



2020 SMUD Annual Report

# Sacramento Strong





# SMUD overview



# 1.5 million

Service Area Population

Record Peak Demand

# 3,299

megawatts on

JULY 2006

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    |    |    | 1  |
| 2  | 3  | 4  | 5  | 6  | 7  | 8  |
| 9  | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 |    |    |    |    |    |



Employees  
(year end)

# 2,179

Authorized Budget

# \$1.8 billion

Customer Contracts  
(year end)

# 644,723

Credit Rating



**AA**

Standard & Poor's

**AA**

Fitch

**AA3**

Moody's



# SMUD overview

## SMUD Service Area and Board Member Wards



The Sacramento Municipal Utility District generates, transmits, and distributes electricity to a 900-square-mile territory that includes California's capital city, Sacramento County, and small slices of Placer and Yolo counties. As a community-owned, not-for-profit, SMUD is governed by a seven-member Board of Directors elected by the voters to staggered four-year terms. The SMUD Board of Directors determines policy and appoints the chief executive officer/general manager, who is responsible for SMUD's day-to-day operations.

## SMUD BOARD OF DIRECTORS

Brandon Rose  
**Ward 1**

Nancy Bui-Thompson  
**Ward 2**  
*Vice President 2020, President 2021*

Gregg Fishman  
**Ward 3**

Rosanna Herber  
**Ward 4**

Rob Kerth  
**Ward 5**  
*President 2020*

Dave Tamayo  
**Ward 6**

Heidi Sanborn  
**Ward 7**

## EXECUTIVE MANAGEMENT

Executive Management  
Paul Lau  
*CEO & General Manager*

Laura Lewis  
*Chief Legal Officer*

Jennifer Davidson  
*Chief Financial Officer*

Gary King  
*Chief Workforce Officer*

Scott Martin and Lora Anguay  
*Interim Chief Grid & Strategy Operations Officer*

Frankie McDermott  
*Chief Energy Delivery Officer*

Stephen Clemons  
*Chief Information Officer*

Brandy Bolden and Tracy Carlson  
*Interim Chief Customer Officer*



## CEO LETTER

# Paul Lau

At SMUD, we're accustomed to dealing with unplanned events such as droughts, winter storms and economic downturns. We were put to an entirely different test in 2020 with the COVID-19 pandemic.

Fortunately, by taking early action to ensure the safety of our employees, the public and SMUD operations, we kept the power flowing to the million and a half people we serve across the capital region. Given the economic hardships many of our customers were experiencing, we suspended all power shutoffs for non-payment and made it easier to register for SMUD's low-income assistance rate.

After a year unlike any other in SMUD's history, I'm pleased to report that we nonetheless ended the year on strong financial footing. The risk-based approach we use to mitigate more predictable risks, such as wildfires, cybersecurity and storms, served us particularly well in the year of COVID-19.

While all this was going on, SMUD didn't stand still. Far from it. In fact, we embarked in 2020 on the most ambitious decarbonization plan of any large electric utility in the country.

In July 2020, the SMUD Board adopted a Climate Emergency Declaration that committed us to achieving carbon neutrality by 2030. Building on the Board's declaration, I tasked the entire organization with developing a road map that gets SMUD to zero carbon emissions by 2030.



Sacramento's poor air quality, coupled with the growing threat of climate change, prompted the 2030 Zero Carbon Vision that will completely remove carbon from our power supply by the end of this decade. It's an audacious vision, but we can't afford to waste any time on this. Half measures won't cut it. We're all in, and by decarbonizing without sacrificing our reliability and affordability, SMUD will show the world what's possible.

SMUD is in strong shape to take on a challenge of this magnitude. Due to our strong credit rating and financial strength, we were one of the first utilities able to issue debt after the debt markets froze due to COVID-19. We finished 2020 with more than \$74 million in our hydro rate stabilization fund and worked to reduce our unfunded pension liability.

On a personal note, I'd like to take this opportunity to thank the SMUD Board for entrusting me in October with the responsibility of serving as CEO

and general manager. The Board's decision to select an internal candidate for the CEO position is a strong endorsement of the vision and leadership shown by my predecessor, Arlen Orchard, who retired in 2020.

I'm honored to have the opportunity to lead the organization I've called my professional home for nearly 40 years. I encourage you to learn more about SMUD's accomplishments in this report. The resilience we showed in 2020 is a credit to our terrific workforce and the relationship we've developed with our customers over the years.

Sincerely,



**Paul Lau**

CEO & General Manager





# SMUD keeps power flowing during pandemic

SMUD took extraordinary steps to ensure the reliability of the electric grid and power system during the COVID-19 crisis. As a result, we were able to keep the power flowing throughout one of the most tumultuous years in our history.

A series of early actions taken to ensure the safety of employees, the public and SMUD's operations set the foundation for a successful response. SMUD activated its Emergency Operations Center

on February 26, implemented social distancing and closed its campuses to the public.

Virtually overnight, nearly two-thirds of SMUD's employees shifted to remote work. For field crews and others who needed to be on site, SMUD implemented a range of safety, social distancing and cleaning protocols. SMUD's first remote Board of Directors meeting was held April 16.

To assist the thousands of customers struggling with the pandemic's economic fallout, SMUD implemented a number of measures to alleviate some of that pain, including:

- Suspended disconnection of power due to non-payment and waived late payment fees for all customers through May 30. The moratorium was extended several times in 2020 and continued into 2021. SMUD is offering flexible payment options for those customers who fell behind on their electricity bills.
- Made it easier for customers to sign up for our low-income rate.
- Worked with our nonprofit partners on how we could continue to support them in their time of need.
- Provided micro-loans of up to \$10,000 for nonprofits affected by the pandemic.
- Launched a "Stay Well" radio, print, TV, digital and billboard advertising campaign to educate the community about SMUD's coronavirus response.
- Developed new education resources for at-home learning through our Energy Education & Technology Center.
- Offered extensive online resources on [smud.org/HereToHelp](https://smud.org/HereToHelp).

Similarly, SMUD reduced the pandemic's threat to the organization's financial future. Strong financial management and the quick adjustment of budgets and programs allowed SMUD to remain flexible in its pandemic response and hit its financial targets for the year.



# 2030 Zero Carbon Vision

## SMUD's groundbreaking path

SMUD's Clean Energy Vision puts the capital region's utility front and center in the fight against carbon emissions, climate change and air pollution. We're committed to removing all carbon emissions from our power supply by 2030.

That's not a typo – by 2030.

It's a tall order - a challenge SMUD is determined to meet without sacrificing the affordable rates and reliable service our customers have come to expect. For those who might say we can't possibly afford to do all this in the space of just nine years, our response is simple:

We can't afford not to do it.

Sacramento's poor air quality, along with the droughts and wildfires brought on by climate change, puts the region in an unsustainable position. In the American Lung Association's "2020 State of the Air" report, Sacramento was ranked the sixth worst city in the country based on the number of days of unhealthy and unsafe levels of air pollution in the ozone layer. Our childhood asthma rates are unacceptably high.

SMUD's 2030 Zero Carbon Plan focuses on four areas: proven and new clean technologies; new business models and partnerships; the retooling and retirement of our natural gas plants; and regulatory and financial strategies.



Proven clean technologies such as wind, solar, hydro, biomass, battery storage, energy efficiency and demand response will all play a big part. While today's carbon-free technology isn't capable of reducing our carbon emissions to zero, these resources can get us very close - 90 percent of the way. We're already halfway there, with 50 percent of our power supply carbon free today.

We are identifying new technology and business model options that enable us to work with like-minded partners in researching, piloting and bringing new technologies to scale. Possibilities include power-to-gas technology such as hydrogen and methane, and long-duration energy storage options, such as flow batteries and compressed air storage.

SMUD's decarbonization plan provides options for retiring or retooling our gas plants. Two of SMUD's five plants will be shut down by 2025. We're looking closely at reliability to finalize the schedule for retiring or refueling the other three plants. Hydrogen blending, or using hydrogen as fuel, could significantly reduce emissions from gas-fired plants. It's a young and exciting technology.

The financial aspect of the 2030 Zero Carbon Plan includes estimated costs ranges and associated rate impacts; potential alternative revenue sources such as partnerships and grants; investment schedules for expanding our existing clean technology; and research and piloting options.

A key element of the plan is in the electrification of buildings and vehicles. As our reliance on carbon-based fuels decreases every year, increased electrification of two of the largest energy users and polluters – homes and vehicles – will greatly reduce greenhouse gas emissions and improve local air quality.

SMUD's 2030 Zero Carbon Plan will drive economic development by creating jobs in the growing clean energy and clean tech sectors and encourage innovation. Importantly, it will help bring environmental justice to historically

underserved communities that are often located near freeways and power plants and left out of decisions and conversations about carbon emissions that impact their community.

SMUD recognizes that we can't accomplish our goal by going it alone. We need a wide range of support, including elected officials, local business groups, community leaders, technology companies, car manufacturers, solar companies, the federal government and more.

We also can't get where we want to go by asking our customers to pay for all of it. By partnering with the private sector, regulators and the community at large, we can achieve our goal with rates that remain affordable.

Environmental leadership has long been a part of SMUD's DNA, and never before has Sacramento's community-owned electric utility had a greater opportunity to make a difference in the lives of our customers - today's and tomorrow's.

For more information, visit [CleanPowerCity.org](http://CleanPowerCity.org).





# The year in review

While COVID-19 cast a long shadow over 2020, SMUD managed to compile a various and extensive list of accomplishments. What follows is a month-by-month sample of 2020 highlights:

## January

### Energy Pathways program provides training for green jobs

The new year was just a few days old when SMUD announced the creation of the Energy Pathways program, a collaborative workforce development effort designed to increase the use of solar power in underserved communities and provide good-paying jobs.

Teaming up with SMUD in the Energy Pathways program were the Sacramento Promise Zone Collaboration, Sacramento Black Chamber of Commerce, Sacramento Urban League, Sacramento Kings, Baker Energy Team, UC Davis Health, Sacramento Housing and Redevelopment Agency and Spotlight Solar.

The program consisted of 200 students (ages 18 to 30) participating in hands-on training and a five-week classroom course to learn the technical skills needed to work in clean energy jobs.

A year after enrolling in the program, students began installing solar tree structures at the Simmons Community Center and the Greater Sacramento Urban League to provide clean, renewable power.

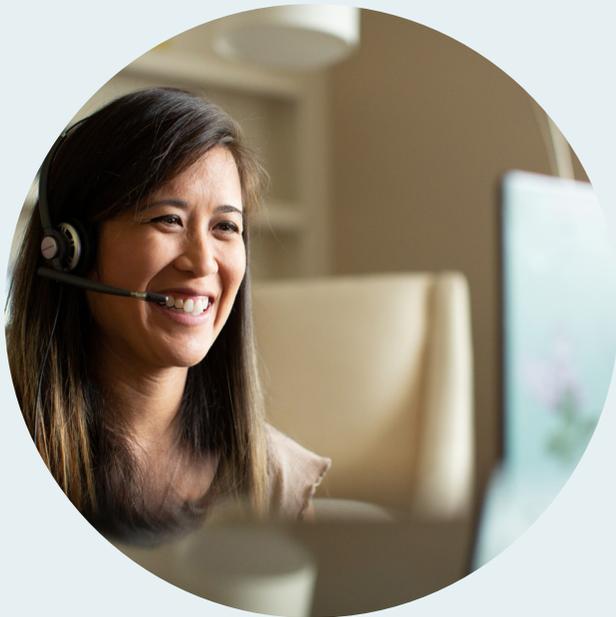


## February

### CEC approves Neighborhood SolarShares®

The California Energy Commission approved SMUD's application to use its Neighborhood Solar Shares program as an option for developers to meet the California solar mandate. SMUD's program gives new home developers the ability to deliver the environmental benefits of solar energy without having to install panels on every rooftop.

All solar resources allocated to the community solar program will come from within SMUD's service territory and won't exceed 20 megawatts. SMUD agreed to collaborate with builders so they can offer a choice of rooftop solar or community solar at the point of purchase.

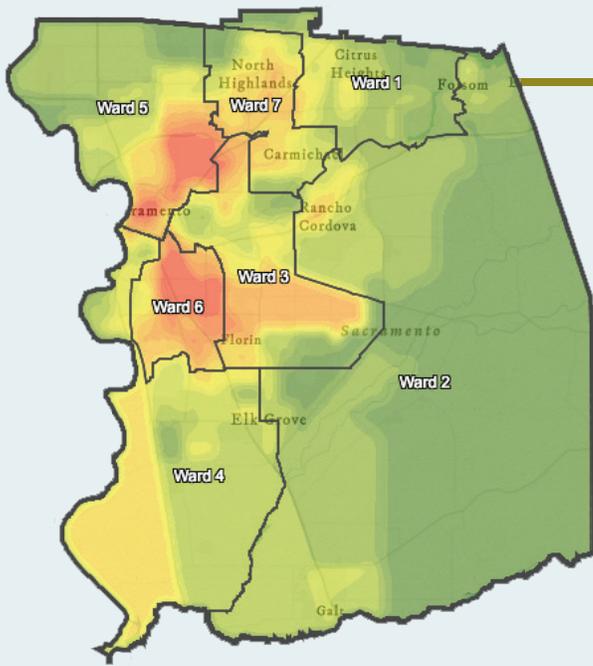


## March

### Pandemic hits Sacramento

All within weeks of the first Sacramento resident testing positive for COVID-19 in late February, SMUD implemented safety measures that included restricting all employee travel, canceling the March Board of Directors meeting, closing its buildings to the public and shifting about 1,400 of its employees to remote work from home.





## April

### Mapping out the areas that need the most help

SMUD unveiled a new mapping tool to identify the Sacramento-area neighborhoods most in need of improved education, health care, employment, transportation, tree canopies and cleaner air.

The Sustainable Communities Resource Priorities Needs Map enables better resource allocation as SMUD and other community partners work to reduce economic disparity in Sacramento County. The map proved to be particularly timely given the disproportionate impact the coronavirus pandemic has had on under-resourced communities.

## May

### SMUD hires goats to help reduce fire risk

SMUD enlisted the help of nearly 400 goats to lessen the fire danger along transmission corridors in Sacramento County.

As part of SMUD's vegetation management effort, the goats moved around SMUD's service territory to reduce vegetation, create fuel breaks and mitigate potential fire risk. Goats have four stomachs, which makes it easy for them to consume and digest roughage, and they're able to devour brush in hard-to-reach terrain.

The goats were guarded by a pair of Anatolian Shepherds named Heidi and Ricki.

To learn more about SMUD's wildfire mitigation plan, visit [smud.org/WildfireSafety](https://smud.org/WildfireSafety).





**June**

**TOD rates help customers save while benefiting environment**

In a June presentation to the Board of Directors, SMUD staff detailed the ways in which SMUD’s Time-of-Day (5-8 p.m. Peak) Rate is saving customers money and helping the environment.

The 535,000 eligible customers participating in Time-of-Day (TOD) rates resulted in a shift and reduction of electricity usage in all time periods and reduced carbon emissions by 12,800 tonnes. That’s the equivalent of removing 4,200 cars from the road for a full year. TOD rates also saved customers an average of \$3 per month on their summer bills. These results were better than was originally anticipated when TOD rates were implemented to support SMUD’s carbon reduction goals.

The results of the first TOD summer meant that SMUD customers are reducing and shifting their energy use to time periods when electricity prices are lower and renewable resources such as solar are abundant.



**July**

**SMUD Board issues Climate Emergency Declaration**

The SMUD Board in July issued an emergency declaration committing SMUD to delivering carbon-neutral electricity by 2030.

In upping the ante from the resource plan submitted to the California Energy Commission in 2019, the Climate Emergency Declaration recognized the immediate risks of air pollution and climate change to the Sacramento region and the need for SMUD to move even faster.



## August

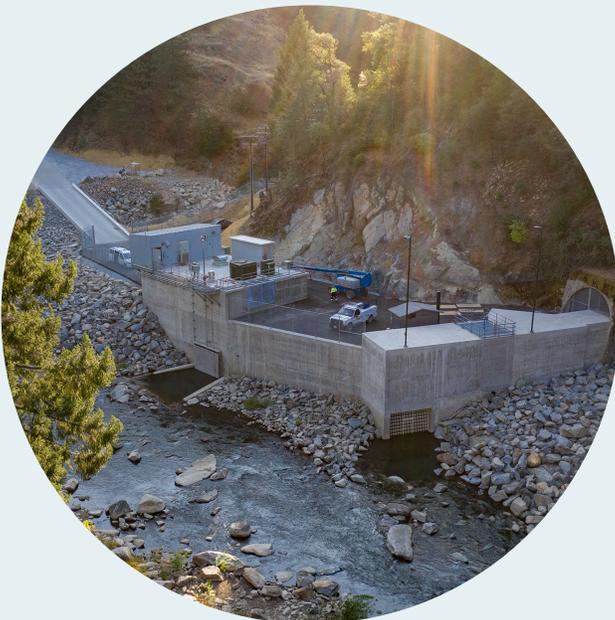
### Heat wave affects rest of state harder than Sacramento

As if Californians didn't have enough on our plate with COVID-19, a searing August heat wave strained the state's electricity supply.

High temperatures across the west drove electricity demand to near all-time highs up and down the state. With demand exceeding supply, the California Independent System Operator (California ISO) called for Level 3 emergencies that resulted in rolling blackouts across much of the state - but not in SMUD's service territory.

SMUD is a member of the Balancing Authority of Northern California, or BANC, an independent balancing authority within the western power grid. As a result, the rolling blackouts did not directly affect SMUD. While SMUD experienced some localized outages, none were due to energy shortages or blackouts.

While SMUD is not required to participate in California ISO-ordered outages, we do participate in California ISO's Energy Imbalance Market. From Aug. 14 through Aug. 18, SMUD sold about 6,800 megawatt hours - enough electricity to power about 68,000 homes - back into the California ISO to help alleviate the statewide shortage.



## September

### South Fork Powerhouse begins operations

SMUD's South Fork Powerhouse began operations in September, generating hydroelectricity on the American River near Camino.

Since the 2.7-megawatt powerhouse is considered a "small hydro" project (less than 30 megawatts), the electricity it produces counts toward the state Renewable Portfolio Standard. The project received \$1.5 million in funding from the U.S. Department of Energy.

The South Fork Powerhouse project includes a boating flow release facility, enhancing whitewater flows on a nine-mile stretch downstream from Slab Creek Reservoir. The flow enhancements are required in the current 50-year Federal Energy Regulatory Commission license issued to SMUD to operate its Upper American River Project in El Dorado County.

## October

### Lau replaces Orchard as SMUD CEO/General Manager

Paul Lau succeeded Arlen Orchard as SMUD's CEO and general manager, taking the reins on Oct. 3. Lau joined SMUD as a college intern in 1982 and was hired as an assistant electrical engineer after graduating from Sacramento State in 1984.

Prior to being named SMUD's CEO by the Board of Directors, Lau served as chief grid strategy operations officer, overseeing SMUD's power supply and distributed energy strategies. Lau had been a member of SMUD's executive leadership team since 2008.

Orchard had planned to retire earlier in the year but delayed his exit to help SMUD get through the COVID-19 pandemic.



## November

### SMUD assists COVID-impacted nonprofits

With nonprofits struggling during COVID-19, SMUD moved its first round of Shine awards to November, awarding \$200,000 to 10 local organizations that could put the funding to immediate use in the community.

Shine funding is awarded to projects that address neighborhood revitalization, STEM (science, technology, engineering and mathematics) education, environmental sustainability and energy efficiency, and workforce development.

The second round of Shine funding for 2020-21 was issued in February 2021.

## December

### SMUD recognized for environmental leadership

SMUD was recognized for its leadership in corporate sustainability by Carbon Disclosure Project (CDP), a global environmental nonprofit. SMUD received a place on CDP's "A List" for tackling climate change and for our specific actions to cut emissions, mitigate climate risks and develop a low-carbon economy.

CDP, which is based out of London, runs the global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts. More than 9,600 companies disclosed environmental data through CDP in 2020. Only 270 of those companies made the A list, putting SMUD in the top three percent of respondents.



Powering forward.  
Together.

