOA/NOL to Changes in the Discount Rate. The following presents the NOA/NOL of SMUD as of the measurement date, calculated using the current discount rate, as well as what the NOA/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 (5.37%)	Current Discount Rate (6.37%)	1% Increase (7.37%)
		(thousands of dollars)	
NOL/(NOA), December 31, 2020	$ 48,397	$ (770)	$ (41,660)

	1% Decrease (5.40%)	Current Discount Rate (6.40%)	1% Increase (7.40%)
		(thousands of dollars)	
NOL/(NOA), December 31, 2019	$ 85,866	$ 32,211	$ (12,249)

Sensitivity of the NOA/NOL to Changes in the Healthcare Cost Trend Rates. The following presents the NOA/NOL of SMUD as of the measurement date, calculated using the current healthcare cost trend rate, as well as what the NOA/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)	
NOL/(NOA), December 31, 2020	$ (45,574)	$ (770)	$ 54,091
NOL/(NOA), December 31, 2019	$ (16,289)	$ 32,211	$ 91,772

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, 2020 and 2019, SMUD recognized OPEB expense of ($3.2) million and ($0.2) million, respectively.

At December 31, 2020 and 2019, SMUD reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	$ 11,448	$ 14,644
Differences between projected and actual earnings on OPEB plan investments	2,741	-0-
Employer's contributions to the OPEB Plan subsequent to the measurement of total OPEB liability	11,947	12,014
Total deferred outflows of resources	$ 26,136	$ 26,658
Deferred inflows of resources:		
Changes of assumptions	$ 9,479	$ -0-
Differences between expected and actual experience	49,375	42,593
Differences between projected and actual earnings on OPEB plan investments	-0-	266
Total deferred inflows of resources	$ 58,854	$ 42,859

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ended December 31:	
2021	$ (15,828)
2022	(14,669)
2023	(5,141)
2024	(4,202)
2025	(4,825)
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 others. SMUD carries commercial insurance coverage to cover most claims in excess of specific dollar thresholds, which range from $5.0 thousand to $2.5 million per claim. General liability limits are $140.0 million, excess of a $5.0 million self-insured retention. As of December 31, 2020, wildfire liability limits are $250.0 million ($173.0 million commercial insurance plus $77.0 million self-insured retention). As of December 31, 2019, SMUD had $186.5 million commercial coverage plus $63.5 million self-insured retention within a $250.0 million total program value (i.e. this year's program has the same commercial coverage protection but a higher self-insured portion due to the continuing decrease in commercial capacity within the wildfire market). SMUD's property insurance coverage is based on the replacement value of the asset. There have been no significant reductions in insurance coverage, and in some cases, certain coverages increased. In 2020, 2019 and 2018, 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.

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, 2020, 2019 and 2018 is presented below:

	2020	2019	2018
		(thousands of dollars)	
Workers' compensation claims	$ 9,166	$ 10,005	$ 10,993
General and auto claims	3,766	3,867	3,523
Short and long-term disability claims	92	201	153
Claims liability	$ 13,024	$ 14,073	$ 14,669

Changes in SMUD's total claims liability during 2020, 2019 and 2018 are presented below:

	2020	2019	2018
		(thousands of dollars)	
Claims liability, beginning of year	$ 14,073	$ 14,669	$ 11,877
Add: provision for claims, current year	1,419	1,789	2,601
(Decrease) increase in provision for claims in prior years	(8)	11,434	10,450
Less: payments on claims attributable to current and prior years	(2,460)	(13,819)	(10,259)
Claims liability, end of year	$ 13,024	$ 14,073	$ 14,669

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, 2020, the approximate minimum obligations for the "take-or-pay" contracts over the next five years are as follows:

	Electric	Gas
	(thousands of dollars)	
2021	$ 99,746	$ 7,841
2022	99,917	7,395
2023	98,651	7,336
2024	33,039	6,592
2025	12,188	6,666

At December 31, 2020, 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)	
2021	$ 216,060	$ 131,197
2022	198,545	110,329
2023	194,677	115,194
2024	157,778	90,224
2025	156,955	66,848

Contractual Commitments beyond 2025 - Electricity. Several of SMUD's purchase power and transmission contracts extend beyond the five-year summary presented above. These contracts expire between 2026 and 2050 and provide for power under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $12.2 million in 2026 and $0.3 million in 2033. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the energy is delivered, ranges between $146.1 million in 2026 and $9.9 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, 2023.

Contractual Commitments beyond 2025 - 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 2026 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 $6.7 million in 2026 and $3.4 million in 2049. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the gas is delivered, ranges between $21.4 million in 2026 and $5.4 million in 2049.

Gas Price Swap Agreements. SMUD has entered into numerous variable to fixed rate swaps with notional amounts totaling 99,702,500 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 $2.22 to $7.17 per Dth. The swap agreements expire periodically from January 2021 through December 2024.

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 58,300 Dth per day (Dth/d) of natural gas pipeline capacity from the North, including the Canadian Basins through 2021 and 41,200 Dth/d from the Southwest or Rocky Mountain Basins through at least 2021.

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 2022, dropping to 1.0 million Dth through March 2023.

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 $64.8 million at December 31, 2020.

Construction Contracts. SMUD has entered into various construction contracts for the construction of a new substation and improvements to the White Rock Powerhouse in the UARP. As of December 31, 2020, the not-to-exceed price for these contracts totaled $90.8 million. The remaining contract obligations for these contracts as of December 31, 2020 was $30.7 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.

Construction Matters. SMUD contracts with various firms to design and construct facilities for SMUD. Currently, SMUD is party to various claims, legal actions and complaints relating to such construction projects. 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.

North City Environmental Remediation. In 1950, SMUD purchased property (North City Site) from the City of Sacramento and the Western Railroad Company. Portions of the North City Site prior to the sale had been operated as a municipal landfill by the City of Sacramento and some of the property continued to be so after the sale. SMUD currently operates a bulk substation on the North City Site and plans to decommission the facility in the next few years. SMUD intends to assure compliance with State standards at closed landfill sites and is in the process of determining the appropriate remediation for the North City Site. In 2009, SMUD established a regulatory asset to defer recognition of the expense related to the investigation, design and remediation necessary for the North City Site, and recorded a liability for the full $12.0 million estimated for the project. In 2012, the regulatory asset was fully amortized. As the owner of the North City Site, SMUD will play the principal role in the remediation selection and activities. SMUD has estimated the total exposure for closing the site at as high as $12.0 million based on initial tests and studies of the site and approved and implemented cap designs for nearby former landfill areas. Costs could exceed that amount based on the need to design around transmission-related infrastructure improvements. SMUD's management does not, however, believe this will occur. Even if remediation costs associated with the North City Site were to increase, SMUD management believes that any increased costs will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Patua Acquisition Company, LLC. On April 16, 2010, SMUD entered into a 23-year PPA with Patua Project, LLC. The fifth amendment to the PPA was signed on November 30, 2016, with the new project owner, Patua Acquisition Company, LLC (Patua). The PPA requires Patua to provide a warranty for the annual amount of energy and green attributes produced and delivered to SMUD, referred to as the Annual Delivery Warranty Amount (ADWA). If Patua fails to meet the ADWA for two consecutive years, it triggers SMUD's right to reduce the Guaranteed Capacity and Transmission Capacity Requirement as defined in the PPA.

On February 16, 2017, SMUD sent Patua a Notice of Failure to Meet Annual Performance Guarantee or the ADWA, Reduction of Phase 1 Guaranteed Capacity Resizing, and Reduction of Transmission Capacity Requirement pursuant to the terms of the PPA. Patua disagreed with the reductions and on June 9, 2017, after meetings with SMUD staff, sent a letter requesting a meeting with a senior officer to work towards a resolution in accordance with the dispute resolution provisions of the PPA. A meeting of the senior officers occurred. Staff continued to work through the issue with Patua to resolve the matter. On January 19, 2021, Patua provided SMUD a written confirmation that it considers the dispute to be resolved and releases and waives any claims against SMUD related to the 2017 ADWA and associated reduction in Guaranteed Capacity and Transmission Capacity. SMUD management does not believe that this 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 19, 2021, the date that the financial statements were available to be issued, for events requiring recording or disclosure in the financial statements.

Required Supplementary Information – Unaudited
For the Years Ended December 31, 2020 and 2019

Schedule of Changes in Net Pension Liability and Related Ratios During the Measurement Period - PERS Plan

	December 31,						
	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)						
Total pension liability:							
Service cost	$ 38,901	$ 38,061	$ 36,029	$ 35,040	$ 29,044	$ 27,991	$ 28,170
Interest	164,044	157,976	151,354	150,119	147,497	142,468	137,546
Changes of assumptions	-0-	-0-	(61,585)	123,043	-0-	(34,228)	-0-
Differences between expected and actual experience	9,981	18,877	1,293	(29,276)	(8,357)	(10,613)	-0-
Benefit payments, including refunds of employee contributions	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Net change in total pension liability	87,345	97,366	15,328	174,498	69,029	30,982	75,541
Total pension liability, beginning of year	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)	$ 2,415,034	$ 2,327,689	$ 2,230,323	$ 2,214,995	$ 2,040,497	$ 1,971,468	$ 1,940,486
Plan fiduciary net position:							
Contributions - employer	$ 98,344	$ 69,119	$ 90,141	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions - employee	18,095	17,411	16,832	15,845	15,271	14,503	15,346
Net investment income	92,534	115,867	138,739	171,596	8,316	35,797	245,659
Benefit payments, including refunds of employee contributions	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Administrative expense	(2,628)	(1,270)	(7,474)	(2,275)	(969)	(1,795)	(2,028)
Other	-0-	4	(4)	-0-	34	(25)	-0-
Net change in plan fiduciary net position	80,764	83,583	126,471	113,127	(48,858)	(23,657)	190,313
Plan fiduciary net position, beginning of year	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)	$ 1,945,214	$ 1,864,450	$ 1,780,867	$ 1,654,396	$ 1,541,269	$ 1,590,127	$ 1,613,784
Net pension liability, ending (a) - (b)	$ 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	80.5%	80.1%	79.8%	74.7%	75.5%	80.7%	83.2%
Covered payroll	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Net pension liability as a percentage of covered payroll	184.4%	187.0%	190.5%	250.6%	241.0%	193.1%	170.7%

PERS Plan. The schedule of changes in NPL 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, 2019 valuation date. This applies for voluntary benefit changes as well as any offers of two years additional service credit.

Changes in Assumptions: No changes in 2020. In 2018, demographic assumptions and inflation rate were changed in accordance to the PERS Experience and Study and Review of Actuarial Assumptions December 2017. There were no changes in the discount rate. In 2017, the accounting discount rate reduced from 7.65 percent to 7.15 percent. In 2016, there were no changes. In 2015, amounts reported reflect an adjustment of the discount rate from 7.5 percent (net of administrative expense) to 7.65 percent (without a reduction for pension plan administrative expense). In 2014, amounts reported were based on the 7.5 percent discount rate.

Schedule of Changes in Net Pension Liability and Related Ratios During the Measurement Period - SHY

	December 31,				
	2020	2019	2018	2017	2016
			(thousands of dollars)		
Total pension liability:					
Service cost	$ -0-	$ 203	$ 216	$ 300	$ 218
Interest	-0-	184	194	193	195
Changes of assumptions	-0-	(194)	(76)	(827)	1,118
Differences between expected and actual experience	-0-	(316)	(947)	(914)	-0-
Benefit payments	-0-	(57)	-0-	-0-	-0-
Other - Write off Pension Liability	(4,408)	-0-	-0-	-0-	-0-
Net change in total pension liability	(4,408)	(180)	(613)	(1,248)	1,531
Total pension liability, beginning of year	4,408	4,588	5,201	6,449	4,918
Total pension liability, end of year	$ -	$ 4,408	$ 4,588	$ 5,201	$ 6,449
Covered payroll	N/A	$ 18,695	$ 20,466	$ 21,743	$ 21,748
Net pension liability as a percentage of covered payroll	N/A	23.6%	22.4%	23.9%	29.7%

SHY. The schedule of changes in NPL 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: There are no longer any benefits to active members.

Changes in Assumptions: In 2019, the discount rate was updated based on the municipal bond rate as of the measurement date and was updated from 3.87 percent to 3.5 percent. Inflation was updated from 2.75 percent to 2.50 percent and the aggregate salary increase was updated from 3.00 percent to 2.75 percent. In 2018, the discount rate was updated from 3.58 percent to 3.87 percent. Demographic assumptions were updated to the PERS 1997-2015 experience study. In 2017, the discount rate was updated from 2.85 percent to 3.58 percent.

Schedule of Plan Contributions for Pension – PERS Plan

	December 31,						
	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)						
Actuarially determined contribution	$ 52,276	$ 49,119	$ 40,142	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions in relation to the actuarially determined contribution	(98,344)	(69,119)	(90,142)	(32,389)	(27,645)	(22,499)	(21,511)
Contribution excess	$ (46,068)	$ (20,000)	$ (50,000)	$ -0-	$ -0-	$ -0-	$ -0-
Covered payroll	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Contributions as a percentage of covered payroll	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, 2020 was derived from the June 30, 2017 funding valuation report.

Actuarial cost method	Entry age normal
Amortization method/period	For details, see June 30, 2017 Funding Valuation Report
Asset valuation method	Fair value of assets. For details, see June 30, 2017 Funding Valuation Report
Inflation	2.625%
Salary increases	Varies by entry age and service
Payroll growth	2.875%
Investment rate of return	7.25% 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 BB published by the Society of Actuaries.

In 2019, the investment rate of return was 7.375%. 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

	December 31,			
	2020	2019	2018	2017
	(thousands of dollars)			
Total OPEB liability:				
Service cost	$ 8,903	$ 8,946	$ 9,263	$ 8,993
Interest on total OPEB liability	26,653	26,766	29,656	28,676
Changes of assumptions	(11,453)	15,332	3,105	-0-
Differences between expected and actual experience	(23,529)	(6,885)	(59,921)	-0-
Benefit payments, including refunds of employee contributions	(23,848)	(24,521)	(24,672)	(22,192)
Net change in total OPEB liability	(23,274)	19,638	(42,569)	15,477
Total OPEB liability, beginning of year	419,483	399,845	442,414	426,937
Total OPEB liability, end of year (a)	$ 396,209	$ 419,483	$ 399,845	$ 442,414
Plan fiduciary net position:				
Contributions - employer	$ 13,299	$ 13,963	$ 34,243	$ 114,573
Net investment income	20,447	20,132	27,295	24,104
Benefit payments, including refunds of employee contributions	(23,848)	(24,521)	(24,672)	(22,192)
Administrative expense	(191)	(81)	(635)	(123)
Net change in plan fiduciary net position	9,707	9,493	36,231	116,362
Plan fiduciary net position, beginning of year	387,272	377,779	341,548	225,186
Plan fiduciary net position, end of year (b)	$ 396,979	$ 387,272	$ 377,779	$ 341,548
Net OPEB liability/(asset), ending (a) - (b)	$ (770)	$ 32,211	$ 22,066	$ 100,866
Plan fiduciary net position as a percentage of the total OPEB liability	100.2%	92.3%	94.5%	77.2%
Covered payroll	$ 287,001	$ 282,993	$ 269,753	$ 252,211
Net OPEB liability/(asset) as a percentage of covered payrol	-0.3%	11.4%	8.2%	40.0%

OPEB. The schedule of changes in NOA/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.

Notes to Schedule

Benefit Changes: There were no changes to benefits.

Changes in Assumptions: 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. In 2019, the discount rate was updated to reflect the split of assets between Strategy 1 and Strategy 3, and the mortality improvement scale was updated to Scale MP-2018.

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,			
	2020	2019	2018	2017
	(thousands of dollars)			
Actuarially determined contribution	$ 12,201	$ 10,710	$ 15,366	$ 16,472
Contributions in relation to the actuarially determined contribution	(13,233)	(13,155)	(35,128)	(116,181)
Contribution excess	$ (1,032)	$ (2,445)	$ (19,762)	$ (99,709)
Covered payroll	$ 289,552	$ 286,835	$ 277,193	$ 260,210
Contributions as a percentage of covered payroll	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, 2020 were derived from the June 30, 2019 funding valuation report.

Actuarial cost method	Entry age normal
Amortization method	Level percent of pay
Amortization period	26-year fixed period for 2020
Asset valuation method	Market value of assets
Discount rate	6.75% for all actives and retirements after 6/30/2018, 5.50% for all retirements before 6/30/2018
Inflation	2.75%
Medical trend	Non-Medicare: 7.25% for 2021, decreasing to an ultimate rate of 4.0% in 2076 Medicare: 6.3% for 2021, decreasing to an ultimate rate of 4.0% in 2076
Mortality	PERS 1997-2015 experience study
Mortality improvement	Post-retirement mortality projected fully generational with Scale MP-18

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

E3 Review Letter – Solar and Storage Rate

Energy+Environmental Economics
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Sacramento Municipal Utility District Board of Directors
6301 S St
Sacramento, CA 95817

June 15, 2021

Members of the Board:

SMUD has developed a holistic approach to address the customer-sited Solar & Storage Rate (Successor Rate). These measures are intended to mitigate the cost shifting in the current Net Energy Metering (NEM 1.0.), in light of SMUD's current commitment to zero carbon emissions by 2030. SMUD staff asked E3 to provide our perspective on the proposed rate recommendations, particularly regarding their potential effectiveness at reducing the cost shifting associated with SMUD's NEM program for the timeframe 2021-2030. E3 recently completed modelling of SMUD's proposed measures, using estimates of avoided costs from E3's "Value of Solar and Solar + Storage Study" completed in 2020.

This letter summarizes SMUD's proposed rate measures, the basis for the export rate chosen by SMUD, a brief discussion of how these measures compare in general terms to other utilities, and our main conclusions on subsidy reduction impact under each measure.

Description of SMUD's Proposed Measures

The elements of the proposed approach include:

1. Abandoning the current net energy metering to compensate for all exports at a specified buy back rate applicable to new solar and solar plus storage customers. SMUD has proposed using an export rate of $0.074/kWh. This rate is below the retail kWh charge and is supported by the 2020 E3 VOS Study, under one of the modeling scenarios. SMUD has proposed that the export rate will be adjusted after a number of years, and is expected to vary by no more than +/-30 % every four years.

2. Solar PV and PV plus storage residential customers will pay a one-time interconnection fee of $475 for systems up to 10 kW, and $900 for systems larger than 10 kW. For small commercial customers up to 100 kW the interconnection fee will be $2,500, for medium commercial customers larger than 100 kW and up to 500 kW the fee will be $3,300, and for commercial customers larger than 500 kW the fee will be $5,000.

3. PV + storage customers will be able to enroll in a Critical Peak Price (CPP) rate option, where the export credit will increase to a much higher price during summer critical peak events. SMUD's solar + storage customers will also have the option of enrolling in the Virtual Power Plant (VPP) program compensation, where operation of the battery is done through partnering with the utility.

4. Customers adopting energy storage will be offered specific one-time storage incentives that depend on the size of the battery capacity. These incentives will be discontinued as the storage prices drop over time. The incentive varies depending on the specific program:

    a. Tier 1 - "Commitment to Operate" (self-optimization of the battery storage): the maximum incentive per customer will be $500.

    b. Tier 2 - CPP rate: the maximum incentive will be $1,500.

    c. Tier 3 - VPP (partnership with SMUD): the maximum incentive will be $2,500.

The proposal does not include changes to the way self-consumption is being compensated; it will continue to be valued at full retail prices.

Consistency with Other Jurisdictions

The various measures proposed by SMUD are generally comparable to those adopted in other jurisdictions that are taking steps at mitigating cost shifting. It generally involves use of an export rate based on a measure of avoided costs, or a percentage discount over the retail rate. The 7.4 cents rate proposed by SMUD is comparable to export rates adopted by other POUs in California. Other utilities across the US have also begun to offer storage-specific incentives comparable to SMUD, to incentivize market transformation. SMUD's incentive payments are also intended to assist in moving the industry towards a solar + storage model.

Effectiveness at Reducing Cost Shifts

E3 has recently modelled the impact of SMUD's proposed measures on the cost-shifting and subsidy impact and found that on a net present value basis, the overall subsidy for PV-only customers would be reduced by about 24% using the 7.4 c/kWh export rate over the 10-year period. When adding storage, the PV + storage NPV of overall subsidy would be reduced by 32.1% (VPP), by 24.6% (CPP) and by 24.5% (Self Optimization).

The VPP program is more effective in reducing the PV + Storage subsidy, as SMUD receives additional capacity value from battery control. These results are summarized below:

PV Customers & PV + Storage Customers

Rate Scenario	2021-2030 Subsidy ($2021 MM)	Subsidy Reduction Compared to NEM 1.0 ($2021 MM)
NEM 1.0	438.7	-
Self Opt	331.0	107.6
CPP	330.9	107.7
VPP	297.9	140.8

Only PV Customers

2021-2030 Subsidy	2021-2030 Subsidy ($2021 MM)	Subsidy Reduction Compared to NEM 1.0 ($2021 MM)
NEM 1.0	381.4	-
Flat 7.4 cent Export Rate	290.9	90.5

Overall, the proposed package of measures will reduce the cost-shifting that exists under NEM 1.0. It also provides better incentives for storage for participating customers compared to the current TOU rates. SMUD PV + storage measures include innovation and provide value better aligned with grid capacity needs. However, significant cost shifts remain.

Basis for the Proposed Export Rate

Under the 2020 VOS study, E3 calculated two different bookend scenarios to estimate the value that customer solar generation and solar plus storage will have for SMUD's ratepayers as a whole. One scenario assumed that SMUD's portfolio continues to rely on natural gas generation, and that customer solar generation is "incremental" clean energy that displaces SMUD's natural gas plants. The annual avoided cost estimate averaged $0.074/kWh in year 2020 for customer solar, and $0.125/kWh for customers with solar plus storage. The second scenario assumes that SMUD's resource portfolio has achieved the 100% clean energy goal, and customer solar systems will displace other clean energy resources, proxied by utility scale solar. E3 estimated the avoided cost of customer solar under this second scenario will be $0.036/kWh by 2030. The compensation to customers under the proposed export rate would therefore be higher than their value to SMUD, with the discrepancy growing as SMUD gets closer to its zero carbon goals. This comes at a cost to SMUD's non-participating customers. Compensation above value can be appropriate as part of a transition strategy and as a mean to provide predictability in export compensation to SMUD's solar customers.

Conclusion

To summarize, E3's review of SMUD's proposed rate design changes finds that they are consistent with rate design developments in other jurisdictions and that they eliminate between 25% and 32.1% of the subsidy that is occurring under SMUD's NEM program. Going forward, as SMUD's resource portfolio moves closer to 100% clean energy, E3 recommends that SMUD adjust the export rate to reflect SMUD's avoided purchases of clean energy, rather than avoided natural gas combustion.

Sincerely,

Arne Olson

Senior Partner

Appendix II

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%

* Medium Commercial, Agricultural and Lighting rates increased by 16%