



Memorandum

TO: TRANSPORTATION AND
ENVIRONMENT COMMITTEE

FROM: Lori Mitchell

**SUBJECT: SAN JOSE CLEAN ENERGY
PROGRAMS ROADMAP UPDATE**

DATE: February 13, 2023

Approved

Date

2/27/23

RECOMMENDATION

Accept the report on the status of the San José Clean Energy¹ Programs Roadmap.

BACKGROUND

San José Clean Energy Financial Position

One of the key advantages of California Community Choice Aggregators (CCAs) is the ability to reinvest operational financial surpluses into the community through programs and rate discounts, along with a greater awareness of community needs than large investor-owned utilities. Prior to investing in programs, it is important for a CCA to build an operating reserve² and scale the core team managing the CCA to allow the CCA to withstand any sudden market or regulatory changes. San José Clean Energy is on track to build reserves equal to 180 days of operating expenses by the end of calendar year 2023.³ In fall 2022, San José Clean Energy adopted a cost-of-service methodology for setting rates, which is an industry-accepted framework that assigns or allocates costs to each customer class served by a utility (e.g., residential, small commercial, medium commercial, large commercial, etc.). Costs and reserve replenishment are added up into a revenue requirement that is to be recovered through rates. In future years, City Council could decide to include a budget for programs and staffing in San José Clean Energy's revenue requirement. Staff will return to City Council at a later date to determine the budget for programs in San José Clean Energy cost-of-service rate setting.

¹ For the purposes of this memorandum, San José Clean Energy will be used to refer to San José Clean Energy, the Community Choice Aggregation, and the City's Community Energy Department, its implementer.

² In November 2021, Deloitte & Touche, LLP recommended that SJCE build and maintain a reserve of 180 days of operating expenses. [November 17, 2021, Transportation and Environment Committee Memorandum, SJCE Operational Update and Strategic Framework Plan](#)

³ [November 7, 2022, Transportation and Environment Committee Memorandum, SJCE Cost-of-Service Study Summary Report](#)

CCA Program Landscape

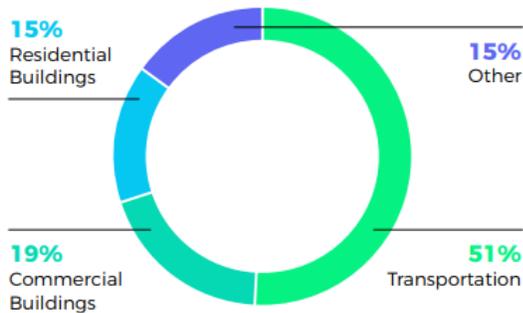
All nine counties in the San Francisco Bay Area are now served by a CCA; therefore, there are numerous CCA programs for San José Clean Energy to learn from, benchmark against, and duplicate. In general, California CCAs have focused on programs that reduce greenhouse gas emissions, increase electrical load through electrification, and/or reduce energy procurement costs. In order of priority, Bay Area programs have focused on the following areas:

1. Transportation electrification
2. Building electrification
3. Distributed energy resources and resiliency

Program Alignment with Climate Smart

As a Core Service of the City of San José, San José Clean Energy is focused on maintaining alignment between its programs and Climate Smart San José, the city’s climate action plan. Replacing fossil fuel uses with carbon-free electricity will be key to achieving San José’s carbon neutrality by 2030 goal (Figure 1). Beyond providing carbon-free electricity to San José residents and businesses, San José Clean Energy programs will play a key role in incentivizing the electrification of transportation and buildings (Figure 2). Staff attends regular stakeholder meetings with the Climate Smart team to support the City’s goal of becoming carbon neutral by 2030 and provides energy-related data and analysis as needed to inform strategies.

Figure 1. San José Communitywide Greenhouse Gas Emissions by Major Source, 2019⁴



⁴ [Climate Smart San José Pathway to Carbon Neutrality by 2030 fact sheet](#)

Figure 2. San José Clean Energy’s alignment with Climate Smart San José as well as the related strategies (in yellow dashed boxes)



Program Categories

San José Clean Energy’s Programs Roadmap,⁵ which was accepted by the City Council on March 9, 2021, offers a vision of the types of customer programs San José Clean Energy will evaluate and choose over the next several years (Attachment A). See Appendix A for a history of City Council actions related to San José Clean Energy programs. Staff developed the Programs Roadmap from 2019 to 2021 with input from various stakeholder groups: residential and commercial customers, the City’s Clean Energy Community Advisory Commission, the Transportation and Environment Committee, other CCAs, City departments, and energy and electrification industry experts. Stakeholders provided feedback on program areas, guiding principles, and strategies through multilingual surveys, focus groups, interviews, and workshops. Staff intends to provide a status update on the Programs Roadmap to the Transportation and Environment Committee yearly.

The six program categories were chosen in collaboration with the Clean Energy Community Advisory Commission and were based on other CCAs’ experience as well as the program categories’ connections to Climate Smart San José. The six program areas serve as the primary focus for San José Clean Energy:

1. **Vehicle Electrification:** programs focused on accelerating the conversion of all vehicle types into an electrified version
2. **Building Electrification:** programs supporting the conversion of homes and buildings from gas and electricity powered to solely electricity powered
3. **Distributed Energy Resources:** programs that include resources on the customer side of the utility meter, such as solar, battery storage, and demand response

⁵ [SJCE Programs Roadmap](#)

4. **Energy Efficiency:** programs that reduce energy usage and costs through equipment upgrades or building envelope improvements
5. **Program-Specific Rates:** programs designed to offer special rates to select customer groups to incentivize energy-use behavior or support those customer groups
6. **Resiliency:** programs to provide backup power or to sustain power during an outage or other electric service disruption, often relying on distributed energy resources on the customer side of the utility meter.

Program Guiding Principles

Overall, San José Clean Energy aims to design programs to increase equity and access to the benefits of renewable energy and electrification. The Programs Roadmap outlines five guiding principles for program selection that were approved by the Transportation and Environment Committee on June 3, 2019:

1. Promote equity and affordability and support disadvantaged communities
2. Maximize greenhouse gas reduction opportunities
3. Align with Climate Smart San José, the city's climate action plan
4. Produce customer and community benefits
5. Maintain or improve the financial status of San José Clean Energy

The program selection process involves verifying whether the program addresses most of the guiding principles, scoring the program, and analyzing the program's impact on equity considerations.

ANALYSIS

Current Programs Status

San José Clean Energy is currently offering six customer programs as approved by the City Council (Figure 3). The six programs have a combined total budget of up to \$38.5 million, approximately 80% of which is funded by external sources.⁶ Three of the programs are funded by the California Public Utilities Commission (CPUC): two energy efficiency programs – the San José Home Appliance Savings Program and San José Energy Efficient Business Program – and Solar Access, a disadvantaged community green tariff program. San José Clean Energy is co-funding the California Electric Vehicle Infrastructure Project (CALeVIP) with the California Energy Commission and is fully funding SJ Cares and the Direct Current Fast Charging Hubs Pilot Program.

⁶ The budget total does not include expenditures for the SJ Cares' program as its rate discount is considered by the City Council as part of SJCE's rate setting on an annual basis.

Figure 3. Current San José Clean Energy Programs

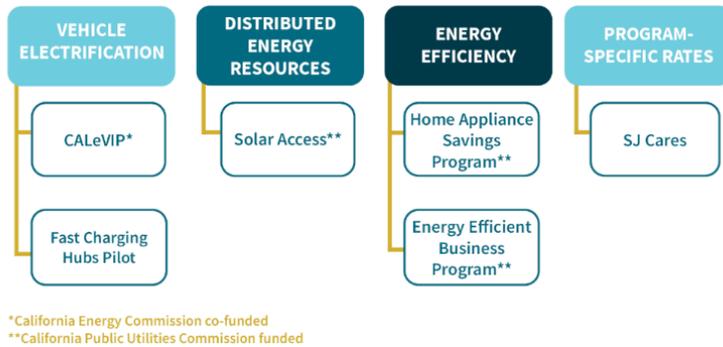


Table 1. Annual collective impacts of a selection of San José Clean Energy’s current programs

	Electricity savings	Greenhouse gas reductions	Customer bill savings
Solar Access	-	350 metric tons CO ₂	\$200,000
Home Appliance Savings Program	110,000 kilowatt-hours	8-29 metric tons CO ₂ *	\$38,000
Energy Efficient Business Program	4,959,000 kilowatt-hours	360 metric tons CO ₂	\$1,215,000
SJ Cares	-	-	\$5,500,000
Total	5,069,000 kilowatt-hours	718 – 740 metric tons CO₂	\$6,953,000

*Depends on the number of electric appliances that will replace natural gas appliances

CALeVIP

CALeVIP is a \$14 million rebate program for the installation of electric vehicle (EV) chargers at workplaces, apartments, condos, and public places co-funded by the California Energy Commission and San José Clean Energy. The Center for Sustainable Energy handles program implementation and administration, including processing the applications and distributing incentives to program participants. The program provides rebates for Level 2 and Direct Current Fast Chargers (fast chargers) (Table 2) with an emphasis on sites located in low-income and disadvantaged communities. San José Clean Energy’s participation in CALeVIP aligns with the Department of Transportation’s Electric Mobility Roadmap and Climate Smart strategy 2.3.

Table 2. Types of EV Chargers

	Level 1	Level 2	Direct Current Fast Charging
Charge Time	3-5 miles per hour	10-40 miles per hour	80% charge in 20-30 minutes
Installation	None required; use a standard, properly grounded 3-prong outlet	Hire an electrician to install and get a permit; same type of outlet that dryers use	Found in public places; professionally installed

Voltage	120 Volt	208 Volt or 240 Volt	208 Volt or 480 Volt
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CALeVIP launched in December 2020, and all incentive funds were reserved within six minutes. As of January 2023, 100 Level 2 and 11 fast chargers have been installed. As some applicants moved through the planning and permitting phases, they chose to cancel their applications, opening funds up for applicants on the waitlist. By fall 2022, \$2.165 million in funds for Level 2 chargers were unclaimed, while there was more than \$4 million in projects on the waitlist for fast charging funds. San José Clean Energy and the California Energy Commission decided to shift the unclaimed Level 2 funding in November 2022 to the budget for fast chargers. The new fast-charging projects are expected to commence by early 2023 and be completed by the end of 2024 or early 2025.

Direct Current Fast Charging Hubs Pilot Program

On November 15, 2022, the City Council approved a fast charging hubs pilot program, whereby San José Clean Energy will enter into tolling agreement(s) with one or more vendors to deploy one to three fast charging hubs at City-owned or private sites in low-income and disadvantaged communities. Staff expects that hubs will be operational in Fiscal Year 2023-2024 or Fiscal Year 2024-2025 and run for 10 years. Each hub will contain parking spaces and chargers to accommodate at least 10 EVs. The completion date of the hubs will depend on Pacific Gas and Electric service upgrade planning for the selected sites and EV charging equipment supply chains. Staff is working with the City Attorney’s Office and departments to vet sites and developers and have begun negotiating tolling agreements and developing site licenses.

The vendor would own the fast-charging infrastructure and would be responsible for siting, financing, design, engineering, procurement, permitting, construction, installation, interconnection, operation, maintenance, the load management system, and back-office services (e.g., communications, user account management, billing, reporting, and utility interface applications) at each site. The City, via the San José Clean Energy Operating Fund, would pay fixed monthly tolling payments based on the vendor’s performance on hardware and software uptime. San José Clean Energy would provide energy and set retail pricing for the chargers to encourage mid-day charging to reduce greenhouse gas emissions. Staff estimated the financials for the pilot project (tolling costs minus revenue from customers and Low Carbon Fuel Standard credits); each hub is expected to incur a loss of \$1.5 million over the 10-year contract term, though the hubs could turn a profit depending on utilization and grant funding.

Typically, low-income and disadvantaged communities have little to no existing public charging infrastructure and lower EV adoption. The pilot would help signal to residents in surrounding neighborhoods that EV charging is available to them. San José Clean Energy will use the pilot to market-test novel retail pricing structures to benefit low-income EV drivers, such as unlimited charging subscriptions or discounts based on income. In 2023, San José Clean Energy will conduct market research surveys to understand the driving habits of residents of neighboring communities and create retail pricing structures that bring value to residents. Once the hubs are operational, San José Clean Energy will hire community-based organizations to educate residents of the surrounding neighborhoods about the benefits of EVs. San José Clean Energy and community-based partners will conduct multi-lingual education and outreach campaigns that

include EV test drive events and one on one assistance navigating and applying for rebates and incentives.

Solar Access Program

The Disadvantaged Community Green Tariff program, now named Solar Access⁷ for San José Clean Energy customers, is a CPUC-funded program that provides a 20% bill discount and 100% solar energy to more than 800 low-income customers living in San José disadvantaged communities. Customers receive the Solar Access discount in addition to their California Alternative Rate for Energy or Family Electric Rate Assistance monthly discounts, for up to 55% off their electricity bill.⁸ San José Clean Energy's Solar Access program was approved by the CPUC in April 2021, and San José Clean Energy was allotted a program capacity of 1.7 megawatts to serve program participants. The program capacity of 1.7 megawatts is currently procured from an interim energy resource. San José Clean Energy issued a competitive solicitation for a permanent energy resource; it is expected to be built by the end of 2023.

San José Clean Energy began taking applications and enrolling customers in November 2021. San José Clean Energy worked with local community-based organizations to ensure Spanish and Vietnamese-speaking residents were aware of the program and that residents had time to apply by mail before online enrollment opened. As a result, more than 40% of the initial 700 applicants speak Vietnamese or Spanish, and more than 80% of the applications were submitted via phone or mail. In June 2022, the program reached capacity at approximately 845 customers. Staff continue to maintain full enrollment each month through a combination of customer applications and auto-enrollments and have opened a waitlist. Nearly \$200,000 of bill discounts were provided to customers in 2022. Annually, the 100% renewable mix for these customers will result in 350 metric tons of avoided CO₂ emissions.

CPUC-Funded Energy Efficiency Programs

Energy efficiency is considered an important first step in building electrification as it reduces energy usage and creates capacity for other electricity uses. Energy efficiency programs also lower bills and reduce greenhouse gas emissions, aligning with Climate Smart strategy 2.2. In California, the CPUC regulates energy efficiency programs that are funded by ratepayers via public purpose program charges on monthly energy bills. In early 2021, San José Clean Energy submitted an Elect to Administer application to the CPUC to offer commercial and single-family residential energy efficiency programs to its customers. In September 2021, the CPUC approved San José Clean Energy's application for the full amount of funding (approximately \$5.1 million) for administering the two programs through late 2024. The City Council allocated \$500,000 from American Rescue Plan funds to expand the single-family residential energy efficiency program. In September 2022, San José Clean Energy launched the programs, both of which are implemented by Franklin Energy Services. Both programs are estimated to result in 2,800

⁷ [Solar Access program webpage](#) (also available in [Spanish](#) and [Vietnamese](#))

⁸ SJ Cares provides an additional 10% discount on the generation portion of their bill.

megawatt-hours of annual savings over the lifetimes of the energy-saving equipment – equal to the annual usage of about 560 homes.

San José Home Appliance Savings Program

The San José Home Appliance Savings Program⁹ serves two residential customer groups: single-family homes located in disadvantaged communities¹⁰ and moderate-income single-family homes citywide.¹¹ The program currently offers 50-70% discounts on new energy-efficient refrigerators, washers, and electric dryers, with free delivery, installation, haul away of the old appliance, and a five-year warranty. To purchase an appliance, customers must pass the eligibility screen on the San José Clean Energy website to receive a redemption code to be used in person at Airport Home Appliance’s San José store. The appliance discount layers a bulk purchase discount applied by Airport Home Appliance at the register with a larger rebate funded by the CPUC and City-allocated American Rescue Plan funds (Table 3). Eligible customers can also order free smart thermostats via the San José Clean Energy website. From September 12, 2022 through November 18, 2022, customers could also order free smart plugs before the CPUC sunset the offer at the end of 2022.

Table 3. Pricing for a subset of appliances in the San José Home Appliance Savings Program

Appliance	Cost	Airport Appliance Price	CPUC Incentive	American Rescue Plan Incentive	Cost to Customer	% Off
Clothes dryer	\$1,549	\$1,250	\$270	\$380	\$600	-61%
Clothes washer	\$1,049	\$946	\$250	\$350	\$346	-67%
Refrigerator (large)	\$1,199	\$900	\$218	\$182	\$500	-58%

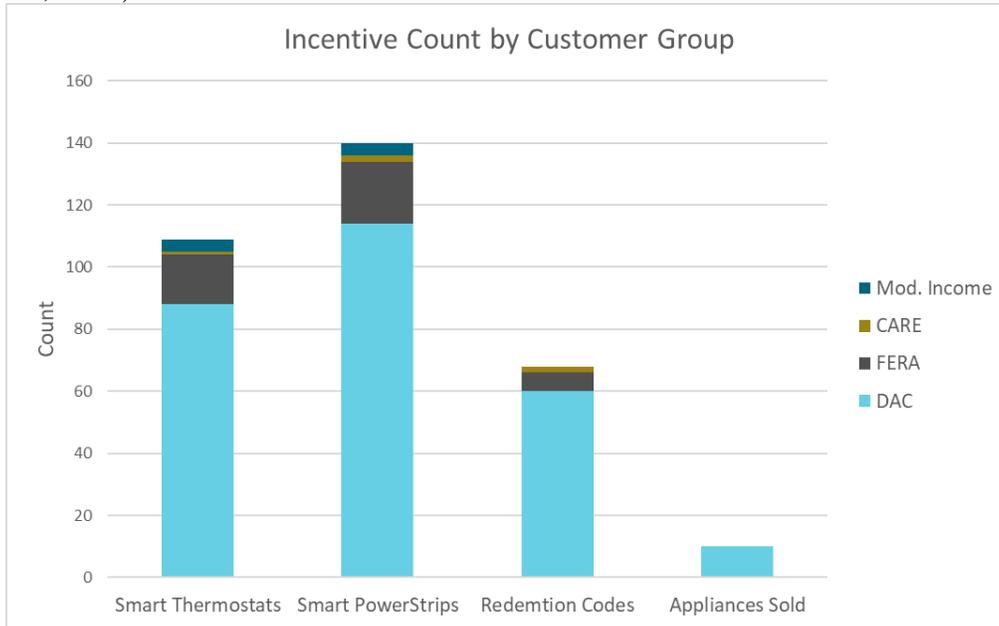
San José Clean Energy aims to serve more than 1,050 households through the program by the end of 2024 and is on track to meet that goal. As of February 10, 2023, eligible customers have ordered 140 smart plugs and 115 smart thermostats. Customers have requested 68 appliance redemption codes required to purchase appliances at Airport Home Appliance, resulting in nine appliance purchases (Figure 4). San José Clean Energy is currently working to add appliances from two additional brands as well as heat pump dryers and induction cooktops. San José Clean Energy staff are coordinating with Climate Smart staff to incorporate the appliance offers into their building electrification retrofit accelerator program with BlocPower.

⁹ [San José Home Appliance Savings Program webpage](#) (also available in [Spanish](#) and [Vietnamese](#))

¹⁰ [Map of disadvantaged communities as designated by the California Environmental Protection Agency and California Public Utilities Commission](#)

¹¹ Moderate income is defined by the CPUC as between 200% and 400% of the federal poverty guidelines, or between \$55,000 and \$111,000 for a family of four.

Figure 4. San José Home Appliance Program incentive count by customer group (through February 10, 2023)



* Legend definitions: for the chart, moderate-income denotes customers with annual incomes between 250% and 400% of federal poverty guidelines; CARE denotes California Alternative Rate for Energy (customers with annual incomes below 200% of the federal poverty guidelines); FERA denotes Family Electric Rate Assistance (customers will annual incomes between 200% and 250% of the federal poverty guidelines); and DAC denotes customers who live in disadvantaged communities as defined by the state.

San José Energy Efficient Business Program

The San José Energy Efficient Business Program¹² offers 80-90% off HVAC, refrigeration, and water heating components and systems and installation. While all San José Clean Energy commercial customers are eligible for the program, Franklin Energy and San José Clean Energy staff are targeting marketing to schools and small and medium businesses, including medical and dental offices, restaurants, convenience stores, and small offices. In-person and direct phone calls are being focused on businesses within disadvantaged communities first and being expanded to the rest of the city as the list of eligible businesses is exhausted. The program takes a concierge approach to customer service, with Franklin Energy program staff helping customers through every step of the process, including offering a free energy audit to identify opportunities, finding a contractor that complies with the CPUC specifications, helping the customer or their contractor apply for the rebates, and providing language assistance in Spanish or Vietnamese. San José Clean Energy aims to serve 300 businesses and nine schools through the program by the end of 2024. As of February 10, 2023, the program has served 20 businesses and is in the process of serving an additional 44 businesses and a school district located in a low-income community.

¹² [San José Energy Efficient Business Program webpage](#) (also available in [Spanish](#) and [Vietnamese](#))

San José Clean Energy can expand its CPUC-funded energy efficiency programs by seeking external funding to serve more customers or further incentivize or add measures that are meaningful to San José residents and businesses. San José received approximately \$830,000 from the Bipartisan Infrastructure Law’s Energy Efficiency Conservation Block Grant. Council could decide to allocate part of that funding to expand San José Clean Energy’s Home Appliance Savings Program and Energy Efficient Business Program.

SJ Cares Program

The SJ Cares program is currently available to customers enrolled in the state’s California Alternative Rate for Energy or Family Electric Rate Assistance discount programs, which provide up to 35% off electricity and gas rates. To qualify for these programs, households must have annual incomes below 250% of the federal poverty guidelines. These customers are automatically enrolled in SJ Cares and receive an additional monthly discount on San José Clean Energy rates. Recognizing that San José’s lowest-income residential customers are disproportionately burdened by high energy bills, the City Council voted on December 6, 2022¹³ to increase the generation rate discount offered to SJ Cares program customers from 5% to 10%, about \$6 per month for the average residential customer. This means SJ Cares customers pay the lowest rates in San José, and their bills will be lower than those of California Alternative Rate for Energy and Family Electric Rate Assistance customers served by the local investor-owned utility. There are approximately 75,000 residential customers currently enrolled in SJ Cares (21% of all customers).

Near-Term Customer Program Recommendations

During calendar years 2023 and 2024, San José Clean Energy will continue to leverage external funding for programs, including new federal and state funding, as San José Clean Energy builds adequate financial reserves. San José Clean Energy will also fund small pilots to test program concepts and delivery models. In the near-term, staff will pursue the programs depicted in Figure 5 and Table 4 below. The total cost for near-term programs is up to \$1-1.2 million, and staff is targeting leveraging up to \$10 million in external funding. Funding for near-term programs will be included in the annual budget request for Fiscal Year 2023-2024.

¹³ [December 6, 2022 Resolution Amending SJCE’s Rate-setting Methodology and Service Options](#)

Figure 5. Recommended Near-Term Programs

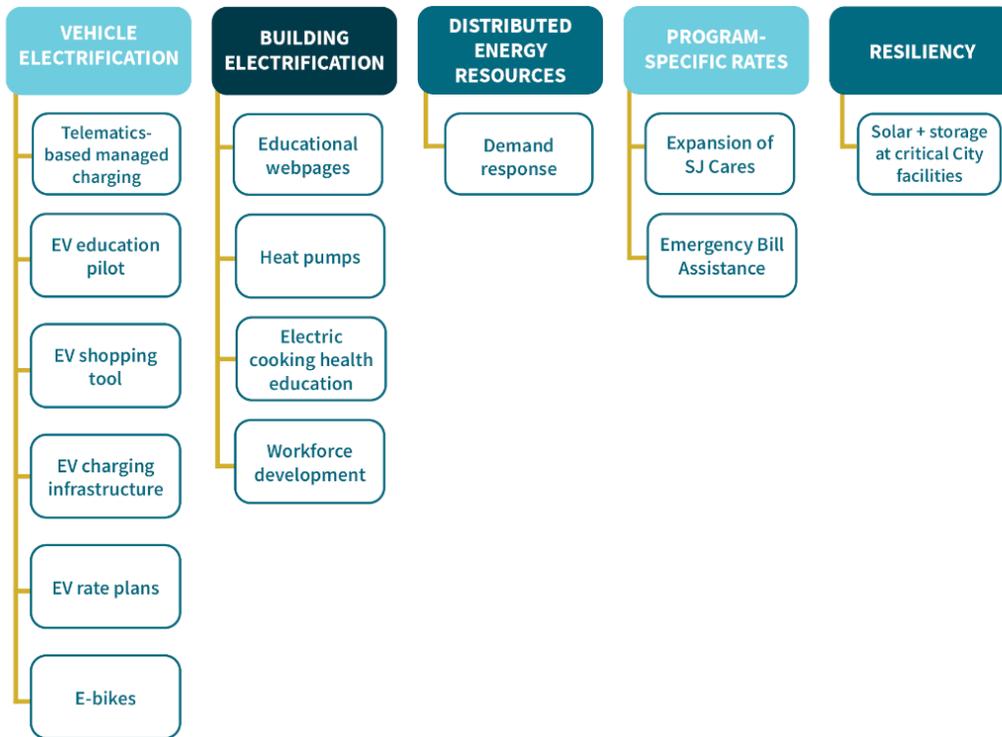


Table 4. Summary of recommended near-term programs

Area	Program Description
Vehicle electrification	Telematics-based managed charging: Shift charging for 500 residential EVs from evening peak and overnight to daytime, when electricity is cleaner and cheaper. Shift 10-12 times per month and during grid emergencies.
	EV education pilot: Test drive events, financial education workshops, and one-on-one assistance applying for incentives targeted to low-adoption neighborhoods, with 3-5 community-based organizations.
	EV shopping tool: Online multilingual website for comparing lifetime costs and emissions for EVs versus gas-powered cars and finding incentives and nearby chargers.
	EV charging infrastructure: Submit \$5 million innovation pilot concept to CPUC to install EV chargers in neighborhoods with low EV adoption and infrastructure.
	EV rate plans: Explore adjusting commercial EV rate to encourage more daytime charging.
	E-bikes: Rebate for low-income households
Building electrification	Educational webpages: Build new webpages on heat pump water heaters, heat pump HVACs, and electric dryers and cooktops, including costs, incentives, permits, testimonials, and bill impacts.
	Heat pump water heater: Leverage \$5 million in CPUC program funding for 500 heat pump water heater installations and panel upgrades.

Building electrification	Electric cooking health education: Educational campaign featuring videos with scientists, chefs, and microinfluencers about electric cooking and the health impacts of natural gas.
	Workforce development: Leverage Silicon Valley Clean Energy’s online contractor training; pay up to \$5,000 to San José participants to install a heat pump at their home or business.
Distributed energy resources	Demand response: Implement demand response programs in four phases, starting with behavioral demand response for targeted commercial customers in summer 2023. Compensate customers for energy savings while lowering SJCE energy procurement costs.
Program-specific rates	SJ Cares expansion: Work with City and County public assistance agencies to explore expanding auto-enrollment in SJ Cares.
	Emergency bill assistance: Provide funds for overdue bill payment to households at risk of falling into homelessness.
Resiliency	Solar+storage at critical City facilities: Work with San José Clean Energy-funded program manager in Public Works to add microgrids to critical City facilities, potentially through a power purchase agreement or feed-in tariff.

Vehicle Electrification

Transportation makes up 51% of San José’s greenhouse gas emissions.¹⁴ San José’s pathway to Carbon Neutrality by 2030 accelerated goals to transition 79-88% of passenger vehicles to electric by 2030 and to reduce commute trips taken in single-occupancy vehicles. Electrifying transportation through the adoption of EVs, electric buses, medium- and heavy-duty vehicles, and e-bikes will be a major factor in reducing emissions. Already, San José is a leader in EV adoption. According to the California Energy Commission, roughly 30% of new cars registered in San José from April to December 2022 were fully electric or plug-in hybrid.¹⁵ With high-adoption cities like San José, California leads the nation in EV registrations and recently became the first state to ban the sale of gas-powered cars and trucks. On August 25, 2022, the California Air Resources Board voted to require 100% of new car and light truck sales to be electric by 2035 to combat climate change.¹⁶

With EV adoption set to grow even more quickly over the next decade, San José Clean Energy is focused on two issues:

1. Managing the additional electric demand from charging to reduce greenhouse gas emissions and improve resiliency
2. Helping ensure equitable EV adoption and access to charging infrastructure

¹⁴ [Climate Smart San José 2019 Communitywide Greenhouse Gas Inventory \(published April 2021\)](#)

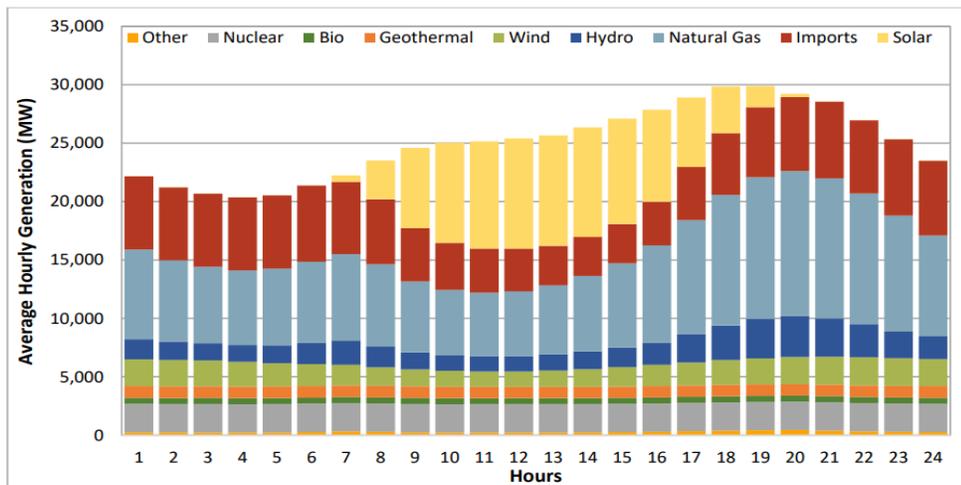
¹⁵ [Zero Emission Vehicle and Infrastructure Statistics](#)

¹⁶ [California Air Resources Board press release August 25, 2022](#)

Managing EV Charging Load

As San José Clean Energy and other California utilities invest in renewable energy (particularly intermittent sources like solar) and storage to meet state climate goals,¹⁷ electricity sources are not uniform throughout the day. There is a large amount of solar on the California grid from sunrise to sunset (Figure 6); however, starting at 4:00 p.m., energy demand significantly increases as solar energy availability decreases. Natural gas is often used to meet the 4:00 p.m. to 9:00 p.m. demand peak when energy prices are also typically the most expensive. While more wind energy is typically available overnight, natural gas and imports are mainly used to meet overnight demand.

Figure 6. California Independent System Operator average hourly power production by resource type – 2020



In the short term, San José Clean Energy aims to *shift more EV charging to the middle of the day to reduce greenhouse gas emissions as well as San José Clean Energy’s energy procurement costs and customer rates*. A 2022 Stanford University study¹⁸ found that most EV drivers should shift charging from peak periods and overnight to daytime charging at work, home, or public charging stations. If EV drivers continue to charge at night, as EV adoption grows the authors project that 5.4 gigawatts¹⁹ of energy storage would be needed just to meet charging demand in the Western U.S. with 50% EV adoption. Shifting charging to the middle of the day would reduce the strain on the grid, lower grid costs, and help ensure abundant clean solar resources are fully utilized.

¹⁷ California Senate Bill 1020 (Laird) requires utilities to provide 90% renewable energy by 2035 and 100% by 2045.

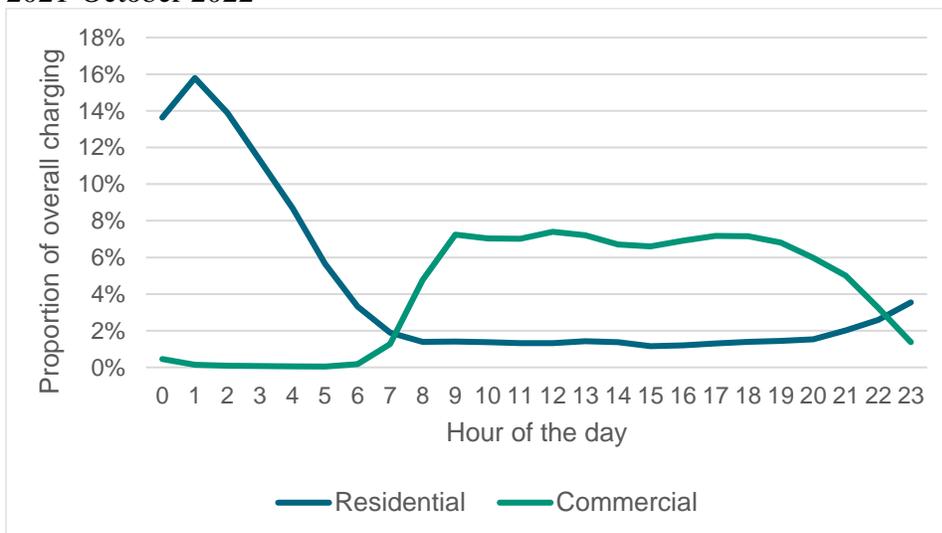
¹⁸ Powell, S., Cezar, G. V., Min, L. et al. [Charging infrastructure access and operation to reduce the grid impacts of deep electric vehicle adoption](#). Nat Energy (2022).

¹⁹ According to the California Independent System Operator, as of June 1, 2022 California has deployed nearly 3.2 gigawatts of utility-scale battery storage.

San José Clean Energy staff examined a year’s worth of electricity usage data for approximately 10,000 residential and 35 commercial customers (standalone chargers) on EV rate plans and found that most residential charging occurs overnight (Figure 7). Most residential San José Clean Energy EV customers respond to the time-of-use price signals in EV rates, where charging overnight from midnight to 3:00 p.m. is the cheapest and charging from 4:00 p.m. to 9:00 p.m. is the most expensive. As more residential customers switch to electric vehicles, San José Clean Energy may see load spikes in the hours after midnight if it doesn’t develop programs to actively manage charging by shifting it to cleaner and cheaper hours for energy procurement and sequencing it to reduce costly spikes. San José Clean Energy can also incentive middle-of-the-day charging by changing electricity rates and time-of-use periods – for example, by adding a super off-peak period in the middle of the day or raising rates on overnight usage. However, there are potential implementation challenges. PG&E manages the electric meters for San José Clean Energy customers and transmits the usage data to San José Clean Energy’s billing provider. Currently, data for billing is not reported on an hourly basis, which would be necessary for changing time-of-use periods and billing appropriately. Staff is exploring alternatives and will work on solutions with PG&E.

While commercial customers have much higher levels of daytime charging, they also tend to charge during the 4:00 p.m. to 9:00 p.m. peak despite a strong price signal disincentivizing usage at this time. San José Clean Energy staff recommend closely monitoring commercial EV charging trends as more customers electrify their fleets, conducting outreach and education to encourage off-peak charging, adjusting the commercial EV rate to incentivize middle-of-the-day charging, and potentially introducing demand response programs for commercial fleets to compensate them for avoiding charging during peak periods.

Figure 7. EV charging distribution in San José by time of day and customer class, November 2021-October 2022



San José Clean Energy staff surveyed residential customers on EV rates (1,600 responses) and found opportunities for shifting charging to the middle of the day:

- Nearly 80% of respondents work from home all or part-time.
- Approximately 80% of charging occurs at home.
- More than 75% of respondents who charge at home do so with a Level 2 charger, creating more charging flexibility due to its faster charging times.
- More than half said they would shift their charging to the middle of the day more often if San José Clean Energy paid them \$1 per daytime charge session.
- Nearly half of the respondents reported that their workplace has chargers.

Equity in EV Adoption and Charging Access

Low-income households have lower EV adoption and little to no access to public charging infrastructure. While the high purchase prices have been a barrier to EV adoption for many, federal and state programs and market forces are making EVs more affordable and accessible for low-income consumers. Low-income consumers can stack federal, state, and local incentives for as high as \$27,000 off the purchase price of a used or new EV (Tables 5-6). Income-qualified households can now claim a federal tax credit of up to \$4,000 for used EVs. Through the Bay Area Air Quality Management District’s Clean Cars for All Program, low-income consumers can receive \$5,500 to \$9,500 plus \$2,000 for public charging if they turn in a car from 2004 or older. Later in 2023, the incentive will increase from \$10,000 to \$12,000.²⁰ On top of the Clean Cars for All and tax incentives, low-income consumers can get \$7,500 off a new EV from the State’s Clean Vehicle Rebate Program.²¹ In mid-2023, the Clean Vehicle Rebate Program will transition from a rebate to a point-of-sale incentive at participating dealerships.²²

Table 5. EV incentive stacking for low-income households for a new EV after Clean Vehicle Rebate Program and Clean Cars for All incentives increase (purchase price as low as \$26,500²³)

Incentive Program	Income Limit	Incentive Amount
Tax credit (federal)	\$150,000 single filers; \$225,000 head of household; \$300,000 joint filers	Up to \$7,500
Clean Vehicle Rebate Program (State)	At or below 400% of federal poverty guidelines	\$7,500 (battery electric) or \$6,500 (plug-in hybrid)
Clean Cars for All (local)	At or below 300% of federal poverty guidelines	\$12,000 (battery electric) or \$11,500 (plug-in hybrid)

²⁰ Households located in zip codes with higher pollution burdens receive the higher incentive amount; this includes 10 ZIP codes in San José. The funding is a pre-purchase grant. The incentive is expected to increase in mid-2023.

²¹ The [Clean Vehicle Rebate Program](#) offers lower incentive amounts (\$1,000-2,000) for higher-income consumers that fall under these income limits: \$135,000 single filers, \$175,000 head of household, and \$200,000 joint filers.

²² [California Air Resources Board Proposed Fiscal Year 2022-2023 Funding Plan for Clean Transportation Incentives](#)

²³ Base model 2023 Chevy Bolt before taxes, fees, and registration. The 2023 Nissan Leaf is also priced under \$30,000.

Total EV incentives	Up to \$27,000 (battery electric) or up to \$25,500 (plug-in hybrid)
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Table 6. EV incentive stacking for low-income households for a used EV after Clean Cars for All incentives increase (purchase price as low as \$10,000)

Incentive Program	Income Limit	Incentive Amount
Tax credit (federal)	\$75,000 single filers; \$112,500 head of household; \$150,000 joint filers	Up to \$4,000
Clean Cars for All (local)	At or below 300% of federal poverty guidelines	\$12,000 (battery electric) or \$11,500 (plug-in hybrid)
Pacific Gas & Electric (PG&E)	At or below 80% of area median income	\$4,000 (battery electric or plug-in hybrid)
Total EV incentives		Up to \$20,000 (battery electric) or \$19,500 (plug-in hybrid)

While supply chain issues have recently reduced supply and driven up used and new EV prices, industry experts believe the market will return to normal in early 2023 and that supply in the used EV market will increase in 2024 and 2025. EV drivers also benefit from lower lifetime fueling and maintenance costs compared with gas-powered vehicles. Electricity costs less than \$2 for the equivalent gallon of gasoline,²⁴ and studies have found 30% lower maintenance costs for EVs at the three-year mark.²⁵ To increase equitable EV adoption, it is important to *inform low-income consumers that stackable incentives and lower lifetime operating costs make EVs more affordable than gas-powered vehicles.*

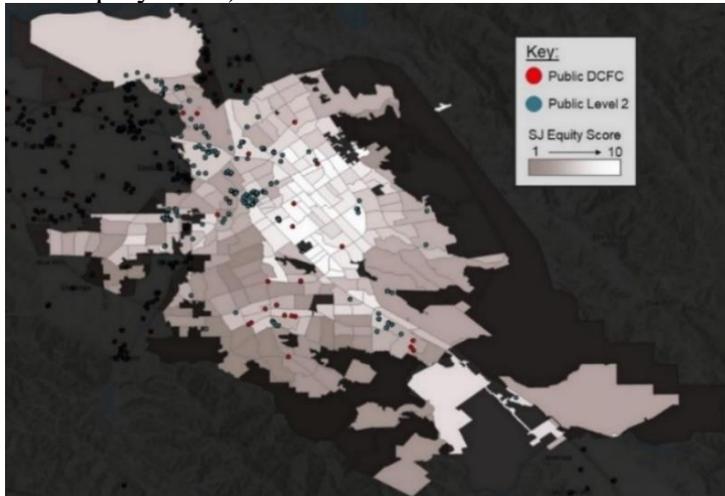
Another issue is charging access. Low-income single-family homeowners and renters may lack the financial resources needed to purchase and install chargers at home. Residents of multi-family housing often do not have control over the upgrades and improvements to the property needed to install chargers. Space and electrical capacity constraints and higher costs may limit the number of chargers that property managers are willing to install in multi-family housing. Public EV charging infrastructure – both Level 2 and fast charging – is currently distributed unevenly and inequitably in San José (Figure 8). The private sector has largely invested in charging infrastructure in high-income areas where EV adoption is highest, creating a feedback loop that exacerbates the charging gap and leaves low-income and communities of color behind. San José Clean Energy’s \$14 million CALeVIP investment with the California Energy Commission is increasing the prevalence of charging infrastructure in low-income and communities of color,²⁶ but *more public investment is needed to close the charging access gap.*

²⁴ [EV electricity rates](#)

²⁵ [CleanTechnica article on maintenance costs](#)

²⁶ [Memorandum to the City Council, October 22, 2019; Project page.](#)

Figure 8. Existing EV charging infrastructure (Data Sources: U.S. Department of Energy, San José Equity Atlas)



Near-term Vehicle Electrification Programs

- **Telematics-based managed charging system:** Telematics-based managed charging systems use software to communicate with the onboard technology and communications systems in electric vehicles to control when they charge. Several CCAs have successfully used telematics to shift some of their residential customers' EV charging from the evening peak (4 p.m. to 9 p.m.) and overnight to low-carbon day-time periods. Silicon Valley Clean Energy's telematics program includes 10-12 low-carbon charging "events" per month when the California grid is forecast to be flush with solar.²⁷ Customers enrolled in the program receive a notification from their telematics smartphone application the day before an event asking them to opt-in to participate and plug in their EVs. Participating customers receive \$1 per event. On top of events, Silicon Valley Clean Energy's telematics program participants saved \$200+ annually on their energy bills by shifting charging to lower cost, off-peak time-of-use periods. CCAs' telematics programs have also improved grid resiliency by shifting charging during Flex Alerts and other grid emergencies.²⁸ During the September 2022 heat wave, 98% of MCE Clean Energy customers enrolled in their telematics program participated in Flex Alert events, resulting in 96% of EV charging, or 5 megawatt-hours, being shifted outside of the daily Flex Alert hours during the 10-day heatwave.²⁹ San José Clean Energy staff has begun

²⁷ Silicon Valley Clean Energy & ev.energy. June 2021. Whitepaper: "[An events-based approach to low-carbon charging.](#)"

²⁸ The California Independent System Operator, which operates the electric grid for most of the state, can call Flex Alerts when it forecasts the potential for demand for electricity to outstrip supply. Flex Alerts are calls to consumers to voluntarily reduce their electricity usage (typically starting at 4 p.m.) and shift it to off-peak hours (normally after 9 p.m.). If Flex Alerts do not lower electricity demand sufficiently, the California Independent System Operator can issue three increasing levels of Energy Emergency Alerts.

²⁹ ev.energy Press Release: October 12, 2022. [Bay Area EV Drivers Helped Prevent Blackouts During 2022 Heat Waves with MCE Load-Shifting Program](#)

procurement for a vendor to conduct a yearlong telematics program starting in 2024 for 500 EVs in San José. Staff will study whether a scaled-up telematics program can cost-effectively shift load and lower procurement costs, the savings from which can be used to lower rates for all customers.

- **EV education pilot:** Staff is planning a residential multilingual EV education pilot for summer 2023 targeted to neighborhoods in San José with low EV adoption. San José Clean Energy will fund three to five community-based organizations to test the effectiveness of a multi-pronged approach to educating households about the affordability of EVs, consisting of small-scale EV test drive events, financial education workshops, and one-on-one assistance navigating and applying for rebates and incentives. Staff will learn from the pilot and if successful, scale the tactics in 2024 in the neighborhoods surrounding San José Clean Energy's fast charging hubs. In addition, staff is planning to conduct outreach to local dealerships to offer help educating salespeople about EV electricity rates and establish partnerships ahead of San José Clean Energy potentially offering an EV incentive for low-income customers.
- **EV shopping tool:** Staff is working with Finance/Purchasing staff on the procurement of an online EV shopping tool for San José Clean Energy residential customers to further drive EV adoption. The tool will be translated into Spanish and Vietnamese and contain a detailed list of new and used electric vehicle makes and models with pricing, photos, range, battery size, cost of ownership, and other attributes. The tool can match cars with users' driving needs. Users can also compare the lifetime costs and greenhouse gas emissions of any EV versus a similar gas-powered car and enter their income and tax filing status to receive a tailored list of rebates and incentives to decrease the purchase price. Finally, users will be able to search any address to find nearby publicly accessible charging. Staff hopes to finalize the tool in 2023 and promote it widely.
- **EV charging infrastructure:** San José Clean Energy is tracking federal and state funding sources to fund the deployment of EV charging infrastructure in coordination with the City's Department of Transportation, Climate Smart, and Intergovernmental Relations teams. In November 2022, the CPUC approved a \$1 billion transportation electrification initiative for investor-owned utilities to install charging infrastructure over the next several years, with a focus on low-income communities and multi-family housing. The program includes \$25 million for CCAs and community-based organizations to propose innovative pilots (maximum \$5 million) for installing charging infrastructure in low-income and disadvantaged communities. Staff is evaluating submitting a pilot proposal, due by the end of 2023. On January 10, 2023, the City Council approved adding a Senior Power Resources Specialist position to San José Clean Energy's Programs Team to identify federal and state electrification funding opportunities, including through the Inflation Reduction Act.
- **EV rate plans:** San José Clean Energy's rate plans for residential and commercial EV customers are time-of-use, meaning the price of electricity varies by the time of day. San

José Clean Energy's time-of-use periods (peak, part peak, off-peak, and super off-peak) mirror those of PG&E's EV rate plans to reduce customer confusion since all customers continue to receive electricity delivery service from PG&E. Staff is exploring adjusting the pricing of the time-of-use periods in the commercial EV rate plans to further incentivize middle of the day charging.

- **E-bikes:** Staff is exploring offering an e-bike rebate program in 2024 for California Alternative Rate for Energy and Family Electric Rate Assistance customers. Staff is targeting an incentive amount that, combined with other incentives, covers most or all of the purchase cost of an average-priced e-bike. It would be stackable with the California Air Resources Board's forthcoming \$10 million e-bike program,³⁰ which will offer a \$1,000 rebate to households with annual incomes under 300% of the federal poverty guidelines. Participants in three Northern California e-bike rebate programs have reported replacing occasional car trips with their e-bikes, leading to an estimated monthly diversion of 12-44 kilograms of CO₂ per rebate participant.³¹ Staff would follow CCA best practices when developing the program design, including issuing a series of surveys to participants to gauge usage over time and satisfaction. This will help to better quantify the greenhouse gas reductions and the overall benefit of the program to the community. Other CCAs have found e-bike programs to be valuable in introducing customers to electrification and encouraging participation in future programs.

Building Electrification

Buildings make up 31% of San José's greenhouse gas emissions, underscoring the need to electrify appliances in homes and businesses. Appliances that use natural gas include furnaces, water heaters, clothes dryers, and ranges. Each of these uses can be replaced by proven, accessible, and efficient electric appliances, such as heat pumps for space heating and cooling (HVAC), heat pump water heaters, electric dryers, and electric stoves, including induction. Switching to electric appliances improves indoor air quality; natural gas appliances can release carbon monoxide, formaldehyde, and other harmful pollutants into the air. A study by Lawrence Berkeley National Lab found that 60% of homes in California that cook at least once a week with a gas cooktop can reach pollutant levels that would be illegal if found outdoors.³² While these electric appliances typically cost more than their natural gas counterparts, their efficiency coupled with high natural gas prices leads to savings over the lifetime of the appliance. A recent PG&E analysis of customer bills found that the average customer in San José's climate zone

³⁰ [California Air Resources Board Proposed Fiscal Year 2022-2023 Funding Plan for Clean Transportation Incentives](#)

³¹ Johnson, N., Fitch-Polse, D., & Handy, S. (2023). Impacts of E-bike Ownership on Travel Behavior: Evidence from three Northern California rebate programs. UC Davis: National Center for Sustainable Transportation. Retrieved from <https://escholarship.org/uc/item/5kb4b8jx>

³² Logue JM, Klepeis NE, Lobscheid AB, Singer BC. 2014. Pollutant exposures from natural gas cooking burners: a simulation-based assessment for Southern California. *Environ Health Perspectives* 122:43–50; <http://dx.doi.org/10.1289/ehp.1306673>

saved \$122 annually switching from a gas-powered water heater to a heat pump water heater.³³ However, older homes may require an update to their electrical panel to allow these appliances to be installed, as well as for other distributed energy resources like solar, battery storage, and level 2 EV chargers.

The health and air quality impacts of gas-powered appliances have led local, state, and federal agencies to consider requiring electric space and water heaters in new construction and existing buildings. In March, the Bay Area Air Quality Management District will vote to ban the sale of space and water heaters that emit nitrogen oxides:³⁴

- 2027 – only zero-nitrogen oxide water heaters can be sold or installed
- 2029 – only zero-nitrogen oxide furnaces can be sold or installed
- 2031 – only zero-nitrogen oxide commercial water heaters can be sold or installed

Currently, the only zero-nitrogen oxide space and water heating appliances are electric. Ahead of potential bans, federal and state agencies are launching incentives to encourage homeowners to switch to electric appliances. Staff recommends developing *programs that promote and leverage new federal and state incentives for building electrification and help train local contractors on heat pump technologies*. In 2023, four federal and state initiatives will launch to accelerate residential adoption of heat pump HVACs and heat pump water heaters by decreasing costs and covering electrical panel upgrades:

1. **Federal High-Efficiency Electric Home Rebate (HEEHR) program:** Through this forthcoming Inflation Reduction Act program, households making 150% of the area median income (about \$250,000 for a family of four) or lower can get rebates for heat pumps and other appliances as well as energy efficiency projects. Households making between 80% and 150% of the area median income can get rebates for 50% of project costs, while households making under 80% of the area median income can get rebates for 100% of project costs, up to the maximum rebate amount (Table 6). The program has a \$4.275 billion budget that will be distributed to states for implementation. The state of California will set up the program in late 2023 or 2024, and funding will be available through 2031.³⁵
2. **Inflation Reduction Act federal tax credits:** All households can qualify for increased tax credits for heat pumps and energy efficiency projects starting in tax year 2023 (Table 7).
3. **CPUC Self-Generation Incentive Program (SGIP):** By mid-2023, the SGIP program is expected to launch heat pump water heater and electrical panel upgrade rebates for all households, with higher incentives for households making 80% of area median income (about \$134,000 for a family of four) or lower (Table 8). The total heat pump water heater program budget is \$84.7 million.³⁶

³³ [CPUC Resolution E-5233](#) of net electric and gas bill impact studies for customers switching from a natural gas water heater to an electric heat pump water heater

³⁴ [Bay Area Air Quality Management District Rules 9-4 and 9-6 Building Appliances](#)

³⁵ [Rewiring America: High-Efficiency Electric Homes Rebate Act](#)

³⁶ [CPUC SGIP Heat Pump Water Heater Program Final Decision 22-04-036, Rulemaking 20-05-012](#)

4. **TECH Incentives:** In early 2023, the state is expected to launch the next round of TECH incentives for contractors to become familiar with installing heat pumps.³⁷ Contractors can get \$1,000 for each heat pump HVAC installation. The state’s TECH program budget is \$145 million through 2024.

Table 7. Building electrification consumer rebates under the Inflation Reduction Act Homes Rebate Program and tax credits

Project	HEEHR Program Maximum Rebate Amount	Inflation Reduction Act Annual Tax Credits
Heat pump water heater	\$1,750	30% of project costs, capped at \$2,000
Heat pump HVAC	\$8,000	
Electric stove	\$840	Not offered
Heat pump dryer	\$840	
Electrical panel upgrade	\$4,000	30% of project costs, capped at \$600, if upgraded with heat pump or solar installation
Insulation, air sealing, and ventilation	\$1,600	30% of project costs, capped at: <ul style="list-style-type: none"> • Insulation and air sealing: \$1,200 • Exterior doors: \$250 per door, \$500 total • Windows: \$600 • Energy audits: \$150
Wiring	\$2,500	Not offered

Table 8. SGIP Heat Pump Water Heater Rebates

	Heat pump water heater	Electrical panel upgrade	Total
Standard incentive	Up to \$5,300*	\$2,000	\$7,300
Increased incentives (<80% area median income)	Up to \$6,385*	\$4,000	\$10,385

*Two incentive kickers are added if the customer chooses a heat pump water heater with low-global warming potential refrigerants and a 50-gallon capacity.

BayREN, the Regional Energy Network for the Bay Area, will continue to offer energy efficiency and electrification incentives to single-family and multi-family households. In total, income-qualified single-family households will be able to take advantage of more than \$26,000 in local, state, and federal funding to electrify their homes and improve energy efficiency. Staff will promote building electrification incentives on San José Clean Energy’s website and social media and share information with departments and Council Offices to help build consumer awareness. San José Clean Energy also collaborates with the Environmental Services

³⁷ In the first phase of TECH incentives in 2022, the contractor was not obligated to pass on the incentive to the consumer via lower prices.

Department and the Climate Smart team on building electrification and will coordinate seeking federal, state, and local funding to support building electrification programs that address gaps or barriers and test innovative program delivery models.

Near-term Building Electrification Programs

- **Educational webpages:** Staff is in the process of revamping San José Clean Energy’s Electric Homes webpage³⁸ to expand it into a set of educational webpages in English, Spanish, Vietnamese, and Chinese on heat pump HVACs, heat pump water heaters, electric dryers, and electric stoves. Each subpage will explain how each technology works and its efficiency and could include average project costs, a list of rebates and incentives, a bill impact calculator, installation considerations (e.g., needing a 220-volt outlet when switching from a gas to an induction stove), permit information, and a list of nearby experienced contractors. Staff aims to complete the webpages by mid-2023.
- **Heat pumps water heaters:** SGIP is typically structured as a rebate program; the customer fronts the cost of the upgrade and gets reimbursed after showing proof of installation. This can be a barrier to participation for low-income households that may not have the financial means to front a \$10,000 home upgrade. Staff is exploring offering a heat pump water heater program in 2024 that pays for low-income customers’ equipment, installation, and panel upgrade, if needed, then collects their rebate from the State. Staff expects that the SGIP incentive would fully cover the costs for most projects. San José Clean Energy could design the program to include funding a program implementer to help with project coordination, customer service, and contractor recruitment as well as potentially covering any project costs above the SGIP incentive amount. For 500 participants, staff estimates leveraging approximately \$5 million in CPUC funding. San José Clean Energy staff will continue to coordinate with the Environmental Services Department and the Climate Smart team on measuring the impact of this program delivery model relative to the BlocPower retrofit accelerator program. The program is estimated to reduce CO₂ emissions by 8,200 metric tons over a 15-year heat pump lifetime. The installed heat pumps would collectively consume an additional 35 megawatt-hours of electricity on an annual basis.
- **Electric cooking health education:** Staff is coordinating with Environmental Services Department staff to develop a campaign in 2023 and 2024 highlighting the health and efficiency benefits of electric cooking, including less expensive equipment such as portable induction cooktops, electric kettles, and pressure cookers. Staff is exploring creating a video with Lawrence Berkeley National Lab measuring indoor air quality, supporting the development of more microinfluencer and local chef cooking videos for social media,³⁹ and contracting with local chefs for virtual or in-person electric induction cooking classes. These tactics would occur in conjunction with the promotion

³⁸ [Electric Homes](#) webpage (also available in [Spanish](#) and [Vietnamese](#))

³⁹ [Local Chef Genaro Mendez cooks on induction](#); [Bay Area influencer ShanBerries cooks on induction](#)

of the Environmental Services Department’s portable induction cooktop loaner program, San José Clean Energy’s induction range discount in the San José Home Appliance Savings Program, and BayREN’s induction range discount.⁴⁰

- **Workforce development:** Staff is exploring offering a workforce development program in 2023 or 2024 to help San José contractors become more familiar with heat pump technologies. Homeowners often value the opinion of their contractor and increasing contractors’ familiarity with heat pump technology can lead to more recommendations and installations. Staff recommends building off the workforce development program developed by Silicon Valley Clean Energy, the CCA that serves the rest of Santa Clara County. Silicon Valley Clean Energy offers an online course on all-electric technologies to contractors in the South Bay, as well as up to \$5,000 to course participants to install clean energy technologies in their home or business.⁴¹ While San José contractors currently are eligible to take the training, they are not able to receive funding for an installation project. Staff recommends offering an incentive for San José contractors to install a heat pump water heater or heat pump HVAC, translating the training into Vietnamese, and increasing program marketing to San José contractors, including Spanish, Vietnamese, and Chinese-speaking contractors.

Distributed Energy Resources

Distributed energy resources are resources on the customer side of the utility meter (or “behind the meter”), such as rooftop solar, battery storage, and demand response. This is in contrast to utility-scale solar, wind, batteries, and other energy sources located in “front of the meter.”

Over the past decade, California’s investments in solar power have resulted in an abundance of electricity during daylight hours. This abundance very quickly turns into a shortfall as the sun begins to set. To maintain grid stability, the state needs to bring gigawatts of capacity online within minutes. Solutions like hydropower (dams) are carbon-free and easily switched on or off, but the water storage needed to generate this electricity is not always available, especially in a state plagued by drought and summer water shortages. Peaking power plants, which are natural gas power plants specifically designed for quick start-up, are another option but are highly polluting and have been unreliable in recent extreme weather events.⁴² Typically, these power plants pollute over 50% more than their efficient counterparts, wasting fuel and increasing costs. In addition to greenhouse gas emissions, peaker plants are a primary source of local pollution for nearby communities, which are typically inhabited by low-income households and people of color.⁴³

Increasing supply is not the only way to meet electricity demand during these critical times of the day; paying customers to reduce their electricity usage is a cost-effective way to meet demand

⁴⁰ [BayREN induction range and cooktop rebates](#)

⁴¹ [Silicon Valley Clean Energy FutureFit Fundamentals](#)

⁴² [Politico: “Old clunkers: California power plans break down during heat wave”](#)

⁴³ [“Natural gas power plants in California’s disadvantaged communities,” PSE Healthy Energy research brief \(2017\)](#)

while reducing greenhouse gas emissions. Demand response programs call on residents and businesses to reduce their energy use during energy-saving events, which can occur throughout the year when market prices for electricity are high or during grid emergencies when overall demand is projected to be greater than what is available.

San José Clean Energy elected to participate in the state's 2022 Emergency Load Reduction demand response pilot program for residential customers. PG&E operates the Emergency Load Reduction program for San José and automatically enrolled approximately 150,000 San José Clean Energy customers in 2022. Residential and commercial customers are paid \$2 per kilowatt-hour of energy saved during grid emergencies called by the California Independent System Operator and are not penalized for not saving energy. The pilot will continue through 2025, and San José Clean Energy can elect to participate each year. Staff is unable to evaluate the impacts from the program as investor-owned utilities have elected not to share any participation or energy savings data. San José Clean Energy plans to participate again in 2023, and as a result, PG&E will automatically enroll approximately 125,000 residential customers. San José Clean Energy will likely not participate in the Emergency Load Reduction program in 2024 as it aims to offer its own demand response program.

Near-term Distributed Energy Resources Programs

- **Demand Response:** In fall 2022, San José Clean Energy hired a consultant to prepare a long-term demand response program strategy that identifies the costs, benefits, requirements, and ideal pathway. The consultant found that the benefits and avoided costs of a demand response program to San José Clean Energy likely outweigh the program implementation costs by more than \$300,000. The program strategy involves a three-phase approach that increasingly reduces peak demand and ensures all customers can participate and receive benefits (Table 9). Staff recommends launching Phase 1A in summer 2023 targeted to a subset of top commercial users and subsequently implementing a larger Phase 1B in 2024 and Phase 2 and Phase 3 in one- to two-year increments thereafter. Staff is exploring requesting funding from the \$295 million California Energy Commission's Demand Side Grid Support program, which provides incentive payments of \$2 per kilowatt-hour reduction and annual reimbursement of up to \$5 million in administrative costs. The demand response strategy will inform a 2023 Request for Proposals for a program administrator for Phase 1B through Phase 3. San José Clean Energy's consultant estimates that a full Phase 1 implementation can achieve 14 megawatts of peak demand reduction.

Table 9. Proposed Demand Response Program Phases

Proposed Design	Description	Target Audiences	Event details and enrollment	Customer incentive
Phase 1A (2023) – Behavior-Based Demand Response	Participants take action to reduce consumption (e.g., pre-cooling buildings, turning off lights, shifting energy intensive operations)	Targeted commercial customers	Advance notice provided; targeted outreach to select customers, elect to enroll in the program	\$ per kilowatt-hour reduced
Phase 1B (2024) – Behavior-Based Demand Response	Participants take action to reduce consumption (e.g., turning off air conditioners, lights, avoiding appliances)	Residential customers with highest usage, low-income residential customers, and all commercial customers	Advance notice provided; some customer groups automatically enrolled but can opt out; any customer can enroll	\$ per kilowatt-hour reduced; No penalty for non-participation
Phase 2 – Automated Demand Response & Load Shaping	Smart technology (thermostats, smart plugs) are wirelessly sent a signal and automatically power down; wirelessly discharging customers’ battery storage systems onto the grid	Any home or business with eligible devices, battery storage, or heat pump water heaters with smart controls	No advance notice; maximum three events per month; targeted outreach to select customers, elect to enroll in the program	\$ per kilowatt-hour reduced; Free low-cost smart devices; Possible storage rebates
Phase 3 – Load Shaping	Managing peaks by making adjustments to industrial-sized equipment and wirelessly powering down EV chargers or discharging customers’ EV batteries	Large offices, fast charging hubs, commercial EV fleets, residential homes with EVs	No advance notice; maximum three events per month; targeted outreach to select customers, elect to enroll in the program	\$ per kilowatt-hour reduced; possible charger rebate

Program-Specific Rates

San José Clean Energy is aligned with the City of San José’s goals to advance racial equity, end homelessness, and improve quality of life. Electricity is a critical utility service and a basic human need. Low-income households bear a disproportionate burden of energy bills; these households not only spend a higher portion of their income each month on energy but often live in less energy-efficiency homes and lack access to energy-saving technologies. As customers fall behind on bills, they run the risk of disconnection. Disconnections have a disparate impact on low-income communities and communities of color and can be detrimental to health. For example, customers may be reliant on electricity for medical devices and life-supporting systems. Once power is shut off, vulnerable customers may use hazardous methods to heat, cool,

or light their homes, such as candles or generators, which can have harmful and even fatal results.⁴⁴ California's moratorium on disconnections during the pandemic was lifted in 2022. San José Clean Energy is tracking customers with missed payments and determining the best way to intervene in PG&E's disconnections process to provide these customers with resources and avert disconnection. In the San Diego region, the San Diego State University Social and Economic Vulnerabilities Initiative found that utility assistance helps the people utilizing it stay housed.⁴⁵

Near-term Program-Specific Rates

- **Expansion of SJ Cares:** While 22% of customers are enrolled in the SJ Cares discount program, San José Clean Energy believes there are many low-income families in San José falling above the income threshold yet still in need of bill support. San José Clean Energy will explore expanding automatic enrollment by working with City departments and/or Santa Clara County agencies that administer public assistance programs to receive lists of their San José clients developing an approach to enroll them in SJ Cares. If this approach proves feasible, San José Clean Energy staff will return to Council to propose program expansion, customer segments, and financial impact.
- **Emergency Bill Assistance:** San José Clean Energy is exploring funding an existing local public assistance program to help households at risk of homelessness pay their electricity bill. The funding would also be used to help the public assistance program promote existing programs available to lower-income customers to save money and energy, such as California Electric Rate Assistance and Low-Income Home Energy Assistance Program. If feasible, San José Clean Energy staff will return to Council with a budget, timeline, and partner agency.

Resiliency

San José Clean Energy recommends seeking federal funding to build local resiliency through the development of local generating sources, such as solar and storage, with an initial focus on critical facilities. The Bipartisan Infrastructure Law created \$9 billion in funding for smart grid implementation. This could include City of San José facilities or community-based organizations that provide critical social services.

Near-term Resiliency Programs

- **Solar + storage at critical City facilities:** San José Clean Energy is funding a program manager in the Public Works Department to apply for funding and implement solar and storage at critical City facilities such as community centers and fire stations. San José Clean Energy staff is available to advise on technologies and contract structures, identify sites, assist with Request for Proposals development and scoring, and conduct outreach to developers. San José Clean Energy could also help finance the projects or purchase

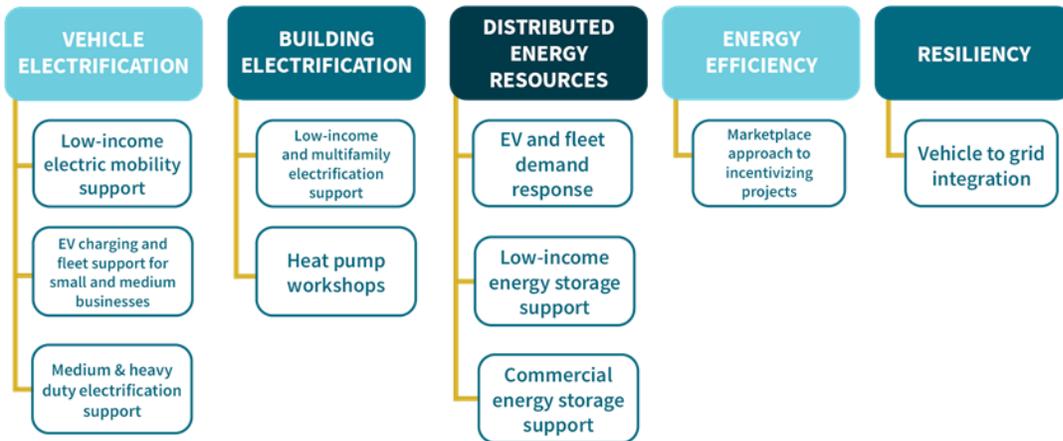
⁴⁴ [NAACP report \(2017\): Lights Out in the Cold](#)

⁴⁵ [SEVI report \(2020\): The Impact of Utility Assistance on Keeping People Housed](#)

power from the projects via a sleeved power purchase agreement and recommends evaluating utilizing purchase power agreements or feed-in tariffs as contract methods.

Future Customer Program Recommendations

Figure 9. Recommendations for Future Programs



San José Clean Energy’s recommended future programs depicted in Figure 9 build off current and near-term programs and incorporate lessons learned. Over the next few years, San José Clean Energy will continue to seek external funding for programs, collaborate with the Climate Smart team, survey CCAs’ emerging innovative programs, complete additional cost-benefit analyses, conduct stakeholder engagement, and iterate on program design. In the long term, San José Clean Energy recommends programs that focus on low-income and difficult-to-reach customers and communities to ensure they are benefiting from clean energy technologies and not left behind in the transition to electrification.

COORDINATION

This memorandum has been coordinated with the City Attorney’s Office, the City Manager’s Budget Office, the Environmental Services Department, and the Department of Transportation.

/s/
 Lori Mitchell
 Director, Community Energy

For questions, please contact Kate Ziemba, Senior Environmental Program Manager at kate.ziemba@sanjoseca.gov.

APPENDIX

Appendix A – History of Council actions related to San José Clean Energy customer programs

ATTACHMENT

Attachment A – San José Clean Energy Programs Roadmap accepted by City Council on March 9, 2021

Appendix A: History of Council actions related to San José Clean Energy customer programs

On August 8, 2017, City Council approved an ordinance establishing a Community Choice Aggregation program to be named San José Clean Energy and amending Title 26 of the San José Municipal Code (Code) to create the Community Energy Department of the City of San José to manage the CCA program. Under the adopted Title 26, sections 26.40.010 and 26.40.040 of the Code, San José Clean Energy may provide any energy efficiency, rate assistance, and other energy programs as approved by the City Council. In addition, under section 2.04.4620.E, the Director of the Community Energy Department shall “[d]evelop and implement local energy efficiency, renewable energy, and other energy programs.”

In February 2018, the City of San José was one of the first U.S. cities to adopt a Paris Agreement-aligned climate action plan, named Climate Smart San José. This is a data-driven plan with goals and actions focused on three components: energy, mobility, and water. It details not only ways to reduce the city’s carbon footprint but also to improve the quality of life for those who live and work in San José.

On May 15, 2019, San José Clean Energy provided an update to the Transportation and Environment Committee on the community energy programs planning process.

On October 22, 2019, the City Council approved the implementation of CALeVIP in San José and San José Clean Energy’s participation in it. Council also authorized the Director of San José Clean Energy to execute an agreement with the Center for Sustainable Energy to administer up to \$4 million in San José Clean Energy funds for the implementation of CALeVIP through December 31, 2023.

On January 14, 2020, City Council Accepted the Electric Mobility Roadmap, a short-term strategic plan for electrifying transpiration in San Jose.

On March 2, 2020, San José Clean Energy provided an update to the Transportation and Environment Committee on San José Clean Energy’s preliminary program roadmap that detailed the initial programs San José Clean Energy recommends offering based upon guiding principles and objectives.

On October 5, 2020, San José Clean Energy provided an update to the Transportation and Environment Committee on San José Clean Energy’s program roadmap.

On November 17, 2020, the City Council authorized the Director to prepare and submit an Advice Letter to the CPUC to administer the Disadvantaged Communities-Green Tariff program.

On March 9, 2021, the City Council accepted San José Clean Energy’s Programs Roadmap, authorized the Director to prepare and submit an Advice Letter to the CPUC to Administer “Elect to Administer” Energy Efficiency Programs and authorized the City Manager to accept funds from the CPUC for administering the energy efficiency programs.

HONORABLE MAYOR AND CITY COUNCIL

February 13, 2023

Subject: San José Clean Energy Programs Roadmap Update

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On November 5, 2021, the City Council voted to adopt a carbon neutral by 2030 goal, making San José the largest U.S. city to adopt such a goal.

On April 4, 2022, the Transportation and Environment Committee accepted a report on the status of the San José Clean Energy Programs Roadmap Update.

On June 14, 2022, City Council approved the Pathway to Carbon Neutrality by 2030 plan which set out four strategies to achieve the City's goal, including moving to zero-emission vehicles and switching appliances from fossil fuels to electric.

On November 15, 2022, the City Council authorized the City Manager or her designee to negotiate and execute tolling agreement(s) with vendor(s) to deploy one to three fast charging hubs at City-owned or privately-owned sites located in low-income and disadvantaged communities in FY 2023-24 or FY 2024-25.