



UTILITIES ADVISORY COMMISSION
Regular Meeting
Wednesday, July 05, 2023
Council Chambers & Hybrid
6:00 PM

Pursuant to [AB 361](#) Palo Alto City Council meetings will be held as “hybrid” meetings with the option to attend by teleconference/video conference or in person. To maximize public safety while still maintaining transparency and public access, members of the public can choose to participate from home or attend in person. Information on how the public may observe and participate in the meeting is located at the end of the agenda. Masks are strongly encouraged if attending in person. The meeting will be broadcast on Cable TV Channel 26, live on YouTube <https://www.youtube.com/c/cityofpaloalto>, and streamed to Midpen Media Center <https://midpenmedia.org>.

VIRTUAL PARTICIPATION [CLICK HERE TO JOIN](https://cityofpaloalto.zoom.us/j/96691297246) (https://cityofpaloalto.zoom.us/j/96691297246)
Meeting ID: 966 9129 7246 Phone: 1(669)900-6833

PUBLIC COMMENTS

Public comments will be accepted both in person and via Zoom for up to three minutes or an amount of time determined by the Chair. All requests to speak will be taken until 5 minutes after the staff’s presentation. Written public comments can be submitted in advance to UACPublicMeetings@CityofPaloAlto.org and will be provided to the Council and available for inspection on the City’s website. Please clearly indicate which agenda item you are referencing in your subject line.

PowerPoints, videos, or other media to be presented during public comment are accepted only by email to UACPublicMeetings@CityofPaloAlto.org at least 24 hours prior to the meeting. Once received, the Clerk will have them shared at public comment for the specified item. To uphold strong cybersecurity management practices, USB’s or other physical electronic storage devices are not accepted.

TIME ESTIMATES

Listed times are estimates only and are subject to change at any time, including while the meeting is in progress. The Commission reserves the right to use more or less time on any item, to change the order of items and/or to continue items to another meeting. Particular items may be heard before or after the time estimated on the agenda. This may occur in order to best manage the time at a meeting or to adapt to the participation of the public.

CALL TO ORDER 6:00 pm - 6:05 pm

AGENDA CHANGES, ADDITIONS AND DELETIONS 6:05 pm - 6:10 pm

The Chair or Board majority may modify the agenda order to improve meeting management.

PUBLIC COMMENT 6:10 pm - 6:25 pm

Members of the public may speak to any item NOT on the agenda.

APPROVAL OF MINUTES 6:25 pm - 6:30 pm

1. Approval of the Minutes of the Utilities Advisory Commission Meeting Held on June 7, 2023

UTILITIES DIRECTOR REPORT 6:30 pm - 6:45 pm

NEW BUSINESS (a 10 minute break will be imposed during this section)

2. Staff Requests the Utilities Advisory Commission Recommend the City Council Approve Participation in the GoGreen Home Energy Financing Program in an Amount Not-to-Exceed \$2 Million over a Term of up to Five Years, Funded by the City's Cap and Trade Reserve, by Authorizing the City Manager or Their Designee to Execute a Memorandum of Agreement with the California Alternative Energy and Advanced Transportation Financing Authority (ACTION 6:45 pm – 7:15 pm) Staff: Shiva Swaminathan
3. Discussion of Electric Supply Portfolio Modeling Results (ACTION 7:25 pm – 8:05 pm) Staff: Jim Stack, PhD

COMMISSIONER COMMENTS AND REPORTS FROM MEETINGS/EVENTS

FUTURE TOPICS FOR UPCOMMING MEETING - August 02, 2023

ADJOURNMENT

SUPPLEMENTAL INFORMATION

The materials below are provided for informational purposes, not for action or discussion during UAC Meetings (Govt. Code Section 54954.2(a)(3)).

INFORMATIONAL REPORTS

4. Informational Report for the Utilities Quarterly Report for FY23-Q3

12-Month Rolling Calendar

Public Letters to the UAC

PUBLIC COMMENT INSTRUCTIONS

Members of the Public may provide public comments to teleconference meetings via email, teleconference, or by phone.

1. **Written public comments** may be submitted by email to UACPublicMeetings@cityofpaloalto.org.
2. **Spoken public comments using a computer** will be accepted through the teleconference meeting. To address the Council, click on the link below to access a Zoom-based meeting. Please read the following instructions carefully.
 - You may download the Zoom client or connect to the meeting in- browser. If using your browser, make sure you are using a current, up-to-date browser: Chrome 30 , Firefox 27 , Microsoft Edge 12 , Safari 7 . Certain functionality may be disabled in older browsers including Internet Explorer.
 - You may be asked to enter an email address and name. We request that you identify yourself by name as this will be visible online and will be used to notify you that it is your turn to speak.
 - When you wish to speak on an Agenda Item, click on “raise hand.” The Clerk will activate and unmute speakers in turn. Speakers will be notified shortly before they are called to speak.
 - When called, please limit your remarks to the time limit allotted. A timer will be shown on the computer to help keep track of your comments.
3. **Spoken public comments using a smart phone** will be accepted through the teleconference meeting. To address the Council, download the Zoom application onto your phone from the Apple App Store or Google Play Store and enter the Meeting ID below. Please follow the instructions B-E above.
4. **Spoken public comments using a phone** use the telephone number listed below. When you wish to speak on an agenda item hit *9 on your phone so we know that you wish to speak. You will be asked to provide your first and last name before addressing the Council. You will be advised how long you have to speak. When called please limit your remarks to the agenda item and time limit allotted.

CLICK HERE TO JOIN Meeting ID: 966 9129 7246 Phone:1-669-900-6833

Americans with Disability Act (ADA) It is the policy of the City of Palo Alto to offer its public programs, services and meetings in a manner that is readily accessible to all. Persons with disabilities who require materials in an appropriate alternative format or who require auxiliary aids to access City meetings, programs, or services may contact the City’s ADA Coordinator at (650) 329-2550 (voice) or by emailing ada@cityofpaloalto.org. Requests for assistance or accommodations must be submitted at least 24 hours in advance of the meeting, program, or service.



Utilities Advisory Commission Staff Report

From: Dean Batchelor, Director Utilities
Lead Department: Utilities

Meeting Date: July 5, 2023
Staff Report: 2306-1706

TITLE

Approval of the Minutes of the Utilities Advisory Commission Meeting Held on June 7, 2023

Note: June 7, 2023 UAC Draft Minutes page 5, paragraph 2, line 2, "...were about 150 meters in the area..." should be "*...were about 187 meters in the area...*"

Note: June 7, 2023 UAC Draft Minutes page 5, paragraph 3, line 3, "Per his recollection, the \$12M bid was for..." should be "*Per his recollection, the \$24M bid was for...*"

RECOMMENDATION

Staff recommends that the UAC consider the following motion:

Commissioner _____ moved to approve the draft minutes of the June 7, 2023 meeting as submitted/amended.

Commissioner _____ seconded the motion.

ATTACHMENTS

Attachment A: June 7, 2023 DRAFT UAC Minutes

AUTHOR/TITLE:

Jenelle Kamian, Program Assistant I



UTILITIES ADVISORY COMMISSION MEETING MINUTES OF JUNE 7, 2023 REGULAR MEETING

CALL TO ORDER

Chair Segal called the meeting of the Utilities Advisory Commission (UAC) to order at 6:06 p.m.

Present: Chair Segal, Commissioners Croft, Forssell, Mauter, Metz, and Phillips

Absent: Vice Chair Scharff

AGENDA CHANGES, ADDITIONS AND DELETIONS

None

PUBLIC COMMENT

None

APPROVAL OF MINUTES

ITEM 1: ACTION: Approval of the Minutes of the Utilities Advisory Commissioner Meeting Held on May 3, 2023

Chair Segal invited comments on the May 3, 2023 UAC draft meeting minutes.

ACTION: Commissioner Phillips moved to approve the draft minutes of the May 3, 2023 meeting as submitted.

Commissioner Metz seconded the motion.

Motion carries 6-0 with Chair Segal, Commissioners Croft, Forssell, Mauter, Metz, and Phillips voting yes.

Vice Chair Scharff absent.

UTILITIES DIRECTOR REPORT

Dean Batchelor, Utilities Director, delivered the Director's Report.

Utilities Rates Update: Approved rate changes take effect July 1. Customers received a postcard in the mail about the San Francisco Public Utilities Commission (SFPUC) pass-through rate. Water rates increased 5%, electric rates decreased 5%, gas rates increased 8%, wastewater increased 9%, refuse rate change was 0%, and storm drains increased 4%, resulting in a 3% (\$11.70) total rate increase from last year. City Council approved gas and electric rate changes in a May Study Session. Staff will present the proposed rate adjustments on Monday, June 19 to City Council for utilities other than gas and electric.

SFPUC Pass-Through Rate: On May 9, 2023, the SFPUC voted to increase the wholesale water rate and CPAU will pass it through the W-1, W-2, W-4, and W-7 rates effective July 1.

Final Winter Rebates Distributed for Residential Utility Customers: CPAU distributed a total of \$2,379,520.00 winter rebates for 25,422 customer accounts (\$2,217,820.00 fixed rebate based on January bills, \$99,100.00 for Rate Assistance Program participants, and \$62,600.00 for customers with arrearages). We have not received any applications for the one-time high bill financial assistance program, which closes at the end of October 2023. An email was sent to customers with arrearages. There is information on cityofpaloalto.org/utilitiesassistance.

Natural Gas Rates: Natural gas commodity prices this winter were above \$5 per therm. Per City policy, CPAU capped customer prices at \$4 per therm. Gas prices declined about 29% to \$0.36 per therm, which aligned with the seasonal trend and expected to remain consistent throughout the summer.

Water Quality Report: Each year, CPAU publishes an annual Consumer Confidence Report on water quality conditions for the previous year. Customers will be notified this month that the 2022 report update is available online and in print upon request. The full report is available at cityofpaloalto.org/WaterResources.

Hydroelectricity Supply Update: Hydroelectric supplies are doing well. Snow levels are approximately 125% of the average for 2024. If we receive average rainfall for 2024 starting in October, we expect average hydroelectricity generated in FY 2025.

Drought Update: The SFPUC continues to have an 11% voluntary water use reduction. Staff expected the City would lift the 2-day per week watering restriction when the State's emergency regulation expires in June. The State would likely leave some restrictions in place, including restrictions on watering within 48 hours of a rain event and a ban on irrigating nonfunctional turf with potable water at commercial customer sites.

Upcoming Events: Details and registration at cityofpaloalto.org/workshops

- Saturday, June 24: Spring Planting Workshop, 10 a.m. - noon
- Thursday, June 29: Rain Garden Workshop, 7 - 8:30 p.m.
- Thursday, July 6: Save Money with an EV and EV Discount Campaign, 5 - 6 p.m.
- Saturday, July 15: MSC Open House, 9 a.m. - 2 p.m. The City will host an open house at the Municipal Services Center (MSC) located on Bayshore. Utilities will have a helicopter this year on behalf of the airport. Utilities usually take one side of the MSC yard to display our big trucks and equipment. We will have EVs as we did last year. We will advertise in local newspapers and send email blasts. We will hang signage at the MSC high enough for people to see it from the freeway. The day of the event, we usually raise the banner as you enter the MSC gates. It is a free event for the public to attend.

Commissioner Mauter wondered what additional outreach measures we might take as a community to reach people who are in arrears or who have not applied for assistance. Mr. Batchelor replied that staff directly called customers in arrears to let them know there is financial aid.

Commissioner Phillips asked if customers contacted Utilities with complaints or questions about the rebate. He found his utility bill hard to understand. It looked like we subtracted and added the rebate. The message about the rebate was in small type in the second paragraph. Mr. Batchelor responded that they have received some calls. Some rebates will take place in the middle or end of June but the majority of customers have received their rebates. He acknowledged they could have done a better job on providing more explanation.

Chair Segal inquired if the bill would look different after we finish upgrading the system. Mr. Batchelor thought we would need to redesign our bill once electrification and grid modernization begins. We have to remove at least some of the gas commodity portions in the bill. Conversations have taken place about how expensive it would be for the last customers on the gas system. Maybe we will title it as an energy bill. Staff is determining from a federal legal perspective if we can transfer electric funds to the gas commodity or have one energy fund to subsidize the cost as people start to transition off gas.

Mr. Batchelor stated there would be a 3% increase in the dark fiber rate, based on CPI.

NEW BUSINESS

ITEM 2: ACTION: Staff Recommends that the Utilities Advisory Commission Recommend the City Council Adopt the 2023 Annual Water Shortage Assessment Report

Lisa Bilir, Senior Resource Planner, delivered a presentation on the Annual Water Shortage Assessment Report. Palo Alto does not have a water shortage this year. All California urban water suppliers were required to submit their water shortage assessment reports annually by July 1 to the Department of Water Resources, who then prepares a summary report for submission to the State Water Resources Control Board yearly by September 1.

From July to December 2022, Palo Alto customers reduced their usage by 11%, in line with SFPUC's water conservation voluntary reduction request. There were 31 atmospheric rivers from mid-December to the end of March. The snowpack is over 100% of the April 1 median level. SFPUC rescinded its water shortage emergency and their request for voluntary system-wide water use reductions will expire on June 10. Palo Alto's water use restrictions follow State and SFPUC's restrictions, so most of our restrictions will expire on June 10, including the two day per week watering and Stage 2 water use restrictions. Water conservation is a way of life in California and we encourage the wise use of water in Palo Alto. We have permanent water waste restrictions and a suite of water conservation programs. You can find more information on our website at cityofpaloalto/waystosave. We recently expanded our water conservation program offerings to include WaterSmart and Waterfluence. We are evaluating additional conservation programs as part of our One Water Plan.

Commissioner Mauter queried if there had been any analysis on the accuracy of the voluntary water reduction that stemmed from Council changes and if the 11% reduction was in line with what we anticipated. Ms. Bilir explained that staff from various departments monitored every month how much customers were reducing and analyzed how different customer classes could conserve more where we were seeing the need. The net total for the period from July to December was 11% and that was in line with what SFPUC asked us to reduce. If it were less, we would have recommended different measures for Council to take. Our water shortage contingency plan outlined measures to get to the desired reduction level at each stage of conservation. In response to Commissioner Mauter's request, Ms. Bilir will track if there is a rebound.

Commissioner Philips asked what impact this report had. Ms. Bilir answered it was informational. We have to follow State requirements to qualify for State loans and grants. The Legislature placed this requirement to compile statewide information and improve their communication on drought planning and actions. The State does not use it to allocate resources to cities or judge individual programs.

Chair Segal was curious if the home water report was received well and if it has had or would have any impact on conservation. Ms. Bilir thought that customers received it well. Karla Dailey, Acting Assistant Director Resource Management, stated they sent a couple months' worth of reports. Some of the reports were going into customers' junk folders and staff is working on the technical aspect to make sure that does not happen. The response had been mostly positive. Staff is gathering information on click rates and making sure that customers see the report in their inboxes. She thought there was one extra click in MyCPAU to see the home water report.

ACTION: Commissioner Mauter moved Staff request for the Utilities Advisory Commission to Recommend the City Council Adopt the 2023 Annual Water Shortage Assessment Report

Seconded by Commissioner Forssell.

Motion carries 6-0 with Chair Segal, Commissioners Croft, Forssell, Mauter, Metz, and Phillips voting yes.

Vice Chair Scharff absent.

ITEM 3: ACTION: Staff Recommends the Utilities Advisory Commission Accept and Approve the 2023 Wildfire Mitigation Prevention Plan as Presented

Jim Pachikara, Acting Electric Engineering Manager, presented an update on the Wildfire Mitigation Plan. In 2018, California Legislation passed Senate Bill 901, which required electric utilities to prepare a wildfire mitigation plan, update it annually, present it in a publically noticed meeting, and submit it to the California Wildfire Advisory Board each year by July 1. Utilities were required to complete a comprehensive revision of the plan every three years. This is our first full revision. Staff focused on statutorily mandated elements, general suggestions from the Wildfire Safety Advisory Board, information about specific projects and feedback from the independent evaluator's report. This was a collaborative effort with the assistance and input from the Fire Department, Urban Forestry, Open Space and the Office of Emergency Services.

Staff's key mitigation activity for reducing wildfire risk was to underground 11 miles of overhead electric lines in the Foothills area, of which they installed approximately 2.4 miles of substructure. This project involves installing electric substructure including conduit and boxes for electric and fiber lines, removing overhead electric and fiber lines from poles, and installing padmount equipment where possible. This project consists of multiple phases with anticipated completion in 2025. The design of the next two phases is nearly complete. Attachment A included updates on other wildfire related activities.

Staff retained Dudek to perform an independent review of the plan to determine its efficacy, legal compliance and provide suggestions for improvement. Retaining an outside expert to review this plan is not a legal mandate; however, staff felt doing so for our first comprehensive revision was prudent and in the best interest of our community. The evaluation report concluded that our Wildfire Mitigation Plan (WMP) met the statutory requirements for a publically owned utility. This report is included in Attachment B of the staff report. The evaluator concluded with this statement: Based on the wildfire

prevention programs described in the WMP and the progress that CPAU has made in its wildfire prevention programs, the CPAU takes the risk of wildfire in its service territory seriously and is actively working to reduce the risk that its equipment starts or aids in the spread of wildfire.

Staff inspects the lines and clears vegetation annually before fire season. Mr. Pachikara thought there were about 150 meters in the area. We communicate our Wildfire Mitigation Plan via our website and this UAC meeting.

Mr. Pachikara addressed Commissioner Phillips' questions. We chose the performance metrics and outcome metrics. It is not standard practice to use an outside auditor. It might have been required in 2020 but this time it was voluntary. We chose to do so to be prudent and to make sure we were doing our due diligence with our plan.

With the construction work falling behind and given the danger this represents, Commissioner Metz wondered if we should outsource more construction work to accelerate the plan. Mr. Pachikara replied it was possible but the bid response from our RFP had a very high cost. Per his recollection, the \$12M bid was for an overhead rebuild, reconstructing and fire hardening the existing overhead system but not undergrounding. Undergrounding would have cost more. We decided to do this in-house with our own staff because we have engineering contractors if we need to use them. MP Nexlevel is our substructure contractor. Staff supervises the contractor and makes sure they are efficient with their time.

Mr. Pachikara addressed Commissioner Forssell's questions. We have undergrounded 2.4 miles and we will start the next two phases soon. The level of investment for the undergrounding effort is about \$12M. There could be some savings once we complete undergrounding but underground lines have a useful life. We inspect our underground equipment every three years. There will be some cost savings in clearing trees and vegetation. Dean Batchelor, Utilities Director, related an incident when there was a Public Safety Power Shutoff (PSPS) at nighttime due to high winds. We will not risk the safety of our employees by having them walk the line in Foothills Park up to Skyline during the middle of the night. We shut off power to those customers until we went up there the next morning. Having a contractor do the build and design cost around \$25M or \$26M. CPUC or Fire does not obligate us to underground this line as long as we trim back the trees but CPAU decided it was better to underground and it avoids the inconvenience of shutting down power to those customers.

Commissioner Croft asked if the underground facilities go up the road or through private property and she hoped the undergrounding did not affect the running trail. Mr. Pachikara responded that a lot of it was through our existing easements through the park in some of the open space area but it did not follow the road. Some of it was near the running trail but they are restoring the trail if they disturb it.

Mr. Batchelor addressed Chair Segal's inquiries regarding PSPS, if customers had evacuation plans and practice drills. OES Chief Ken Dueker talked to those customers about lightning or other things that might happen. They advised customers to have a plan on how they would get down off the hill or go up to Skyline. They have contacted all the residents on the hill and usually meet with them yearly.

In reply to Chair Segal's query on when fire season begins or when visual inspections occur, Mr. Pachikara answered that we typically complete them yearly by May and again in November before the dry, windy season.

ACTION: Commissioner Mauter moved Staff Recommendation the Utilities Advisory Commission Accept and Approve the 2023 Wildfire Mitigation Prevention Plan as Presented

Seconded by Commissioner Phillips.

Motion carries 6-0 with Chair Segal, Commissioners Croft, Forssell, Mauter, Metz, and Phillips voting yes.

Vice Chair Scharff absent.

The UAC took break at 6:55 p.m. and resumed at 7:10 p.m.

ITEM 4: DISCUSSION: Discussion and Presentation of the Update of the Grid Modernization

Tomm Marshall, Assistant Director of Electric Engineering and Operations, delivered a presentation on the Electric Distribution Infrastructure Modernization Update. A consulting firm provided an Electric Infrastructure Analysis Report. We have 3 kVA per home. We expect peak demand of 6 kVA per home with electrification, assuming diversification in the loads. Demand varies throughout the day. Capacity increases will have an impact on our distribution transformers and secondary conductors. We will focus on installing more transformers and secondary networks in residential areas. We are seeing the most impacts from electrification in the residential sector.

Commissioner Mauter inquired what was the timeframe to transition from 3 kVA to 6 kVA and if we expected the long-term average to go above 6 kVA. Mr. Marshall thought 6 kVA was about where it would end up based on our climate zone and diversification we see today. There are some new factors with electric vehicle (EV) charging but other loading is similar to what we have now. Our mild climate results in lower peaks.

In reply to Commissioner Phillips's question if assumptions included the 6000 households we have to add according to our Housing Element, Mr. Marshall responded it depended on where the housing comes from. ADUs are coming. Multitenant buildings require a new transformer as part of the development project.

Our system has a 12 kV backbone. As we do electrification, we need to improve network reliability and resiliency, which in part included building additional circuit ties within the network to maintain customers when outages occur or if we have equipment failure. We expect loads to increase, so we have to add transformer capability in a couple substations later in our upgrade.

The estimated cost is between \$220M and \$306M, depending on the upgrades we choose to make. Technologies are in development to reduce coincident loading. New technologies are getting ready to come to market. As we move into the upgrade, we will determine if we can reduce the upgrades based on new technology. We need to do a cost analysis on upgrading the network versus implementing technology for peak load mitigation.

The first thing we will do is convert most of the 4 kV to 12 kV because we will overload the primary network if we keep it at 4 kV. About 60% to 70% of our customers are connected to the overhead system. We will increase overhead system capacity as soon as possible so the capacity of the existing network does not restrict customers. We will convert the underground system from 4 kV to 12 kV later in the process. Upgrading the underground system capacity is more complex than the overhead. It

required interaction with neighborhoods to install pad-mounted equipment. The majority of our system is 12 kV. The area off Embarcadero between University and down to Rinconada Park is 4 kV. We have a small patch of 4 kV by East Meadow but we have almost completed that conversion.

We are working on Task I, the Trial Upgrade Project in the Leland Manor area to convert from 4 kV to 12 kV. We are designing it for 6 kVA per home. The availability of transformers is limiting our work. We have made progress in figuring out how to get those to us later this year from foreign suppliers.

Task II, Upgrade Overhead Systems, includes replacing transformers as well as upgrading secondary systems and residential circuits to reduce the barriers limiting electrification projects. Currently, when people request multiple batteries or large solar panels on their homes, we have to limit the size because of the networks. If someone wants to build a project we are unable to accommodate, they are required to pay for additional infrastructure upgrades. We expect to start Task II design and construction in late 2023 and finish construction for all overhead systems by the end of 2027.

Task III, Upgrade Underground Systems, is the most difficult task. We do not install subsurface equipment anymore, so we have to negotiate with neighborhoods to find locations to install pad-mounted transformers.

About 12% of our residential customers are underground. Some underground customers have padmount transformers in the newer districts but we have to install new padmount transformers if we are doubling the load because they do not have enough capacity on the existing ones. That is a bigger project. We need to build new infrastructure that could require extending primary conduits and additional secondary conduits. It is more complicated and expensive. The Preston Park area is a very old underground district at 4 kV that we need to rebuild.

Mr. Marshall addressed Commissioner Croft's inquiries regarding customers' concerns about sound or environmental impact of higher voltage transformers. There is noise. They hum at 120 Hz. When we bid out transformers, we have specifications for efficiency and noise. In the current market conditions, we have to compromise to get whatever we can find in the marketplace, so we are not evaluating some things as we normally would in the past. He is hopeful that we will be able to get the types of transformers we like by the time we rebuild the underground systems. We expect to start Task III design in 2026 and complete construction by 2030.

Task IV is Upgrade Substations and Circuits. To add capacity, we will increase the size of the Colorado and Hopkins substations' small transformers to larger transformers. We may be able to relocate some transformers from the business park as part of the Tesla project we are working on. Design and construction will begin in late 2027 and we want to complete Task III in 2030.

In reply to Commissioner Phillips's query as to why we are postponing upgrading underground systems until 2026, Mr. Marshall responded it is because we are focusing on the overhead systems. It is also because of staffing and construction management, although we will hire people to help manage. It is difficult to do it all at the same time even with additional staff because it is a lot to manage. We have to think about how many areas we are disrupting in the community at the same time.

Later, staff will inform Council about the issues with undergrounding. Our S/CAP goal is to have upgrades for electrification in place by 2030. Undergrounding is a very large project. There are some

issues with telephone and cable companies participating with the City on undergrounding. The cost is probably \$400M or \$500M for complete undergrounding.

Task V is Load Mitigation and Reliability. We will see what is available in the marketplace to help us mitigate some of the load and maybe reduce our upgrade cost. There will always be a limit of how many batteries can connect to the system. We are trying to have a reasonable amount of capacity to take care of what most customers will want.

Dean Batchelor, Utilities Director, commented that our initial goal was to deploy AMI everywhere by the end of the year but we have pushed it to the first quarter of 2024 because we are having difficulties obtaining electric meters.

Commissioner Croft asked if the pilot project included everything needed to upgrade a neighborhood so people in that neighborhood can electrify to their heart's content when we complete the pilot project. Mr. Marshall responded correct, we think the system would have a reasonable amount of capacity for people to install solar and batteries on their home. Commissioner Croft inquired if the project included communicating with those customers to encourage them to move to electricity. Mr. Marshall answered yes. They will coordinate with our Resource Planning Division to handle the promotion and incentives.

Mr. Marshall spoke about funding. We made it through the first screening for a matching DOE Grid Resiliency and Innovation Partnerships (GRIP) Grant. We sent our final submittal. Late this year, they will notify us whether we will receive funding and the amount. The decision on whether we need revenue bonds to supplement the money in the budget is dependent on how much we receive from DOE.

Commissioner Phillips queried what begins to happen and when if we do not upgrade. Mr. Marshall explained that we already have transformer failures leading to outages as well as voltage excursions. We have received complaints from customers about voltage excursions when they see flickering lights or low voltage at their house. Palo Alto has a large number of EV chargers. Almost every solar project includes batteries, so we review them because they are a stressor on the secondary networks and cause voltage problems for other customers.

Commissioner Phillips asked if 12 kV enabled all the things people want to do, such as selling into the grid from your Tesla battery or demand management capabilities or if those were separate projects. Mr. Marshall responded they are related. The infrastructure is important because we have to accommodate increased loading on the system. New technologies will possibly send battery power back into the grid. The CEC said that vehicle-to-grid was not ready. We have to start because the City wanted this project done by 2030. If this new technology becomes available, we can implement it as we move along.

Commissioner Forssell requested further explanation on the assumptions or design constraints for calculating the peak demand of 6 kVA per home. Mr. Marshall replied that they relied heavily on LADWP data from their large study on loading and determining the impacts of electrifications. We used a number similar to theirs. The City of Palo Alto has very little data because we do not have any recording meters. We looked at our loads and calculated what we thought was a reasonable diversified load with electrification based on the loads that will be installed in homes. The biggest uncertainty is EV charging. This number will not allow everybody to turn their charger on at the same time. We have to determine how we can use time-of-use metering to adjust when people charge.

Commissioner Forssell received an email from a member of the community about a limit of 20 kVA. Mr. Marshall stated that 20 kVA was the maximum we allowed on a shared distribution network, which means one transformer with a secondary network with maybe 10 or 15 homes on it. If a customer wanted more than 20 kVA, they have to pay to upgrade the system to allow them to have their own transformer to serve their house. Most of our transformers are 25 kVA or 37½ kVA. We see voltage deviations when a generator more than 20 kVA goes on and off the system.

Regarding the difficult negotiations to install underground systems in neighborhoods, Commissioner Forssell knew of an instance that remained unresolved many years later. She asked if it had to be a negotiation or if Council could adopt policies to make it less complex. Mr. Marshall replied that the City had sufficient right-of-way to put a transformer near somebody's front yard but we do not want to be in a public relations nightmare with our customers. We need time to determine what policies would be in place, how flexible we would be when we have opposition and whether we would try to negotiate. Mr. Batchelor pointed out that Council adopted a policy that we can only have padmount transformers, so now we cannot underground the transformers. The majority of our customers are in the overhead sections, which gives us time to figure out a solution. We almost have to double the amount of transformers, which increases the number of people with a green box in their front yards. Staff will discuss this further with the UAC and Council.

Commissioner Metz commented that the plan seemed mostly about increasing capacity. It does not address grid-of-the-future issues such as EVs, demand management and distributed resources. Ten years from now, EVs will be ubiquitous and the two-way charging of EVs large batteries will have an impact. He did not feel as if he had enough information to fulfill an advisory role on those issues. He would like to see the electric utility analysis report. He asked if there would be a plan with enough detail for the UAC because \$200M to \$300M was a lot of money. Mr. Marshall replied that a study on technology was in progress with a consultant and we would get that back later this year. The ability to accept delivery from customers back into the system is part of what we are planning with the infrastructure upgrades. The ability to take reverse power flow through our substations or identifying areas where we might see reversed power flow is part of the upgrade plan. We will look at solar panels with solar inverters that have the capability for us to communicate and control them. Those will be part of grid modernization. We are looking at putting additional controls on circuit ties. There are remote control systems that allow us to switch remotely. Staff will share more details as they work this and when the additional study comes back.

We are looking at putting in fiber network. As part of the rollout for fiber to the home, there is a section set aside for utility fiber for automation purposes. We are trying to improve sectionalizing and smaller outages. That is coming as part of the next study. We are going to see increases on the system load that we need to cope with and that is what we are trying to get ahead of now.

Mr. Batchelor remarked that Council approved the S/CAP plan last Monday and part of that was for staff to look at reliability and resiliency through a strategic plan they are working on with the S/CAP group. Jonathan Abendschein is heading that effort. Staff will share the strategic plan with the UAC once it is in place. Commissioner Metz stated that he received questions from City Council that implied they thought we oversaw S/CAP but that was not his understanding. Mr. Batchelor responded that Council Member Burt was the S/CAP Committee Chair and Finance Committee Chair. We estimated \$300M for this plan. There is \$25M in the FY 2024 budget for studies, design, and equipment to convert some areas. The strategic plan will address what the grid would look like.

Commissioner Metz suggested that the UAC consider a grid modernization subcommittee because of the size and importance of this project. He was on the fiber subcommittee and found it was an efficient way to work and keep people informed whereas that is not possible in a monthly Commission meeting. Mr. Batchelor needed to think more about that idea and continue this conversation at the next meeting after he discussed it with Public Works Director Brad Eggleston and Chair Burt.

Commissioner Metz recommended a Study Session, perhaps with City Council if they wanted, around S/CAP and grid modernization so everybody knows what everybody else is doing. S/CAP is a big City initiative but it does not happen without grid modernization. Regarding Commissioner Metz's comment for everyone to know what everyone is doing, Chair Segal stated there were different mechanisms to achieve that. In the past, UAC members attended S/CAP Subcommittee meetings but that stopped when we had the changeover in City Council, so maybe they could consider that. She opined that there was not enough communication on what S/CAP was thinking and how the UAC could help guide them.

Council Liaison Lauing queried if the \$220M to \$306M in the budget was only for infrastructure and not for things such as rebates. Mr. Marshall responded that was correct. Council Liaison Lauing advised keeping that in mind if we want to help people refurbish their homes to transition from gas to electric. He asked about labor and supply chain issues for parts in the context of budget estimates and timing. Mr. Marshall replied that some supply chain issues were starting to improve. Staff was working on figuring out how to get advanced supply chain items in place so we will be in the queue to buy things. There is an issue around acquiring wood poles because EPA changed the treatment that can be used on those poles and now we cannot get poles from Canada. He felt that many supply chain issues will have resolved or we will be in the queue to get what we need by the time we get into the major part of this project and he did not think it would constrain our timeline.

Council Liaison Lauing asked if a sensitivity analysis was done to determine how many homes would be able to retrofit by the end of 2030 or how close we are to the date we will turn off the gas. Mr. Marshall explained that staff intended to finish the infrastructure upgrade by 2030. How fast that takes place and how fast the gas people come off gas is dependent on many other issues that we cannot control. We do not want to be the limiting factor for people making a decision on whether they can upgrade now.

Commissioner Croft wanted to see a written plan and be educated on how the City manages the plan. She wanted to see what the plan encompassed even if it was high level and staff can update the UAC along the way. She was curious about what kind of planning was done on an ongoing basis that the City uses to determine the work and if the UAC can see those. Mr. Marshall replied that there was not a detailed plan for each neighborhood. The study looked at the whole system and staff divided it into a workable number of homes. We will do neighborhoods with 4 kV first because we need primary capacity there and we have to convert it to 12 kV but a lot of this is conceptual. We have to coordinate with the fiber-to-the-home project. We will learn from the pilot project and that will inform us when we create the rest of the plan for the City. Plans are conceptual because we are in a very early planning stage. We will convert a third of the overhead system over a course of three years, then do the underground, and then substation upgrades. After the pilot project, we will start on other 4 kV older neighborhoods in the area by Hopkins. After that, it will be based on coordination efforts with the fiber project.

It is in Microsoft Project at a very high level. It includes how much of the system we will convert, when we need to order materials, and when we need to start construction but we have not chosen particular neighborhoods yet. Staff can share the Microsoft plan but it is not detailed. Commissioner Croft

expressed that most of her concern was with making sure we accommodate sustainability. Mr. Marshall stated that staff was coordinating with Resource Management on incentive programs.

Commissioner Mauter queried if there was a separate plan focused on commercial or municipal loads. Mr. Marshall responded that they do not expect many issues in the commercial sector with these infrastructure upgrades. There may be some in the smaller commercial but we do not expect a huge impact on most of the larger buildings. There may be mass EV charging in the business park but we have plenty of transformer capacity there. They may have to install a transformer but there is enough capacity in the network to handle that. The 4 kV and 12 kV backbone of the system is in good shape. There are a few places where we need to work on the primary portion of the system but the work is mainly in the secondary networks, which is the 120 and 240 that comes in your home. As we rebuild the circuits, we will see if we need additional capacity. We will determine where we need additional circuit ties to provide better reliability and resiliency and that is included in these costs.

Jonathan Abendschein, Assistant Director Resource Management, stated there was a Reliability and Resiliency Strategic Plan in the S/CAP work plan at Council's direction to the S/CAP Committee. On Monday, Council approved preliminary guidelines for the study as an appendix to the work plan. Staff can share with the UAC the policy guidelines embedded in the work plan that Council adopted Monday. Chair Segal would appreciate having that shared with the UAC sooner rather than later. Mr. Abendschein will talk with Mr. Batchelor about how to get more information on the status and direction of the S/CAP to the UAC. Mr. Abendschein is willing to provide regular S/CAP status updates.

Commissioner Metz commented that UAC's role was to advise City Council and he does not feel comfortable doing that with the level of information he had. Tonight's discussion was about growing capacity on the grid. If staff is saying that is the only issue to grid modernization, then write that down.

Commissioner Phillips asked if the grid would enable EV charging. This is a long-term plan that costs a lot of money so it needs to address these issues. Take a position whether demand management is going to happen and what we are doing about it. Bidirectional EV charging is not going to be a factor for X years and here is what we will do when it is a factor. We need to address those issues, at minimum saying we do not think this one is going to matter or this one will matter and here is what we are doing about it. If City Council asked me what grid modernization is doing about EV charging in 2035, I would not be able to give them an answer. We should be able to say, do not worry because it is not important or it is important and here is what they are doing about it.

Mr. Marshall responded that the S/CAP resiliency plan was looking at those issues. Staff has not finished the plan on what the future looks like but it would include input from the S/CAP Committee. The future is uncertain in many of these areas because technologies are developing. This will be a very fluid process and we will make decisions along the way. We have start on the infrastructure now because we need capacity. It will take at least until 2030 to get this done. New technologies could change what we do. We are not committing today to spend the whole amount. The first step is doing this trial, see the results of what happens when we electrify in those areas and adjust the plan.

Mr. Abendschein emphasized that the S/CAP team was working with the engineering team. They are meeting weekly on programs, strategic planning efforts, and issues. If we want people to reduce emissions, we need to start grid capacity upgrades. If there are benefits from new technologies that can save us money on grid upgrades, we can incorporate those as we go. This plan effectively accomplishes building capacity. The reliability and resiliency plan will address many of the UAC's concerns.

Chair Segal suggested that Mr. Abendschein return to the UAC periodically or provide written material on S/CAP. The UAC's job is to be advisory but it was difficult to provide well-informed feedback if they do not have the foundation of what they are advising on. It is a big project that costs a lot of money and disruption. Mr. Abendschein commented that the Reliability and Resiliency Plan would address how grid modernization will affect vehicle-to-grid and vehicle-to-home. Commissioners can ask specific questions by email. Chair Segal reminded the commissioners to send individual emails but not to share them across the UAC because of the Brown Act. Mr. Batchelor requested the UAC to send him emails and then he will follow up with Mr. Abendschein, Mr. Marshall, and Mr. Eggleston.

Mr. Abendschein addressed Commissioner Croft's inquires on the S/CAP management structure and jurisdiction. The Council delegated oversight of S/CAP to the Council's ad hoc S/CAP Committee that consists of three Council Members. The Internal Sustainability Leadership Team is an interdepartmental group focused on implementing specific goals and key actions listed in the S/CAP. The Sustainability Leadership Team meets regularly to make sure we are moving policy decisions forward and accomplishing projects. It is a cross-departmental management structure.

Chair Segal wondered if they could do the underground pilot project earlier to understand what the additional challenges were. Mr. Marshall replied that they could consider it. It will be difficult. Converting 4 kV to 12 kV is a big project. We have to replace all the cables (including all the primary cables) and we need to do infrastructure work. We have a lot of experience with underground districts. Some of the 4 kV neighborhoods are in the Crescent Park area that has small homes on small lots. It is all in subsurface vaults but we have to padmount. Staff does not think that residents will be very receptive, so they will look at alternatives. Since staff knows the challenges, they do not want to spend a lot of time on those when they can instead convert more customers.

Chair Segal was concerned that the most challenging underground districts will be on gas a lot longer and bearing the burden. Mr. Marshall pointed out that somebody has to be last because we all cannot convert at the same time. Mr. Abendschein remarked that somebody is going to be last and we have to make sure those customers can affordably keep their utilities. A funding study is in the work plan. There has to be money set aside for affordable heating in the rate design. We cannot let the gas rates expand uncontrollably for the last few people. There may need to be a transfer between utilities or a combination energy utility fund.

ACTION: None

COMMISSIONER COMMENTS and REPORTS from MEETINGS/EVENTS

Commissioner Forssell read an interesting *IEEE Spectrum* article on March 23 that she wanted to share with the Commission titled "EV Transition Explained." CPAU's grid modernization was Chapter 3, titled "Can the Grid Cope?" It covered our February meeting last year and spoke about some of the challenges and obstacles to an EV transition. She will email the article to Tabatha Boatwright, Utilities Administrative Assistant, for her to forward to the UAC. Commissioner Phillips read the article and thought it was extremely enlightening.

FUTURE TOPICS FOR UPCOMING MEETING

Chair Segal confirmed that the UAC would meet at their regularly scheduled time on July 5, 2023 if there were enough commissioners for a quorum.

Some future topic items have been on the list for a long time. Dean Batchelor, Utilities Director, set a goal for staff to have those reports and presentations completed by the end of the year.

NEXT SCHEDULED MEETING: July 5, 2023

Commissioner Phillips moved to adjourn.

Commissioner Mauter seconded the motion.

Motion carries 6-0 with Chair Segal, Commissioners Croft, Forssell, Mauter, Metz, and Phillips voting yes.

Vice Chair Scharff absent.

Meeting adjourned at 8:50 p.m.



CITY OF
**PALO
ALTO**

Utilities Advisory Commission Staff Report

From: Dean Batchelor, Director Utilities
Lead Department: Utilities

Meeting Date: July 5, 2023
Staff Report: 2305-1679

TITLE

Staff Requests the Utilities Advisory Commission Recommend the City Council Approve Participation in the GoGreen Home Energy Financing Program in an Amount Not-to-Exceed \$2 Million over a Term of up to Five Years, Funded by the City's Cap and Trade Reserve, by Authorizing the City Manager or Their Designee to Execute a Memorandum of Agreement with the California Alternative Energy and Advanced Transportation Financing Authority

RECOMMENDATION

Staff requests the Utilities Advisory Commission recommend that Council Authorize the City Manager or Their Designee to Execute a Memorandum of Agreement with the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) to provide Credit Enhancements for Palo Alto Residential Customer Home Energy Efficiency and Electrification Project Loans Facilitated by CAEATFA's GoGreen Home Energy Financing Program (GoGreen Program) in Amount Not-to-Exceed \$2 Million over a Term of up to Five Years, and approve the use of the City's Cap and Trade Reserve funds to cover the cost of the City's Participation in the GoGreen Program.

EXECUTIVE SUMMARY

To meet Palo Alto's ambitious greenhouse gas reduction goals, residents will need to implement energy efficiency and electrification projects at their homes. These projects may need thousands of dollars in capital expenditures. The GoGreen Home Program¹ is a long-standing State-run financing program that partners with participating financing companies (PFCs) to provide consumer financing for these types of projects at competitive interest rates (4% to 8% for PFCs operating in Santa Clara County,² with the program average interest rate to-date being about

¹ <https://gogreenfinancing.com/residential>

² Current participating financing companies operating in Santa Clara county are [Matadors Community Credit Union \(Lending Terms: https://www.treasurer.ca.gov/caeatfa/cheef/reel/resources/lender-profiles/MCU-lender-profile.pdf\)](https://www.treasurer.ca.gov/caeatfa/cheef/reel/resources/lender-profiles/MCU-lender-profile.pdf) and [California Coast Credit Union \(Lending Terms: https://www.treasurer.ca.gov/caeatfa/cheef/reel/resources/lender-profiles/CCCU-lender-profile.pdf\)](https://www.treasurer.ca.gov/caeatfa/cheef/reel/resources/lender-profiles/CCCU-lender-profile.pdf).

5%³). Loans of up to \$50,000 can be made for a variety of project types,⁴ with no up-front payment. Many contractors are registered with the program⁵ and GoGreen strives to make the program easy for new contractors to join.

To make the program successful the State has partnered with utilities throughout California to provide PFCs with loan loss reserves that allow the PFCs to directly offer borrowers improved financing products with benefits such as broadened credit approvals, reduced interest rates, extended term lengths, and/or access to larger amounts to borrow.

To date, the GoGreen program has not been offered in Palo Alto because it has only been available in areas served by an investor-owned electric or gas utility like Pacific Gas and Electric (PG&E). Palo Alto is one of the only places in California not served by any investor-owned energy utilities, and therefore needs a special agreement with the State to participate. Staff is recommending approval of such an agreement to be able to offer this program to the City's residential homeowners. This program has the potential to offer financing to support upcoming advanced pilot programs for home electrification to achieve the community climate goals embodied in the Sustainability and Climate Action Plan (S/CAP), though even simpler programs will likely be needed to support longer-term full-scale electrification programs.

City's Cap and Trade Reserve funds will be used to cover the cost of the Program.

BACKGROUND

The California Hub for Energy Efficiency Financing (CHEEF) was formed as a public-private partnership between the State and California's investor-owned utilities (IOUs). It was authorized by the California Public Utilities Commission (CPUC) in 2013 and is administered by CAEATFA, an agency under the State's Treasury Department. The GoGreen Home Program issued its first loan in 2016.

The objective of the GoGreen Home Financing Program is to offer residential customers attractive financing options, through participating financial institutions, for energy efficiency and decarbonization projects by providing a 'credit enhancement' to lenders in the form of a loan loss reserve, funded by the IOUs and other participating entities (e.g., TECH Clean California). CPAU's participation to facilitate Palo Alto customer access to GoGreen Home would be the first credit enhancement funded by a municipal utility. Others are expected to follow.

The benefits to residential homeowners participating in the Program include:

- No lien on property (unsecured consumer loan)
- Available to borrowers with a wide range of credit scores and incomes
- Loans of up to \$50,000 per unit receiving upgrades

³ Program data available at <https://www.treasurer.ca.gov/caeatfa/cheef/monthlyreel/2023/202303.pdf>

⁴ [Eligible Energy Efficiency Measures](#) include: appliances (including electrified appliances such as heat pumps), building envelope, demand response, HVAC, lighting, pool products, water heating.
<https://gogreenfinancing.com/residentialcontractors/about#tab-9>

⁵ <https://gogreenfinancing.com/contractorfinder>

- Finance 100% of the project cost, including required related upgrades (e.g. electrical upgrades)
- Up to 30% of loan amount can be used toward non-energy improvements (e.g. home remodels, drought tolerant landscaping)
- No prepayment penalties
- Currently no closing costs or origination fees (may change in the future)
- No contractor fees (lenders often charge contractors thousands of dollars to finance projects)
- Below-market interest rates and extended payback periods (due to credit enhancement provided to lender)
- Broad list of energy efficiency measures to choose from⁶; can be layered with utility incentives

ANALYSIS

Staff is recommending that the City join the GoGreen program as a way to quickly begin providing financing to Palo Alto homeowners for higher-cost electrification projects. The program would require little staff time to implement at a competitive cost to the City. The City's current showcase electrification program is focused on heat pump water heaters. These projects are lower cost, so it was possible to provide financing using utility funds. As the City expands its programs into higher cost projects like residential space heating, or into projects that require panel upgrades and electrical upgrades, costs will increase and financing will become even more important to customers.

Cost of Participating in the Program and Funding Needs

As the first GoGreen Home Program funded by a non-IOU utility, the administrative cost of the Program is being charged on an incremental cost basis to Palo Alto, to make the same Program that is offered to the IOU customers available to Palo Alto residents. The City will not be responsible for administering or reviewing loans in any capacity.

Palo Alto's cost to participate in the GoGreen Home Program for the first two years is estimated at \$134,000, as shown below in Table 1. In addition to the projected \$134,000 in administrative costs, the City is required to provide a contribution to a loan loss reserve. The amount will depend on the credit scores of the homeowners seeking loans, but the program average contribution to-date is 15% to 16% of each loan. For the first two years staff is proposing to budget for \$375,000 in loan contributions, which would support approximately \$2 million in loans. This amount is expected to support around 120 loans, assuming loan sizes in Palo Alto match the statewide average (about \$17,000 per loan). Staff is recommending a contract not-to-exceed limit of

⁶ [Eligible Energy Efficiency Measures](#) include: Appliances, building envelope, demand response, HVAC, lighting, pool products, water heating

\$850,000 for the first two years, which exceeds the staff projected expenses for the first two years but provides some flexibility in case the appetite for loans in Palo Alto exceeds staff projections.

Table 1: Contract Terms

Estimated MOA Budget and NTE Budget (Assumes \$10M in loans; 1000 loans averaging \$10k each, over 5-years)							
	Year 1	Year 2	2-Year NTE Amount	Year 3	Year 4	Year 5	5-Year NTE Amount
Administrative Cost							
Start-up/Development Costs	\$ 41,250						
Ongoing Fixed Costs	\$ 30,000	\$ 30,000					
Variable (per loan) Costs	\$ 13,000	\$ 19,500					
Total Estimated Administrative Funds Required	\$ 84,250	\$ 49,500	\$ 250,000	TBD	TBD	TBD	\$ 500,000
Credit Enhancement Contributions							
CE to PFCs' LR Accounts - 15% of enrolled loan principal (Funds encumbered, but not expensed. Inclusive of seed to Holding Account)	\$ 150,000	\$ 225,000					
Total Estimated Credit Enhancement Funds Required	\$ 150,000	\$ 225,000	\$ 600,000	TBD	TBD	TBD	\$ 1,500,000
Annual Estimated Funds and MOA NTE Budget	\$ 234,250	\$ 274,500	\$ 850,000				\$ 2,000,000

During the third year of CPAU’s agreement with CAEATFA the basis of apportioning the administrative cost may be revisited by the CPUC. Since administrative costs are shared by all participating utilities, the CPUC approves administrative cost allocations to ensure no IOU ratepayer money is being used to fund non-IOU programs. The City’s participation in the program is voluntary, and the City is not obligated to continue its participation for any reason, including if the proposed new CPUC cost allocations are unacceptable to the City. However, if the program is successful and the City wishes to continue its participation, this MOA allows for continued participation without an amendment, with a limit on administrative costs of \$500,000 over the entire five year term.

Assuming the MOA remains in effect for 5 years and that the loan loss reserve would be funded at an average of 15% of each underlying loan, staff is seeking a \$1.5M contract limit to fund the loan loss reserve. This will enable GoGreen Home and Palo Alto to credit enhance up to \$10M in loans. As loans are paid off, the loss reserve would be recycled to fund additional loans. If and when outstanding loans are projected to exceed \$10M, Council approval will be sought to increase the loan loss reserve funding under this MOA.

The actual cost related to potential future loan defaults is difficult to estimate; defaults depend on many factors and past performance of loans is not an effective way to estimate future performance. However, GoGreen Home loans have had a low default rate historically. Of 3,102 loans that have been enrolled since 2016, loss reserve claims have been made on 43 loans. From a credit enhancement funds perspective, this has resulted in an loss reserve expenditure rate of about 4.4% of all invested loss reserve funds (\$382,224 of loss reserve funds spent, after

recoveries, of \$8.68M in total available loss reserve funds).⁷ When compared to the total amount loaned (about \$55 million) the loss rate is approximately 1%.

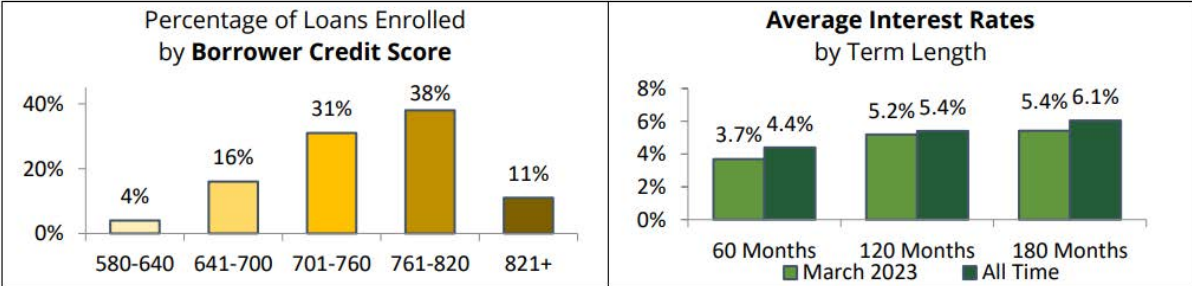
To avoid any impacts to the General Fund or utility ratepayer funds, staff is proposing to fund all administrative and loan loss reserve costs from revenues gained from the auction of allowances allocated the City as part of its participation in the State’s Cap and Trade program. This conforms with City’s policy on the use of Cap and Trade funds ([Staff Report#14606, 9/27/2022](#)).

Demand for Financing Energy Efficiency and Electrification Projects in Palo Alto

The level of demand for the GoGreen Home financing products in Palo Alto is difficult to gauge. As a relatively affluent community our residents have a wide array of options to finance projects. Staff anticipates the GoGreen Home financing product (unsecured consumer loan) will be a unique and useful product for residents as they embark on larger investments to electrify their homes, for residents with lower credit scores, or for residents who do not want to tap into the equity in their home or who have limited equity available to tap into.

The tables below illustrate the spread of borrower credit scores and interest rates charged over the life of the Program as of March 2023⁸. In the current climate of economic uncertainty and high interest rates, GoGreen Home’s relatively low interest rates may be compelling for interested Palo Altans.

GoGreen Home Borrower Credit Scores and Interest Rates (All Time)



Process to Select Contractor, Apply for Loan & Pay for the Home Improvement Project

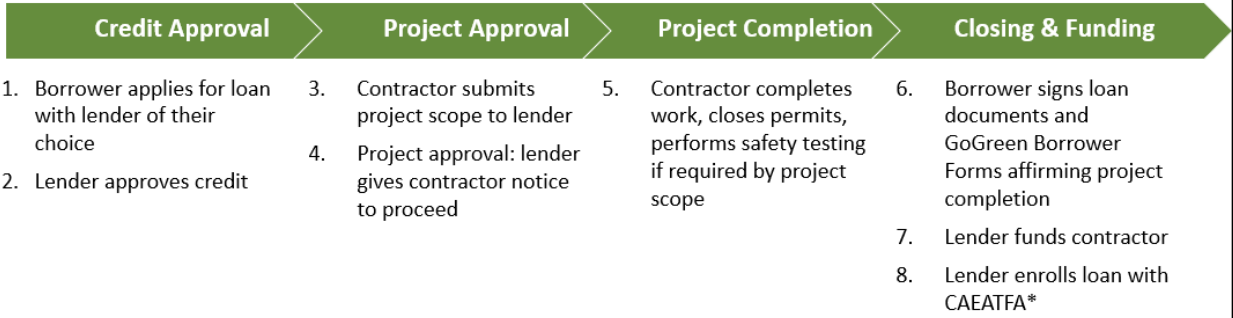
The process for implementing a project is illustrated below. It is designed to be simple and efficient, with minimal need for intervention (and thus, few delays) by Program staff.

⁷ <https://www.treasurer.ca.gov/caeatfa/cheef/monthlyreel/2023/202303.pdf>

⁸ [March 2023 Data Summary; All Reports](#)

Borrower Process to Finance and Implement Energy Efficiency Projects

- Borrower finds Participating Contractors at gogreenfinancing.com/contractorfinder
- Borrower applies with Participating Lenders at gogreenfinancing.com/findfinancing-home



*After loan enrollment with CAEATFA:

- CAEATFA deposits percentage (avg 16%) of each credit-enhancement eligible loan amount into loss reserve escrow account
- If customer defaults and loan become uncollectable, Lender has access to loss reserve funds**

** Access to loss reserve funds upon borrower default is the primary mechanism that allows the Lender to provide low-cost financing for a broader segment borrowers who may otherwise not be able to borrow for such projects.

FISCAL/RESOURCE IMPACT

Staff is requesting approval of \$250,000 in funding for administrative costs and loan loss reserve contributions in FY 2024. Budget for the remaining years of the contract will be requested in future proposed budgets. The program will not impact utility rates or the General Fund since it will be funded using Cap and Trade Reserve funds. Cap and Trade reserves totaled about \$7.9 million at the end of FY 2022 (of which \$1.2 million were earmarked for the Advance Heat Pump Water Heater Pilot Program) and revenues each year are approximately \$3 million to \$7 million depending on market prices for Cap and Trade Program allowances.

STAKEHOLDER ENGAGEMENT

Through the S/CAP community engagement process, Palo Alto residents are aware of CPAU’s efforts to enroll in GoGreen Home. Staff met with the Council Ad Hoc S/CAP Committee’s Working Group Finance Team on April 21, 2023, and with the S/CAP Committee itself on May 19, 2023. Community stakeholders in attendance supported the City’s participation in the program and the S/CAP Committee gave its unanimous recommendation.

Upon approval of the MOA by Council and implementation of systems to accept loan applications from Palo Altans, CPAU staff would promote this Program along with other home efficiency and electrification programs to all residents.

ENVIRONMENTAL REVIEW

Approval of the attached agreement described in this staff report does not meet the definition of a project under the California Environmental Quality Act (CEQA), pursuant to the California Public Resources Code Section 21065, because it is not an activity that will cause a direct physical change in the environment.

POLICY IMPLICATIONS

The MOA to facilitate energy efficiency and electrification project loans for Palo Alto residents

supports the community's climate goals as embodied in the S/CAP, the Council-approved Utilities Ten-Year Energy Efficiency Goals, and Comprehensive Plan Goals N4.2.1 (educate customers on efficient water use), N7.4.2 (implement cost effective energy efficiency programs for all customers) and N7.7.2 (explore the transition of existing buildings from gas to electric or solar water and space heating).

ATTACHMENTS

Attachment A: Memorandum of Agreement

Attachment B: Presentation

APPROVED By:

Dean Batchelor, Director of Utilities

Staff: Shiva Swaminathan, Senior Resource Planner

Memorandum of Agreement (MOA) between California Alternative Energy and Advanced Transportation Financing Authority and City of Palo Alto

Agreement to Facilitate Access for City of Palo Alto Utility Customers to the GoGreen Home Energy
Financing Program Administered by CAEATFA

1. INTRODUCTION

This Memorandum of Agreement (“MOA” or “Agreement”) dated XXX, 2023, is entered into by California Alternative Energy and Advanced Transportation Financing Authority (“CAEATFA”), a public instrumentality of the State of California created pursuant to Division 16 (commencing with Section 26000) of the California Public Resources Code, and the City of Palo Alto, a California chartered municipal corporation (“CITY”). CAEATFA and CITY are sometimes referred to in this Agreement individually as a “Party” and together as the “Parties.”

RECITALS

- i. In November 2016, the Palo Alto City Council approved the Sustainability Climate Action Plan (“S/CAP”) to lower the greenhouse gas emissions of the Palo Alto community; in December 2017, the City Council accepted the Sustainability Implementation Plan that identified energy efficiency and building decarbonization as key actions the community needs to undertake to achieve the community’s goal of reducing Greenhouse Gasses (“GHGs”) by 80% below 1990 levels by 2030.
- ii. The CITY has identified financing for residents to undertake home energy upgrades to lower their energy consumption and GHG footprint as critical to achieve the community’s GHG reduction goals.
- iii. The CITY has identified that the GoGreen Home Energy Financing Program (“GoGreen Home” or “Program”) offered by CAEATFA for California residents undertaking energy upgrade projects, through which Credit Enhancements are provided to Participating Finance Companies (“PFCs”) to improve loan terms for borrowers, is beneficial to Palo Alto residents.
- iv. GoGreen Home provides PFCs with a Credit Enhancement in the form of a Loss Reserve which allows the PFCs to directly offer borrowers improved financing products with benefits such as broadened credit approvals, reduced interest rates, extended term lengths, and/or access to larger amounts to borrow.
- v. CAEATFA has been authorized since 2013 by the California Public Utilities Commission (“CPUC”) through Decisions including D.13-09-044 and D.17-03-026 to administer the California Hub for Energy Efficiency Financing (“CHEEF”) which runs the GoGreen Financing programs, including

GoGreen Home. The CHEEF and GoGreen Financing programs have historically utilized Public Purpose Program (“PPP”) funds of ratepayers of Investor-Owned Utilities (“IOUs”).

- vi. Through its rulemaking authority, CAEATFA issues regulations which govern the GoGreen Financing programs, including rules for participation by PFCs, contractors, and customers. GoGreen Home is the longest-running of the programs and has served over 2,300 residential borrowers with \$40 million loans as of August 31, 2022.
- vii. The PPP IOU ratepayer funds are limited to supporting Eligible Loans for IOU customers. CITY residents receive gas and electric utility service from the CITY and thus are POU, not IOU, customers. Since 2019, CAEATFA has advocated to expand the CHEEF to be able to offer the GoGreen Financing programs statewide in line with California’s EE and GHG reduction goals, and to support program simplicity and uptake for contractors and PFCs through uniformity of rules across utility jurisdictions.
- viii. On August 5, 2021, the CPUC issued D.21-08-006 Decision Extending California Hub for Energy Efficiency Financing Programs and Conditionally Approving Use of Platform for Non-Ratepayer Funded Programs. This Decision allows for CAEATFA to incorporate non-PPP IOU ratepayer funds to expand the reach of the GoGreen Financing programs by expanding access to non-IOU customers, provided that the costs of expanded access come from corresponding non-IOU ratepayer funds.
- ix. CITY wishes to join GoGreen Home to provide Palo Alto residents and City of Palo Alto Utility (“CPAU”) customers with access to attractive financing products to support home energy upgrades. Since Palo Alto residents and CPAU customers are non-IOU customers, CITY wishes to provide funding to CAEATFA to expand access of GoGreen Home to them, as required by D.21-08-006.
- x. This MOA will allow GoGreen Home to serve more utility customers in the state and facilitate CITY and state’s mutual goals of energy efficiency, decarbonization, and GHG reduction. It will also facilitate CAEATFA’s goal of program simplification across utility jurisdictional lines in the state.

This Agreement between CAEATFA and CITY will offer CPAU customers a pathway to energy efficiency and decarbonization through access to attractive financing products not available outside the GoGreen Home program. The Agreement will enable CAEATFA to offer GoGreen Home under uniform terms more thoroughly in Santa Clara County, allowing for desired simplification for contractors and PFCs.

CAEATFA and CITY commit to working together to extend GoGreen Home, as established under the Program Regulations that govern GoGreen Home and which may be modified by CAEATFA under its rulemaking authority from time-to-time during the Term of this MOA, to CPAU customers. Implementation tasks to enable CPAU customers access to the Program include: establishing budgets, providing funding to CAEATFA to fund Credit Enhancements for PFCs, funding CAEATFA’s administrative expenses, establishing invoicing procedures, coordinating on operations, and publicizing the Program to CPAU customers. Specific activities and commitments are outlined in Exhibit 1.

NOW, THEREFORE, in consideration of the covenants, terms, conditions, and provisions of this Amendment, the Parties agree:

2. DEFINITIONS

Administrative Funds: Funds provided by CITY for CAEATFA to expand and administer the GoGreen Home Program to CITY utility customers. They include costs incurred by CAEATFA for Start-up/Development costs, Ongoing Fixed costs, and Ongoing Variable (per-loan) costs as detailed in Exhibit 2. They do not include the Credit Enhancement Funds.

California Public Utilities Commission (“CPUC” or “Commission”): The California state regulatory agency that is responsible for regulating privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies.

City of Palo Alto Holding Account (“Holding Account”): An account set up as described in Section 3 for the purpose of CITY providing Credit Enhancement funds for CAEATFA to utilize for GoGreen Home and to return funds to CITY.

City of Palo Alto Program CE Account (“Program Account”): An account set up as described in Section 3 for the purpose of allocating contributions to the Loss Reserve Accounts of Participating Finance Companies (PFCs) as the PFCs enroll Eligible Loans into GoGreen Home.

Credit Enhancement (“CE”) Funds: Funds provided by CITY for CAEATFA to allocate as a type of insurance that helps PFCs mitigate the risk that Eligible Loans will not be repaid in full. GoGreen Home utilizes a form of Credit Enhancement called a Loss Reserve for this purpose.

Eligible Loans: Loans or other eligible financial agreements, made by a Participating Finance Company to customers receiving gas or electric utility service from the CITY which are otherwise eligible for enrollment in GoGreen Home per the Program Regulations.

GoGreen Home Energy Financing Program (“GoGreen Home” or “Program”): Program designed to help California homeowners and renters access affordable financing for energy efficiency products and retrofits as codified in Title 4, Division 13, Article 5, of the California Code of Regulations.

Investor-Owned Utilities (“IOUs”): Southern California Edison (“SCE”), San Diego Gas and Electric (“SDG&E”), Pacific Gas and Electric (“PG&E”), and The Southern California Gas Company (“SoCalGas”).

Loss Reserve (“LR”) Accounts: Accounts set up for PFCs to hold Credit Enhancement contributions as the PFCs enroll Eligible Loans in the Program, against which the PFC can file claims in the case of a borrower default.

Personal Information: As defined in the Information Practices Act of 1977, Personal Information means “any information that is maintained by an agency that identifies or describes an individual, including, but not limited to, his or her name, social security number, physical description, home address, home telephone number, education, financial matters, and medical or employment history. It includes statements made by, or attributed to, the individual.”

Participating Finance Company (“PFC”): Finance companies approved by CAEATFA for participation in GoGreen Home to provide Eligible Loans.

Program Regulations: California Code of Regulations Title 4. Business Regulations Division 13. California Alternative Energy and Advanced Transportation Financing Authority Article 5. GoGreen Home Energy Financing Program

Provider: Third party product and service providers contracted to support operation of the CHEEF programs (including but not limited to: Contractor Manager, Master Servicer, Statewide Marketing Implementer, etc.)

Publicly Owned Utilities (“POUs”): In California, municipal or community-managed Load Serving Entities.

3. CITY FUNDING OF ADMINISTRATIVE AND CREDIT ENHANCEMENT COST UNDER THE MOA

CITY will provide CAEATFA with funding to support the administration of the GoGreen Home Program (Administration Funds) and Credit Enhancements for Eligible Loans to CPAU customers (Credit Enhancement Funds). The total budget for Administrative Funds under this Agreement shall not exceed Two Hundred Fifty Thousand Dollars (\$250,000) and the total budget for Credit Enhancement Funds shall not exceed Six Hundred Thousand Dollars (\$600,000), with the total funding under this MOA not to exceed Eight Hundred Fifty Thousand Dollars (\$850,000) over the first two-year term of the Agreement.

If Parties decide to extend the Term to 5 years, the total budget for Administrative Funds under this Agreement shall not exceed Five Hundred Thousand Dollars (\$500,000) and the total budget for Credit Enhancement Funds shall not exceed One Million Five Hundred Thousand Dollars (\$1,500,000), with the total funding under this MOA not to exceed Two Million Dollars (\$2,000,000) over the full five-year term of the Agreement. See Exhibit 3 for details.

The Parties have agreed to a cost allocation methodology by which CAEATFA will allocate costs to CITY. The methodology will be consistent with CPUC Decision D.21-08-006 and is detailed in Exhibit 2.

Should the agreed upon budget for either Administrative Funds or Credit Enhancement Funds be fully utilized, and should CAEATFA not have another source of non-PPP ratepayer funds available to support Eligible Loans for CPAU customers, CAEATFA will cease enrolling Eligible Loans for CPAU customers in accordance with CPUC Decision D.21-08-006, until this MOA is amended and the CITY can secure additional funding. To the extent permitted by the Program Regulations and governing CPUC Decisions, CAEATFA will also cease performing additional administrative work detailed in Table 2Bi of Exhibit 2, including reporting obligations to CITY further detailed in Section 4 and Exhibit 4, and will take all reasonable steps so as not to incur any expenses for which payment would result in a total exceeding the maximum amount of compensation set forth herein.

3.1 Funding of Administrative Costs

CAEATFA will use Administrative Funds to cover administrative costs which include: Start-up/Development Costs to expand GoGreen Home to Palo Alto and CPAU customers as detailed in Table 2A of Exhibit 2, Ongoing Fixed Costs as detailed in Table 2Bi of Exhibit 2, and Variable (per loan) Costs as detailed in Table 2Bii of Exhibit 2.

3.2 Monthly Invoicing & Payment

- (i) Beginning the end of the first month following the date of execution and each month thereafter during the Term, within sixty (60) calendar days after the end of each month, CAEATFA shall submit to CITY an invoice for its actual Administrative Costs incurred in the prior month.
- (ii) CITY will pay each monthly invoice no later than forty five (45) calendar days after receiving the monthly invoice.

3.3 Funding of Credit Enhancement Cost, CE Funding Requests, Establishment and Management of Trustee Accounts

3.3.1 Funding of Credit Enhancement Cost

CAEATFA will use Credit Enhancement Funds to make contributions to PFCs' LR Accounts, in accordance with Program Regulations, for Eligible Loans to CPAU customers that enroll in the Program. Credit Enhancement Funds will be allocated to PFC LR Accounts only as Eligible Loans enroll in the Program and will be recaptured as Eligible Loans are paid off, per Program Regulations. In the event of a customer default, Credit Enhancement Funds that have been allocated to PFCs' LR Accounts may be expended to pay an approved claim to a PFC, in accordance with Program Regulations. Tables 3 and 4 of Exhibit 2 further detail the management of Credit Enhancement Funds.

The Holding Account, Program Account, and LR Accounts for each PFC are trustee accounts established and maintained by CAEATFA's trustee bank in accordance with the Program Regulations, to hold Credit Enhancement Funds. The Holding Account and Program Account hold unencumbered funds. The LR Accounts hold encumbered funds for the benefit of the PFCs, per Program Regulations.

3.3.2 Establishment and Operation of Trustee Accounts, and Funding Requests

City of Palo Alto Holding Account. CAEATFA shall establish a Holding Account with its contracted trustee bank for GoGreen Home to hold CITY funds to be used for Credit Enhancements. This account will hold unencumbered funds separately from any PPP IOU ratepayer or any other sources of funds. CAEATFA shall use the Holding Account solely:

- (i) to receive Credit Enhancement Funds provided by CITY in accordance with this Agreement, and
- (ii) to hold funds due to be returned to the City of Palo Alto.

City of Palo Alto Program CE Account. CAEATFA shall also establish a Program Account with the contracted trustee bank for GoGreen Home from which Credit Enhancements will be transferred to PFC LR Accounts in accordance with the Program Regulations. This account will also hold unencumbered funds separately from any PPP IOU ratepayer or any other sources of funds. The Program Account shall be used:

- (i) to transfer Credit Enhancement Funds to PFC LR Accounts for enrollment of Eligible Loans made to CPAU customers in accordance with Program Regulations and Exhibit 2, and
- (ii) to recapture funds as part of the annual rebalance of PFCs' LR Accounts, per the Program Regulations.

CAEATFA will draw on the Holding Account only to fund the Program Account. CAEATFA will draw from the Program Account only as required to provide Credit Enhancements for Eligible Loans in accordance with the Program Regulations and Cost Allocation Methodology detailed in Exhibit 2.

CE Funding Requests. After initial seed funding of \$50,000 to the Holding Account, CAEATFA shall direct CE Funds requests to CITY in increments of a maximum of \$100,000.00, depending on real or anticipated need to fund the Program Account.

Upon receiving a request for CE Funds from CAEATFA, CITY will approve and disburse the requested funding to CAEATFA within fourteen (14) calendar days.

Interest. CAEATFA shall use commercially reasonable efforts to cause the Holding Account and Program Account to be interest-bearing accounts that accrue interest in U.S. dollars, and such interest will be re-deployed as loss reserve contributions to PFCs.

Account Information. CAEATFA shall direct its Trustee to provide the CITY with electronic access to the Holding and Program Accounts and to monthly statements reflecting account activity.

3.3.3 Return of Uncommitted Funds from Trustee Accounts

Uncommitted Funds are Credit Enhancement Funds provided by the CITY, and held in the Holding Account, or in the Program Account that have not been allocated to a PFC's LR Account, or that have already been recaptured from PFC's LR Accounts.

Upon termination of this MOA,

- (i) CAEATFA shall return Uncommitted Funds to CITY within thirty (30) calendar days, except as specified below, unless the Parties agree to extend the Agreement, and
- (ii) As Eligible Loans pay off and CAEATFA performs periodic rebalance and recapture of funds from PFCs' LR Accounts back to the Program Account, per the Program Regulations and per Table 3 in Exhibit 2, CAEATFA shall return those funds not less than annually to CITY.

However, should the CITY decide to terminate this MOA ahead of the Term, within fourteen (14) calendar days after receiving written notice from CITY, CAEATFA shall perform necessary communications with GoGreen Home PFCs and contractors, and all other Program contributors to terminate deal flow for Eligible Loans that would require funding from CITY. Within one hundred twenty (120) calendar days of receiving notice, CAEATFA shall return all Uncommitted Funds from the Program Account and Holding Account to CITY. The return of funds from PFCs LR Account will be processed annually until all outstanding loans to CPAU customers are paid-off by CPAU customers or charged off by the PFCs.

4. DATA AND REPORTING

4.1 Data Sharing

On a monthly basis, CAEATFA will provide CITY with data related to enrolled GoGreen Home Eligible Loans for which CITY provides Administrative Funds and Credit Enhancement Funds. Specific data to be

shared are further detailed in Exhibit 4. This data is necessary for CITY to track and reconcile Variable (per loan) costs and Credit Enhancement Funds contributed to PFCs' LR Accounts for enrolled Eligible Loans. It is also necessary to evaluate progress toward the City's Sustainability Implementation Plan and the impact of marketing and education efforts.

The GoGreen Home Program Regulations include a Customer Privacy Disclosure allowing CAEATFA to share Personal Information with CITY, as a program funder. However, CAEATFA and CITY will establish a secure file transfer protocol for sharing project and customer data.

CITY will share with CAEATFA data on marketing and educational efforts, and data or information related to inquiries received about financing for CAEATFA to evaluate interest in GoGreen Home and Program performance. Specific data to be shared are further detailed in Exhibit 4.

5. TERM

This Agreement will commence on the date of execution, and unless terminated in accordance with this Agreement, will be in effect for 2 years.

Extension. The Parties may mutually agree to extend this Agreement for three additional years, in accordance with the existing budget outlined in Exhibit 3, without an amendment.

The Parties acknowledge that at such time that Eligible Loans to CPAU customers become a significant portion of GoGreen Home activity, CAEATFA will need to adjust the Cost Allocation Methodology detailed in Exhibit 2, in accordance with D.21-08-006. The Parties agree to re-negotiate the Budget and Cost Allocation structure at such time. To the extent there is sufficient budget remaining in the contract as specified in Section 3, such changes may be agreed to by amending the Exhibits, without the need to amend the body of the MOA.

This Agreement is subject to the fiscal provisions of the Charter of the City of Palo Alto and the Palo Alto Municipal Code, as amended from time to time. This Agreement will terminate without any penalty (a) at the end of any fiscal year in the event that funds are not appropriated for the following fiscal year, or (b) at any time within a fiscal year in the event that funds are only appropriated for a portion of the fiscal year and funds for this Agreement are no longer available. This Section shall take precedence in the event of a conflict with any other covenant, term, condition, or provision of this Agreement.

6. WARRANTIES

6.1 CAEATFA Warranties

CAEATFA represents and warrants that:

- a. Subject to appropriation, CAEATFA has full power, right, authority, and budget authorizations to execute this Agreement and to perform its obligations hereunder, and the execution of this Agreement has been duly and validly approved through all requisite actions on its part.

- b. CAEATFA shall assure that its operations, and all agreements with PFCs and Providers, comply with all of requirements of CPUC Decisions governing the Program, and the Program Regulations. CAEATFA holds (and throughout the Term will hold) all necessary permits, approvals, insurance, and licenses that are required to carry on its businesses in compliance with applicable laws.
- c. CAEATFA is not in default under any applicable law that materially and adversely affects its business or financial condition or its performance of its obligations under this Agreement.
- d. CAEATFA will use funds contributed by CITY pursuant to this Agreement solely to carry out the terms of this Agreement, in accordance with the terms of this Agreement, and for no other purpose.

6.2 CITY Warranties

CITY represents and warrants to CAEATFA that:

- a. It has full power, right and authority to execute this Agreement and to perform its obligations hereunder, and the execution of this Agreement has been duly and validly approved through all requisite actions on its part.
- b. It holds (and throughout the Term will hold) all necessary permits, approvals, insurance, and licenses that are required to carry on its businesses in compliance with applicable laws.
- c. It is not in default under any applicable law that materially and adversely affects its business or financial condition or its performance of its obligations under this Agreement.

7. DATA PROTECTION AND DATA SHARING

Each Party agrees to use a higher or the same degree of care it uses with respect to its own proprietary or confidential information or a reasonable standard of care to prevent unauthorized use or disclosure of the Personal Information.

CITY further acknowledges that CAEATFA as a public instrumentality is also subject to the Information Practices Act (Chapter 1 (commencing with Section 1798) of Title 1.8 of Part 4 of Division 3 of the California Civil Code) and pursuant to the Information Practices Act may be required to withhold certain Personal Information in its possession and may also be required to provide notice to individuals prior to releasing Personal Information as a condition of participation in the Program.

If, pursuant to this contract with CAEAFTA, CITY shares with CAEAFTA Personal Information as defined in California Civil Code section 1798.81.5(d) about a California resident, CAEAFTA shall maintain reasonable and appropriate security procedures to protect that Personal Information, and shall inform CITY immediately upon learning that there has been a breach in the security of the system or in the security of the Personal Information. CAEAFTA shall not use that Personal Information for direct marketing purposes without CITY's express written consent.

Each Party that receives Personal Information shall observe and comply with all applicable laws, including, but not limited to, data privacy, data protection, and consumer privacy laws.

8. LIMITATION OF LIABILITY AND FORCE MAJEURE

- a. Indemnification. To the extent permitted by law, the Parties agree that all losses or liabilities incurred by a Party shall not be shared pro rata but, instead, the Parties agree that each Party hereto shall fully indemnify and hold the other Party, their officers, Board members, Council members, employees, and agents, harmless from any claim, expense or cost, damage or liability, including that imposed for injury (as defined in Government Code Section 810.8) occurring by reason of the negligent acts or omissions of the indemnifying Party, its officers, Board members, Council members, employees or agents, under or in connection with or arising out of any work, authority or jurisdiction delegated to such Party under this Agreement. No Party, nor any officer, Board member, Council member, employee or agent thereof shall be responsible for any damage or liability occurring by reason of the negligent acts or omissions of the other Party hereto, their officers, Board members, Council members, employees, or agents, under or in connection with or arising out of any work authority or jurisdiction delegated to such other Party under this Agreement.
- b. Except as provided in section 8.a. of this Agreement, in no event will any Party be liable to any other Party for any lost profits, loss of business or other consequential, special, or indirect damages, even if it has been advised of the possibility of such damages.
- c. Force Majeure. Neither Party shall be in default in the performance of its obligations under this Agreement to the extent that such performance is prevented or delayed by any cause, existing or future, which is beyond the reasonable control of that Party, if Party notifies the other promptly of its inability to perform and the circumstances preventing or delaying performance and uses commercially reasonable efforts to re-commence performance as soon as is reasonably practicable.

9. TERMINATION

9.1 Default

- a. Either Party, by written notice of default to the other Party, may declare a default of the whole or any part of this Agreement, if such other Party has breached any of its obligations under the Agreement.
- b. Upon delivery of a notice of default, the breaching Party and non-breaching Party shall have a reasonable amount of time, but not greater than thirty (30) calendar days, to agree on a plan for the breaching Party to cure the default. Termination shall occur if the parties fail to agree on a plan for the breaching Party to cure within such notice period.

9.2 Voluntary Termination

- a. Either Party, by written notice to the other Party, may terminate this Agreement at any time.
- b. Upon delivery of a notice of voluntary termination, each party shall have a reasonable amount of time, but not greater than thirty (30) calendar days, to agree on a plan to terminate the Agreement,

including a termination date. The Termination Date shall be no greater than one hundred and twenty (120) calendar days after the parties reach an agreement on a plan to terminate.

9.3 Other Reasons

This Agreement will also be terminated upon reaching the end of the Term should the Parties choose not to extend the Agreement, upon exhaustion of Administrative or Credit Enhancement Funds, or GoGreen Home Program termination.

10. MISCELLANEOUS

10.1 Approval

This Agreement is of no force or effect until signed by all Parties.

10.2 Regulatory Oversight

The Parties each acknowledge and agree that this Agreement and the Program shall always be subject to the authority and discretion of the Commission, including review and modifications, as the Commission may direct from time to time in the exercise of its jurisdiction through the issuance of Commission Decisions.

10.3 Governing Law and Jurisdiction

This Agreement and performance under it will be governed by and construed in accordance with the substantive laws of the State of California and the United States of America without regard to choice of law principles. In the event that an action is brought, the parties agree that trial of such action will be vested exclusively in the state courts of California in the County of Santa Clara, State of California.

10.4 Notices

Any notice, request, statement, demand, claim, offer or other written instrument required or permitted to be given pursuant to this Agreement shall be in writing and shall be delivered by hand delivery, first class United States mail, overnight courier service or electronic mail, in each case at the address or e-mail address set forth below:

If delivered to CAEATFA,

California Alternative Energy & Advanced Transportation Financing Authority (CAEATFA)
915 Capitol Mall, Room 457
Sacramento, CA 95814
Attn: Executive Director
Email: caeatfa@treasurer.ca.gov
Phone: 916-651-8157

If delivered to CITY,

City of Palo Alto – City Attorney’s Office
250 Hamilton Avenue
Palo Alto, CA 94303
Attn: City Attorney’s Office
Email: city.attorney@cityofpaloalto.org
Phone: 650-329-2171

10.5 Counterparts

This Agreement may be executed in one or more counterparts and delivered by electronic means, each of which will be deemed to be an original, but all of which will together constitute one and the same agreement.

10.6 Binding effect

This Agreement, any instrument or agreement executed pursuant to this Agreement, and the rights, covenants, conditions, and obligations of the Parties are contained herein and therein, shall be binding upon the Parties and their successors, assigns and legal representatives.

10.7 Severability

If any provision of this Agreement is held invalid by a court with jurisdiction over the Parties to this Agreement, such provision will be deemed to be restated to reflect as nearly as possible the original intentions of the Parties in accordance with Applicable Law, and the remainder of this Agreement will remain in full force and effect.

10.8 Survival

Any provision of this Agreement that contemplates or governs performance or observance after termination or expiration of this Agreement will survive the expiration or termination of this Agreement for any reason.

10.9 Independent Contractor; No providers

No provision of this Agreement shall be construed or represented as creating a partnership, joint venture, or any similar relationship among the Parties, or any of them. Neither CAEATFA nor its Providers nor the employees, agents, or representatives of any of them shall be deemed to be agents, representatives, or employees of any other Party in connection with this Agreement. CITY does not have the right to control, nor have any actual, potential, or other control over the methods and means by which CAEATFA, any Provider or any of their respective agents, representatives, or employees conducts their independent business operations.

10.10 Prevailing Wage

The Parties agree that upgrade projects completed via the GoGreen Home Program described in this MOU are not subject to compliance with California public works requirements, including, but not limited to payment of prevailing wage, under Labor Code section 1720(c)(5)(C), as assistance provided for the rehabilitation of single-family homes.

10.11 Entire Agreement

This Agreement constitutes the entire agreement between the Parties with respect to its subject matter and merges, integrates and supersedes all prior and contemporaneous agreements and understandings between the Parties, whether written or oral, concerning its subject matter.

10.12 Amendments

No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties, and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the parties.

10.13 Construction Interpretation

The headings contained in this Agreement are for reference purposes only and do not affect in any way the meaning or interpretation of this Agreement. When a reference is made in this Agreement to an Article, Section, or Exhibit, such reference shall be to an Article or Section in, or Exhibit to, this Agreement. This Agreement was the product of drafting, review, and negotiation by and among the Parties. Each of the Parties was represented by counsel or had the opportunity to seek counsel during negotiations. Accordingly, the Parties agree that there shall be no presumption against any Party about any ambiguity or uncertainty in this Agreement, and no Party shall be deemed to be the draftsman of this Agreement. Unless otherwise expressly stated "day," "week," "month," and "year" mean calendar day, week, month, and year, respectively. All references to times and days are based on Pacific Standard Time, United States of America. When used in this Agreement, the term "including" means "including but not limited to." Whenever this Agreement specifically refers to any law, tariff, Governmental Authority or other organization, the reference also refers to any successor to such law, tariff, Governmental Authority, or other organization.

Authorized representative signatures

CITY OF PALO ALTO

City Manager

APPROVED AS TO FORM:

City Attorney or designee

Exhibits

- Exhibit 1: Scope of Work & Implementation Tasks
- Exhibit 2: Cost Allocation Methodology Shared with CPUC for Expansion of GoGreen Home Program to City of Palo Alto Customers
- Exhibits 3: Budgets, Invoicing & Management of Trustee Accounts
- Exhibit 4: Data Sharing

Exhibit 1: Scope of Work & Implementation Tasks

Task A: Incorporating CPAU customer eligibility to participate in GoGreen Home

Upon execution of the MOA, CAEAFTA will diligently work towards incorporating CPAU customers into all aspects the Program, including updating the program website, informing PFCs and the Program's contractor networks, and establishing a launch date after which PFCs may begin submitting loans for enrollment in the Program.

Task B: Publicizing the Program to CPAU Customers

In coordination with **Task A**, CITY will publicize the Program to CPAU customers. These activities include:

- Updating CITY websites and link to Program website established by CAEAFTA
- Educating and informing CITY staff and CITY contractors who provide services to CPAU customer with information about GoGreen Home and how customers apply for loans
- Developing information for distribution at community events, bill inserts, cobranding, etc.

Publicizing financing opportunities of the Program to CPAU customers will be key to Program utilization and the Parties commit to collaborating on marketing and outreach initially and then during the entire Term of the Agreement.

Task C: Establishment and Management of Trustee Accounts

CAEAFTA will set up a Holding Account and a Program Account for CITY, which shall be trustee accounts established and operated by CAEAFTA to hold unencumbered Credit Enhancement Funds. CAEAFTA shall also establish trustee LR Accounts that hold encumbered funds for the benefit of the PFCs, according to Program Regulations.

Task D: On-going Activities and Operations under the MOA

Beginning the first month following the date of execution, CAEAFTA will invoice CITY monthly for actual Administrative Costs. Separately, CAEAFTA will request CE Funds periodically as agreed. Once this MOA is executed, CE Funds are provided to CAEAFTA, and other necessary steps are performed, CAEAFTA will begin accepting and enrolling Eligible Loans submitted for CPAU customers according to Program Regulations.

Additionally, upon execution of the MOA, both teams will meet on regular intervals for information sharing.

Exhibit 2: Cost Allocation Methodology Shared with CPUC for Expansion of GoGreen Home Program to City of Palo Alto Customers

CHEEF Program expansion: Incorporation of non-ratepayer funds

Original Cost Allocation Methodology referred to in D.21.08.066
 (red text shows clarifications post Decision)

City of Palo Alto Customers:
 Clarifications and specifications

Table 1. Expense Overview by Category

Categories and examples of expenses	Proposed Cost Allocation	Reasoning
1. Past investment E.g. <i>Industry research, establishment of regulations, building website, lender and contractor recruitment, etc.</i>	IOU Ratepayers meaning EE PPP Funds	These costs were incurred to set up the CHEEF and CHEEF Programs for ratepayers. Expanding the Program now does not change the fact that these costs were necessary to launch.
2. Ongoing operational costs to maintain programs "as-is" (i.e. financing for IOU-fuel measures only) E.g. <i>Contracts, labor, operating expense and equipment (OE&E).</i>	IOU Ratepayers meaning EE PPP Funds	The CHEEF would continue to incur these costs whether or not the Program removes limit on 30% non-IOU fuel measures. If expansion of the Program leads to more projects in IOU territory, as expected, fixed operational costs would be spread over a larger volume of loans and rate-payers would experience cost-inefficiencies.
3. Incremental cost to expand financing to include non-IOU fuel measures A. Start-up: <i>operational changes to allow for expanded eligibility</i> B. Ongoing: <i>E.g. Inspections of electric-saving measures in POU territory, review and processing of loan enrollments, credit enhancement contribution for electric measures in POU territory (Note: not an expense unless a claim payment is made)</i>	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	These costs would [mostly] not be incurred by ratepayers if measure eligibility were not being expanded

All measures will be "non-IOU fuel measures" so most of same logic as originally presented to and approved by CPUC applies

Table 2: Identifying Incremental Costs for Expansion to non-IOU fuel measures

2A. Start-up/Development costs (examples)	Proposed Cost Allocation	Potential Methodology and Notes
Contracts		
Contractor Manager: E.g. Time spent updating training materials, communicating expansion to contractors, QA set-up, building additional reporting infrastructure	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Could be allocated by 1) actual time spent, 2) pro-rata of monthly historical charges or 3) estimate of hours
Master Servicer: E.g. Database build out	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Billable by specific task order and invoiced hours
Marketing Implementer: E.g. Updating information on gogreenfinancing.com	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Allocated by invoiced hours including coordination with CAEATFA. (Not a CAEATFA-administered contract. SoCalGas-administered)
CAEATFA Labor		
Operations: E.g. Updating forms and data collection and tracking, updating accounting procedures, coordination with Trustee	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Determine a percentage of time for a # of FTEs for an estimated period
Outreach and education: E.g. updating websites, roll-out of new rules to Lenders, updating program materials, etc.	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Determine a percentage of time for a # of FTEs for an estimated period

2B. Ongoing costs (examples)	Proposed Cost Allocation	Potential Methodology and Notes
2Bi. Fixed Costs		
Contracts		
Master Servicer monthly fee	IOU Ratepayers meaning EE PPP Funds	Not an incremental expense; cost is incurred with or without expansion
Trustee Bank monthly fee	IOU Ratepayers meaning EE PPP Funds	Not an incremental expense; cost is incurred with or without expansion
Contractor Manager ME&O, Support, Enrollment	Shared	Determine a percentage of effort and apply pro-rata to invoiced hours or look at contractor service territory to allocate Support and Enrollment costs
Contractor Manager monthly costs for Training and Reporting	IOU Ratepayers meaning EE PPP Funds	Not an incremental expense; cost is incurred with or without expansion
Other Expenditures and Equipment		
Overhead	IOU Ratepayers meaning EE PPP Funds	Not an incremental expense until expansion requires hiring additional FTEs and more usage of office equipment, etc.
Conferences, event sponsorships, travel	Shared Continue to bill EE PPP Funds because no events are actually planned right now. Will revisit if this changes.	Allocated by specific conference or event expenses
Labor		
Program, ME&O and compliance staff	Shared Continue to bill EE PPP Funds because staff currently regularly handle eligibility questions around IOU/POU splits. Only the actual eligibility is changing, not the workload.	Pro-rata portion of a # of FTE(s) in each unit to support the expanded program
2Bii. Variable Costs		
Technical consultant Fees	Shared	Allocated based on time billed
Loans with only non-IOU fuel measures		
Transaction Expense Examples (per loan)		
Loan review and enrollment (Master Servicer)	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Allocated based on # of loans
QA Desktop reviews (Contractor Manager)	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Allocated based on # of loans
QC Site-inspections (Contractor Manager)	Non-IOU Ratepayer Source meaning source outside of EE PPP funds	Allocated based on # of loans

Slight change from what was revised to CPUC for TECH. This will be a shared cost. For City of Palo Alto, CAEATFA staff will be getting loan questions from lenders CAEATFA otherwise wouldn't have gotten. Also, experience with TECH has shown that CAEATFA needs to budget time for ongoing accounting, invoicing and reporting. Therefore CAEATFA will bill a prorata portion of some FTE time for this category.

Table 3: Credit Enhancement Management		
Encumbrance/Cost Examples	Proposed Cost Allocation	Potential Methodology and Notes
Loss Reserve Account set-up		Both ratepayer and non-ratepayer funds would be contributed to a lender's existing single loss reserve account(s) per one or more of the methodology options below in Table 4. Maintaining distinct loss reserve accounts for the lenders between different sources of funds would drastically diminish the value of the loss reserve as risk mitigation comes from having a pool of loans.
Loss Reserve Contributions to Lender's Accounts (Encumbered, but not expensed funds)	Shared	See methodology options in Table 4 below
Claims Payments (Expenses)	Shared	Paid to lenders from their Loss Reserve Account regardless of the fuel source makeup of the underlying measures. New loans with non-IOU fuel measures should have similar risk to old loans so the risk of default is proportional to the number of loans in the portfolio. More non-IOU fuel loans in the portfolio will mean more risk of default, but also come with more \$ in loss reserve contribution. As older, IOU-fuel only loans are paid off, funds are recaptured to the IOU Program account.
Recoveries	Shared	Recoveries on losses after claims will be repaid to the lender's loss reserve account or to the Program account(s), per Regulations.
Annual Rebalance (Recapture of encumbered funds)	Shared	The original loan loss reservation will be recouped for paid-off loans. The value of any contribution that was paid from ratepayer LLR funds will be returned to the ratepayer Program account and the value that was paid from non-ratepayer funds will be returned to the non-ratepayer Program account.

Table 4: Options for Allocating Loan Transaction Costs and Credit Enhancement Contribution for Loans with Both IOU and non-IOU Fuel Measures		
CAEATFA is presenting several options for comment and discussion.		
Note that the Program currently allows 30% of the Claim-Eligible Loan Principal to support non-IOU fuel measures.		
Allocation Option	Pros	Cons
<p>1. Pro-rata for each loan/project by measure fuel source. Allocate transaction costs and loss reserve contributions directly to measure costs. CAEATFA would use non-ratepayer funds first, whenever available, to pay for the pro-rata cost corresponding to the non-IOU measures. If non-ratepayer funds aren't available, CAEATFA would revert to rate-payer funds to allow for up to 30% of loan to support non-IOU fuel measures. Allowed additional related costs (e.g. landscaping) would have to be pro-rata allocated based on overall gas versus electric composition.</p> <p>This is the methodology preferred by the CPUC per D.21.08.006. See detail in next table.</p>	<p>Most "fair" method for ratepayers or other funding source as costs for all loans are pro-rated specifically to measures and corresponding fuel source. When feasible, CAEATFA prefers this method.</p> <p>If another funding source is available, CHEEF Programs don't need to use the 30% allowance for non-IOU measures.</p>	<p>The calculation for cost allocation is run uniquely for each loan. CAEATFA currently collects measure cost breakdown for REEL but not for SBF projects.</p> <p>Building envelope measures would have to be split and allocated between fuels.</p>
<p>2. Screen for non-IOU measures, then even split: Any project that includes a non-IOU fuel conserving measure will be allocated x% to ratepayer and x% to non-ratepayer costs.</p>	<p>Calculations are simple as all loans with non-IOU measures are treated the same. This would be easy to implement.</p>	<p>These methods are more estimated and less precise. We could end up with an allocation of costs that doesn't correspond to the types of measures by fuel source that end up being installed. For example, the non-ratepayer source could end up subsidizing a bunch of projects without any electric measures. Other potential funding partners may hesitate to participate as they would not be able to target funds toward specific technology. Since non-IOU fuel measures have only been offered previously in a very limited way, there is not much history on which to base a formula. Significant re-evaluation would be needed.</p>
<p>3. Treat all loans the same: A simple formula would be developed and applied to all projects for properties where the customer has a non-IOU fuel provider, regardless of any measures. We would assume a constant x% of costs allocated for gas and x% for electricity.</p>	<p>Calculations are simple as all loans to properties with a non-IOU fuel provider are treated the same.</p>	

Retaining same methodology as CPUC approved. Just clarifying here that all per-loan transaction costs and Credit Enhancement costs will be paid by City of Palo Alto because all measures will be non-IOU fuel measures.

Exhibit 3: Budgets, Invoicing & Management of Trustee Accounts

Estimated MOA Budget and NTE Budget (Assumes \$10M in loans; 1000 loans averaging \$10k each, over 5-years)							
	Year 1	Year 2	2-Year NTE Amount	Year 3	Year 4	Year 5	5-Year NTE Amount
Administrative Cost							
Start-up/Development Costs	\$ 41,250						
Ongoing Fixed Costs	\$ 30,000	\$ 30,000					
Variable (per loan) Costs	\$ 13,000	\$ 19,500					
Total Estimated Administrative Funds Required	\$ 84,250	\$ 49,500	\$ 250,000	TBD	TBD	TBD	\$ 500,000
Credit Enhancement Contributions							
CE to PFCs' LR Accounts - 15% of enrolled loan principal (Funds encumbered, but not expensed. Inclusive of seed to Holding Account)	\$ 150,000	\$ 225,000					
Total Estimated Credit Enhancement Funds Required	\$ 150,000	\$ 225,000	\$ 600,000	TBD	TBD	TBD	\$ 1,500,000
Annual Estimated Funds and MOA NTE Budget	\$ 234,250	\$ 274,500	\$ 850,000				\$ 2,000,000

Exhibit 4: Data Sharing

Where available, CAEATFA will provide CITY with the following data related to enrolled GoGreen Home Eligible Loans for which CITY provides Administrative Funds and Credit Enhancement Funds. CAEATFA may further agree to share other relevant data with CITY on request, subject to other agreements and applicable laws. CAEATFA will not report to CITY data on individual loan terms, but may on request report aggregated and anonymized loan data.

Category	Fields	Purpose
Borrower and Site	<ul style="list-style-type: none"> • Name • Contact Information • Site address • Utility Account Number • Number of units being upgraded 	<ol style="list-style-type: none"> 1. Match GGH borrowers with CPAU customer projects
Measure(s)	<ul style="list-style-type: none"> • Installed Energy Efficiency Measure name, quantity, equipment cost, and whether the installation resulted in fuel substitution? 	<ol style="list-style-type: none"> 1. Document popularity of EE measures alongside heat pump technology 2. Document progress toward CITY’s electrification initiative goals
Project	<ul style="list-style-type: none"> • Completion and Enrollment Dates • Total Project Cost 	<ol style="list-style-type: none"> 1. Track # projects and program uptake by CPAU customers 2. Reconcile Variable (per loan) Cost spend
Participating Contractor	<ul style="list-style-type: none"> • Name or DBA • California State License Board number 	<ol style="list-style-type: none"> 1. Document participating contractors to plan future outreach 2. Measure frequency, diversity, and consistency of contractor participation

For the initial two-year Term, energy savings achieved as a result of installation of Energy Efficiency measures will be calculated according to a “deemed savings” approach, in line with CAEATFA’s established methodologies. If the Term is extended, CAEATFA and CITY intend to revisit whether this approach continues to serve the needs and requirements for both Parties, and will amend the data sharing processes and requirements if necessary.



GoGreen Home Financing

Utilities Advisory Commission

July 5, 2023



- What is it?
 - Electrification and Energy Efficiency financing program
 - Authorized by the California Public Utilities Commission (CPUC)
 - Administered by the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) with support from Investor-Owned Utility (IOU) ratepayers.
 - Available everywhere served by an electric or gas IOU (nearly everywhere in California)

- Program recently became available to publicly owned utilities like Palo Alto

- Staff recommends joining GoGreen Home to make program available in Palo Alto



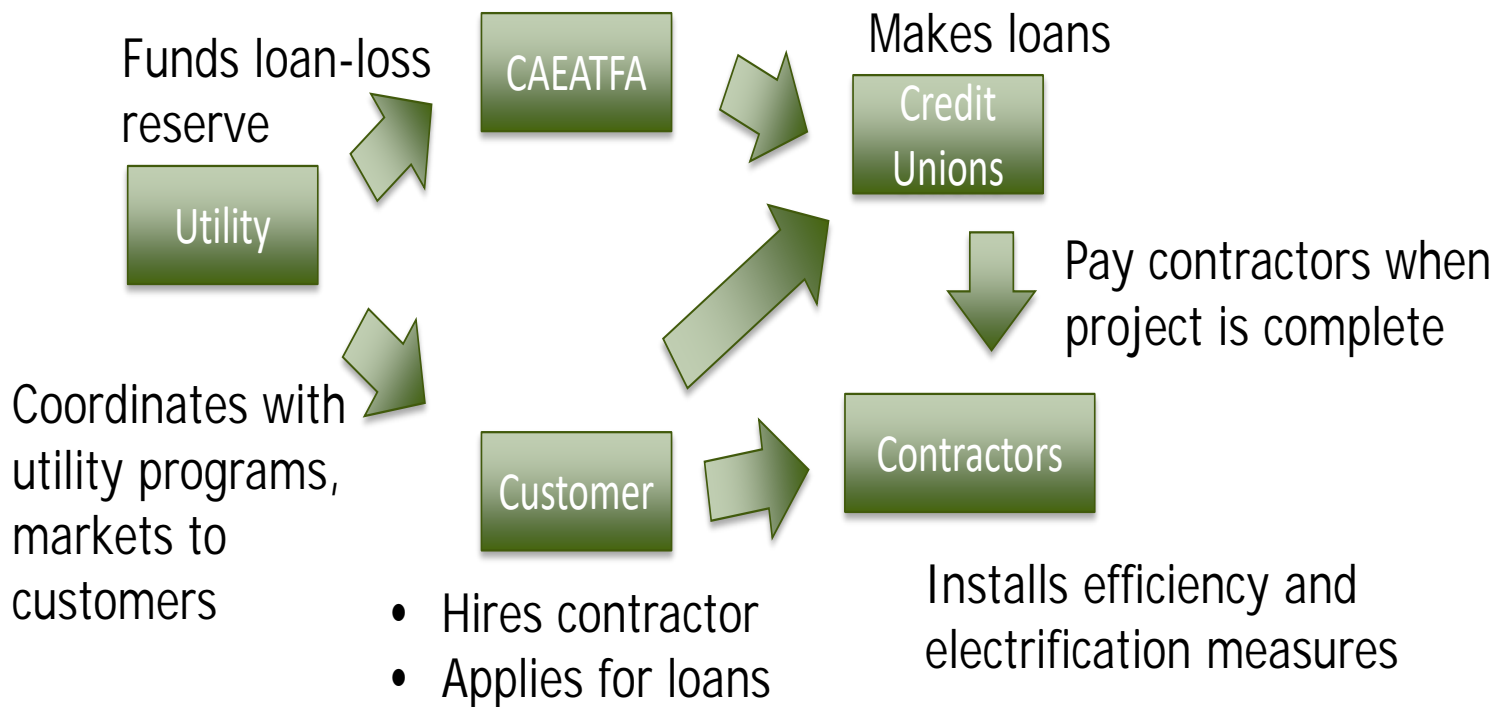
Consumer benefits

- Loans for building electrification and water/energy efficiency projects. Includes electrical work
- No money down, no collateral
- Can finance 100% of the project up to \$50,000.
- 15 year max term.
- Competitive rates (4%-8%)
- List of Bay Area qualified contractors who work with the program, or hire your own for some project types
- Can use up to 30% of loan amount for unrelated renovation costs



How is this program run?

- A State agency, the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA), manages a public-private partnership
 - Administers program
 - Holds loan loss reserves





□ Role in the S/CAP

- Potential source of financing for heat pump water heater (HPWH) program (e.g. larger projects that require panel upgrades)
- Potential source of financing for expanded electrification programs (HVAC, other appliances, whole home electrification)
- State agency in charge (CAEATFA) runs many financing programs, could be a good partner for new creative financing mechanisms as we scale up S/CAP programs

□ Costs to participate:

- \$50,000 in startup costs + \$40,000 per year in admin costs for Palo Alto
- Loan loss reserve contribution of about 16% of total Palo Alto loans made.
- City only contributes as loans are made, and contribution is returned to the City after last loan payment.
- Loan loss reserve could experience losses if there are defaults – in practice this is limited to about 16% of the loan, but in theory it could be larger.
- Credit unions run credit checks to reduce the likelihood of loss

GoGreen Home Financing Program - Timeline



- CAEATFA & Palo Alto finalize MOA – February
- S/CAP Committee Review and Recommendation – April 21, May 19th
- UAC Consideration – Today
- Council Consideration – August 2023
- GoGreen Home becomes available to Palo Alto residents – Fall 2023



Staff Requests the Utilities Advisory Commission recommend the City Council

1. Approve Participation in the GoGreen Home Financing Program and
2. Approve the use of the City's Cap and Trade Reserve funds to cover the cost of the Program.



Utilities Advisory Commission Staff Report

From: Dean Batchelor, Director Utilities
Lead Department: Utilities

Meeting Date: July 5, 2023
Staff Report: 2301-0799

TITLE

Discussion of Electric Supply Portfolio Modeling Results

RECOMMENDATION

This memorandum and presentation are for discussion purposes only; no action is requested at this time.

EXECUTIVE SUMMARY

The presentation accompanying this memorandum provides some preliminary results from electric supply portfolio modeling efforts carried out by Utilities staff (with consulting support) for the Integrated Resource Plan (IRP). The City is required by state legislation (Senate Bill 350) to complete the IRP by the end of this year, and staff has been focused on this effort since the kickoff discussion with the Utilities Advisory Commission (UAC) in June 2022 ([Staff Report 14279¹](#)). The 2023 IRP is intended to ensure that the City manages its electric resources consistent with state and federal regulatory and legislative requirements, the City's climate sustainability goals, and the Utilities Department's strategic planning objectives. And, more concretely, it will provide a basis for making key portfolio management decisions in the near- to mid-term range, including: (a) whether to renew the City's hydroelectric contract with the Western Area Power Administration (WAPA), which expires at the end of 2024, or replace this contract with other carbon-free resources; and (b) determining the best use of the City's 51 MW share of the California-Oregon Transmission Project (COTP) after the City's layoff of that asset expires at the beginning of 2024.

This presentation provides an update of the City's long-term electric load forecast, along with an overview of the City's existing electric supply portfolio and the results of two capacity expansion modeling runs.² It is important to note that these results are preliminary, representing the first

¹ <https://www.cityofpaloalto.org/files/assets/public/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2022/06-08-2022/06-08-2022-id-14279-item-4-irp.pdf>

² A capacity expansion model is a tool used in long-term electric supply planning that simulates generation and transmission capacity investment, given assumptions about future electricity demand, fuel prices, technology cost

iteration of the capacity expansion model. Staff is continuing to work to refine the assumptions that feed into the model and test additional planning scenarios and assumptions; staff expects to return to the UAC in the fall to present these additional results along with the final IRP report. These preliminary results are instructive nonetheless, providing clear indication that: (a) the renewed WAPA contract looks very competitive at this point; (b) demand-side resources also appear very cost-effective; and (c) the City faces a real need to acquire additional generation capacity within the next five years due to anticipated load growth and the expiration of older renewable energy contracts.

ENVIRONMENTAL REVIEW

The UAC's discussion of these modeling results is not a project requiring California Environmental Quality Act review, because it is an administrative governmental activity which will not cause a direct or indirect physical change in the environment.

ATTACHMENTS

Attachment A: Electric Portfolio Modeling Results Presentation

APPROVED By:

Dean Batchelor, Director of Utilities

Staff: Jim Stack, Senior Resource Planner

and performance, and policy and regulation. The City has contracted with Ascend Analytics to utilize their PowerSIMM modeling tool for this purpose.



Electric IRP Modeling Results

Utilities Advisory Committee

July 5, 2023

Discussion Outline

1. IRP background
2. Palo Alto electric load projections through 2045
3. Overview of the current electric supply portfolio
4. Candidate resources to meet projected load growth
5. Preliminary IRP modeling results
6. Preliminary findings
7. Next steps

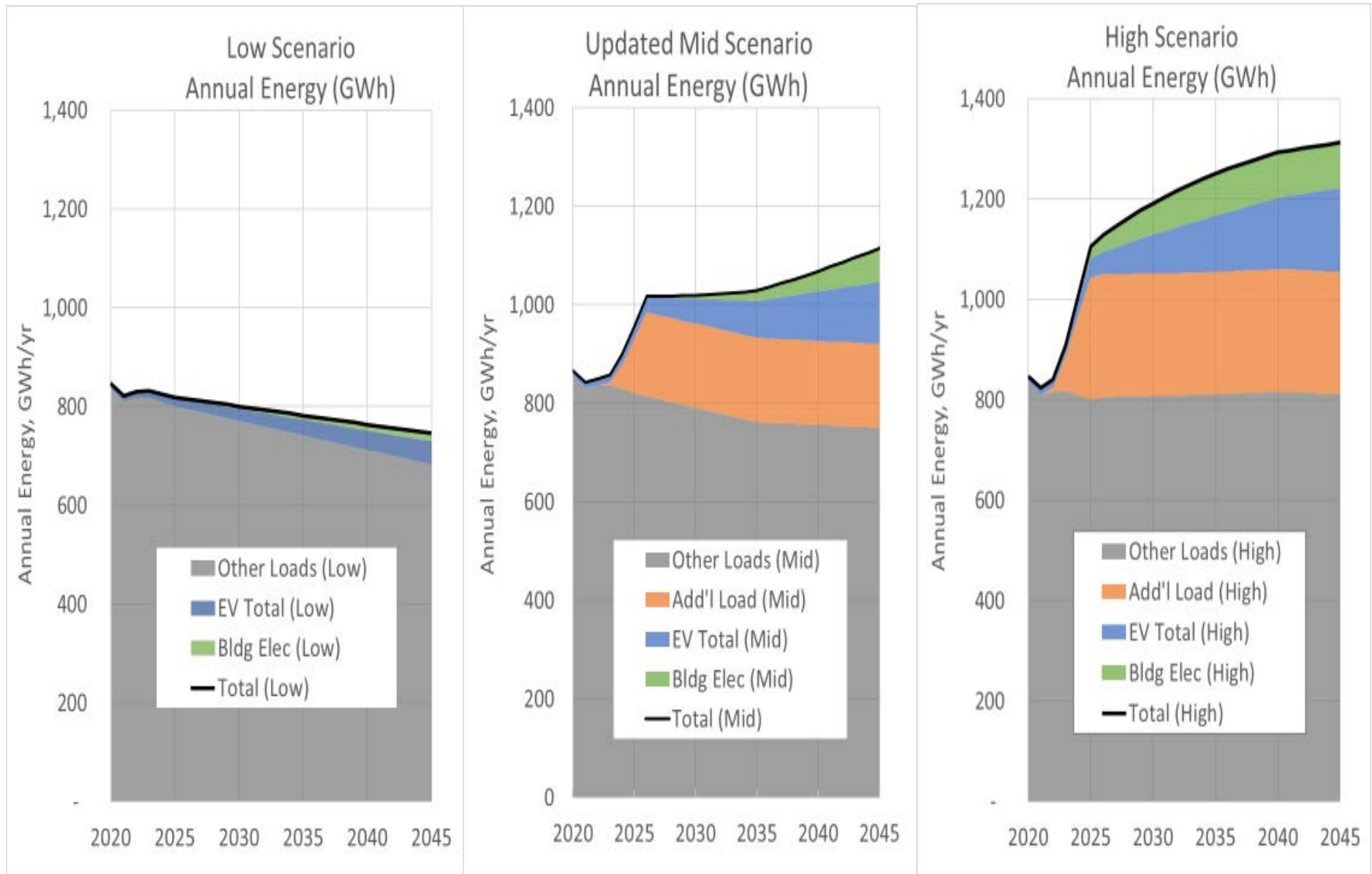
WHAT IS AN INTEGRATED RESOURCE PLAN?

- A roadmap for meeting forecasted demand through a combination of supply-side (i.e. generation) and demand-side (e.g. efficiency, demand response, storage) resources
- Analysis framework for identifying the most cost-effective, least-risk portfolio of resources

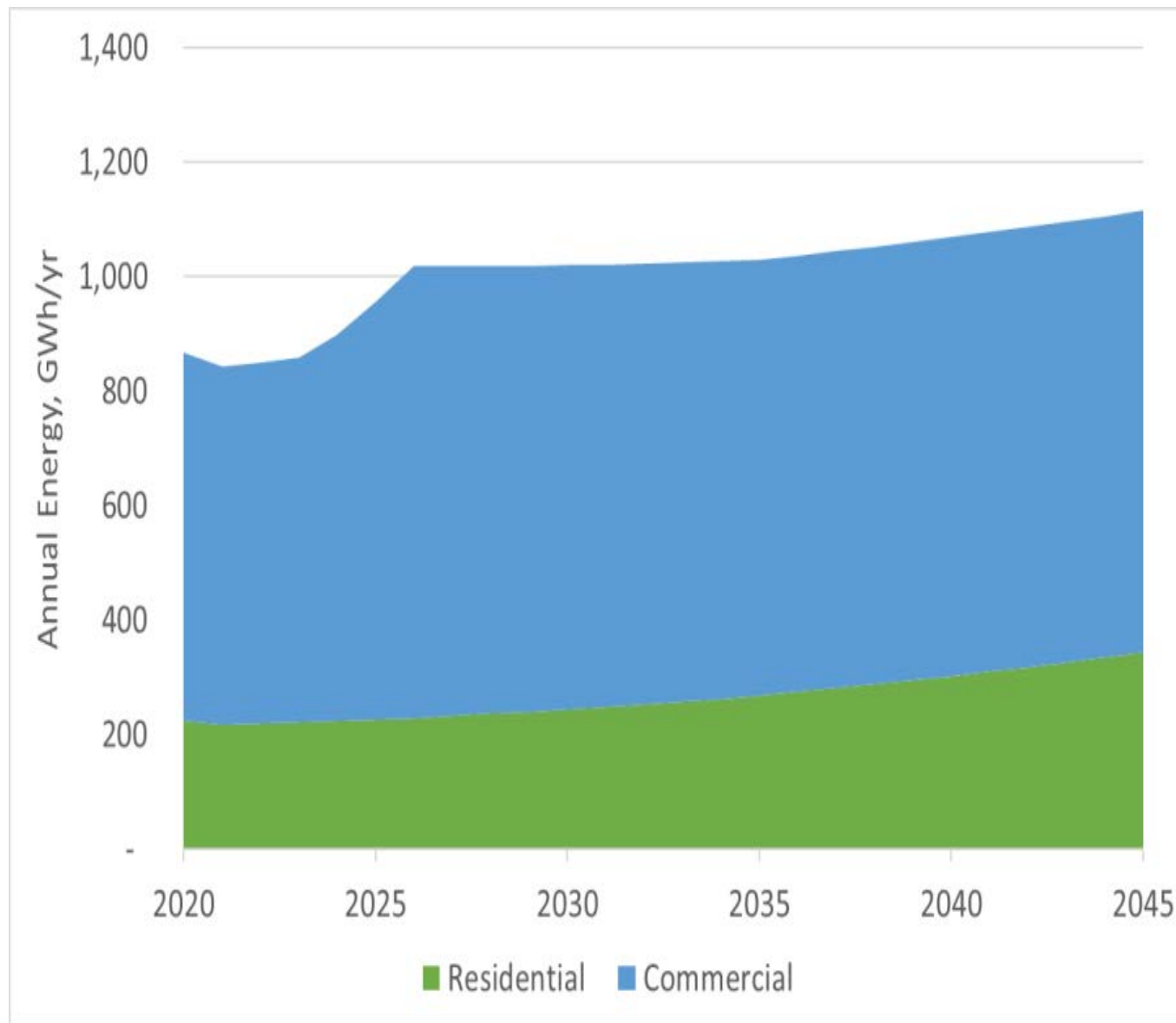
FACTORS CONSIDERED IN AN IRP

- **Loading Order** – Pursue all cost-effective energy efficiency and demand-side resources
- **Regulatory Compliance** – Comply with all regulatory requirements
- **Climate Goals** – Maintain a carbon neutral electric portfolio
- **Customer Preferences** – Facilitate individual customer preferences for alternative resources
- **Cost** – Identify the most cost-effective approach to meet policy directives
- **Risk Management** – Structure the portfolio or add mitigations to manage known risks

Palo Alto Electric Load Projections Through 2045



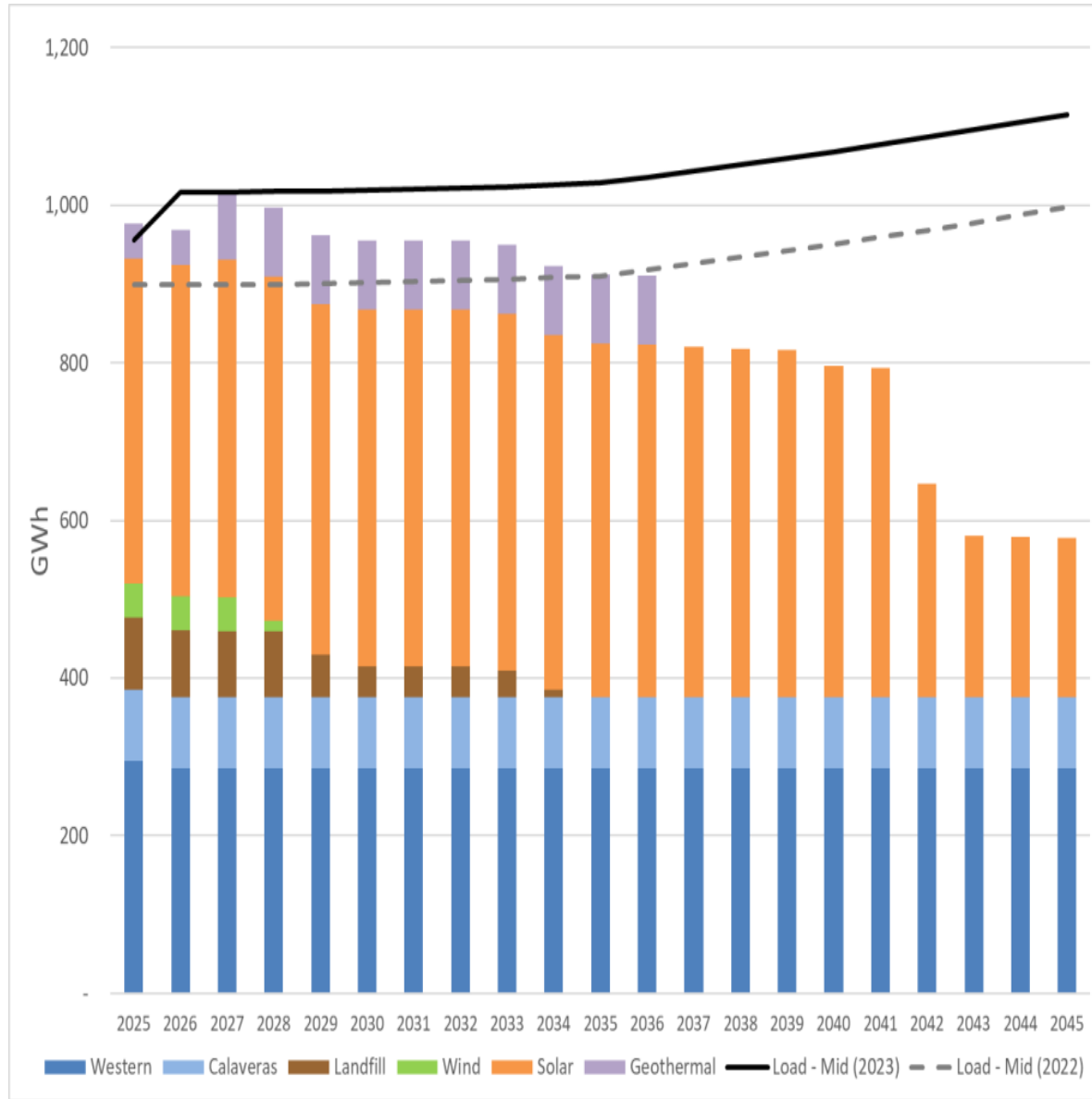
Load Projection by Customer Class ("Mid" Scenario)



Current Electric Supply Portfolio

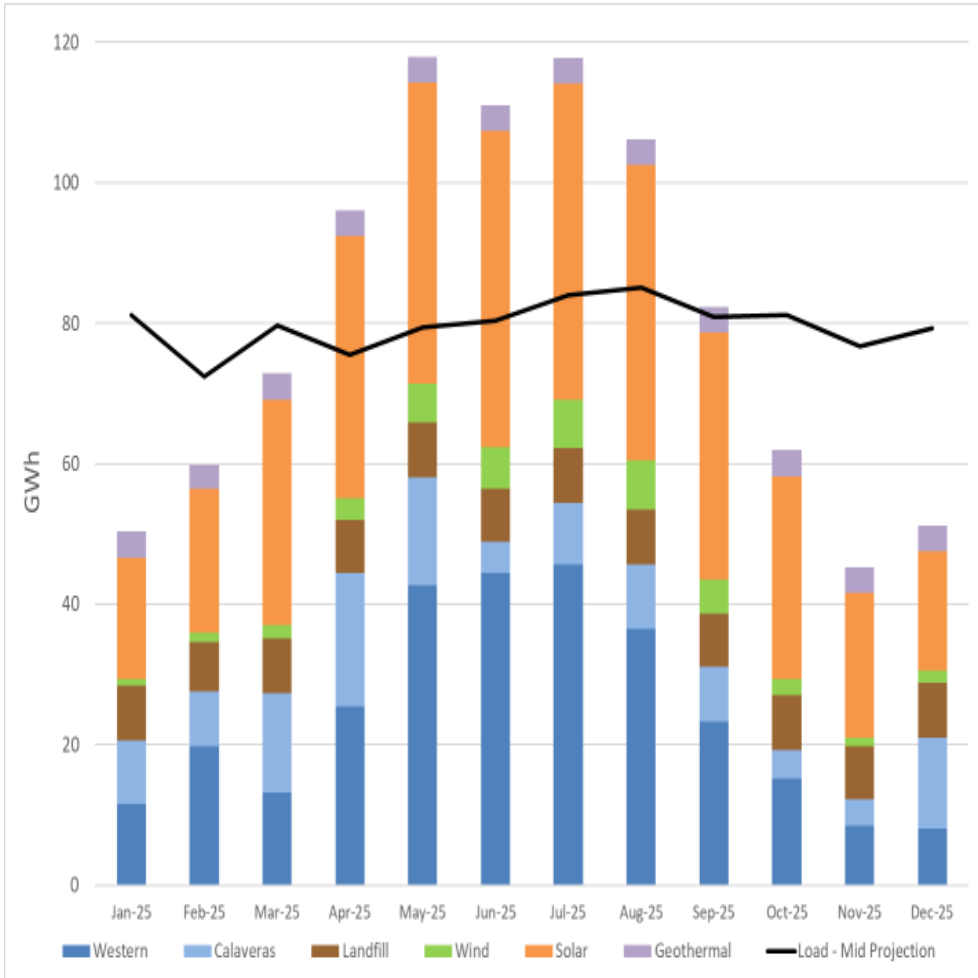
Project	Technology	RPS Resource?	Contract Start Date	Expiration Date	Nameplate Capacity (MW)	Net Qualifying Capacity (MW)	Annual Energy (GWh)	Levelized Cost (\$/MWh)
High Winds	Wind	Yes	Dec-04	2028	30	5	43	58
Santa Cruz LFG	Landfill Gas	Yes	Feb-06	2026	3	2	9	62
Ox Mountain LFG	Landfill Gas	Yes	Apr-09	2029	11	5	42	59
Keller Canyon LFG	Landfill Gas	Yes	Aug-09	2029	4	2	14	71
Johnson Canyon LFG	Landfill Gas	Yes	May-13	2033	1	1	10	124
San Joaquin LFG	Landfill Gas	Yes	Apr-14	2034	4	4	29	118
EE Kettleman Land	Solar PV	Yes	Aug-15	2040	20	0	53	77
Elevation Solar C	Solar PV	Yes	Dec-16	2041	40	35	101	69
Western Antelope Blue Sky Ranch B	Solar PV	Yes	Dec-16	2041	20	18	50	69
Frontier Solar	Solar PV	Yes	Jul-16	2046	20	0	53	69
Hayworth Solar	Solar PV	Yes	Dec-15	2042	27	19	64	69
Rosamond Solar	Solar PV	Yes	Jun-21	2047	26	8	75	34
Calpine Geo	Geothermal	Yes	Jan-25	2036	50 (100)	5 (10)	88	79
Collierville	Large Hydro	No	1998	N/A	253	58	~100	N/A
Western Base Resource	Large Hydro	No	2004	2024	269	114	~290	N/A

Annual Load-Resource Balance through 2045

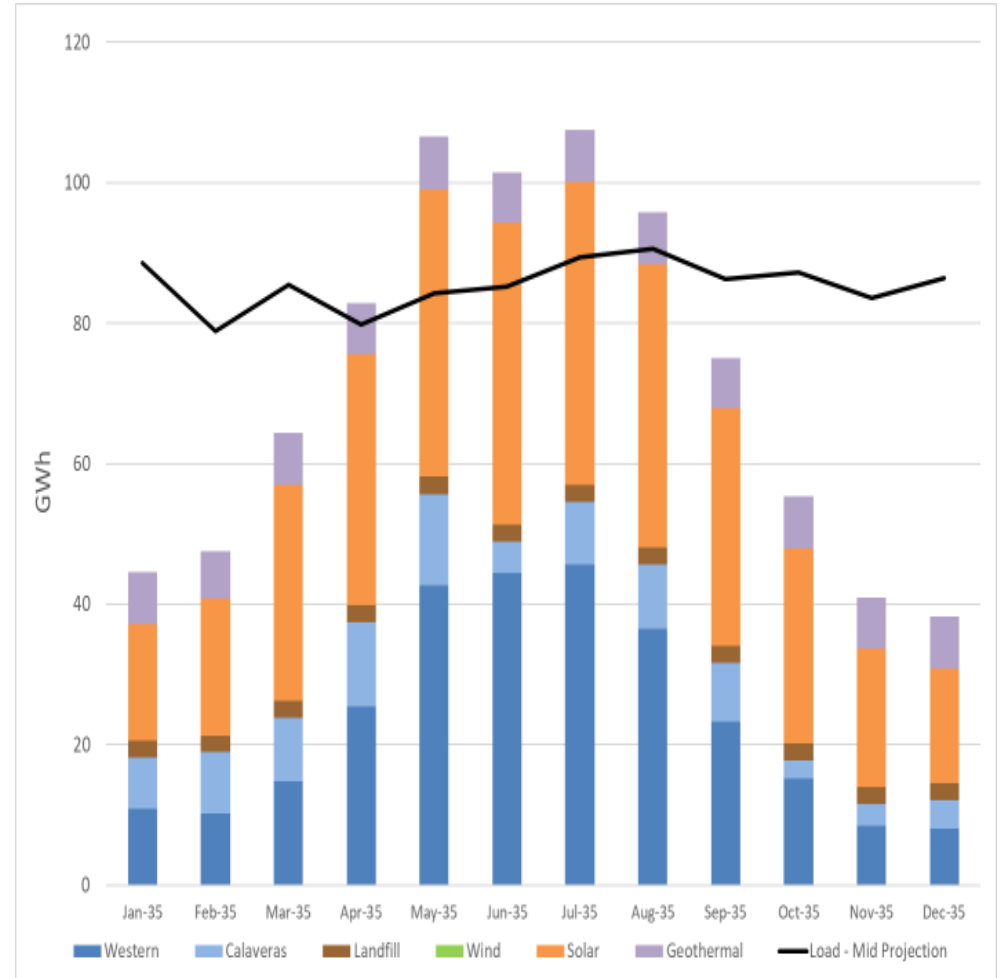


Monthly Energy Balances in 2025 and 2035

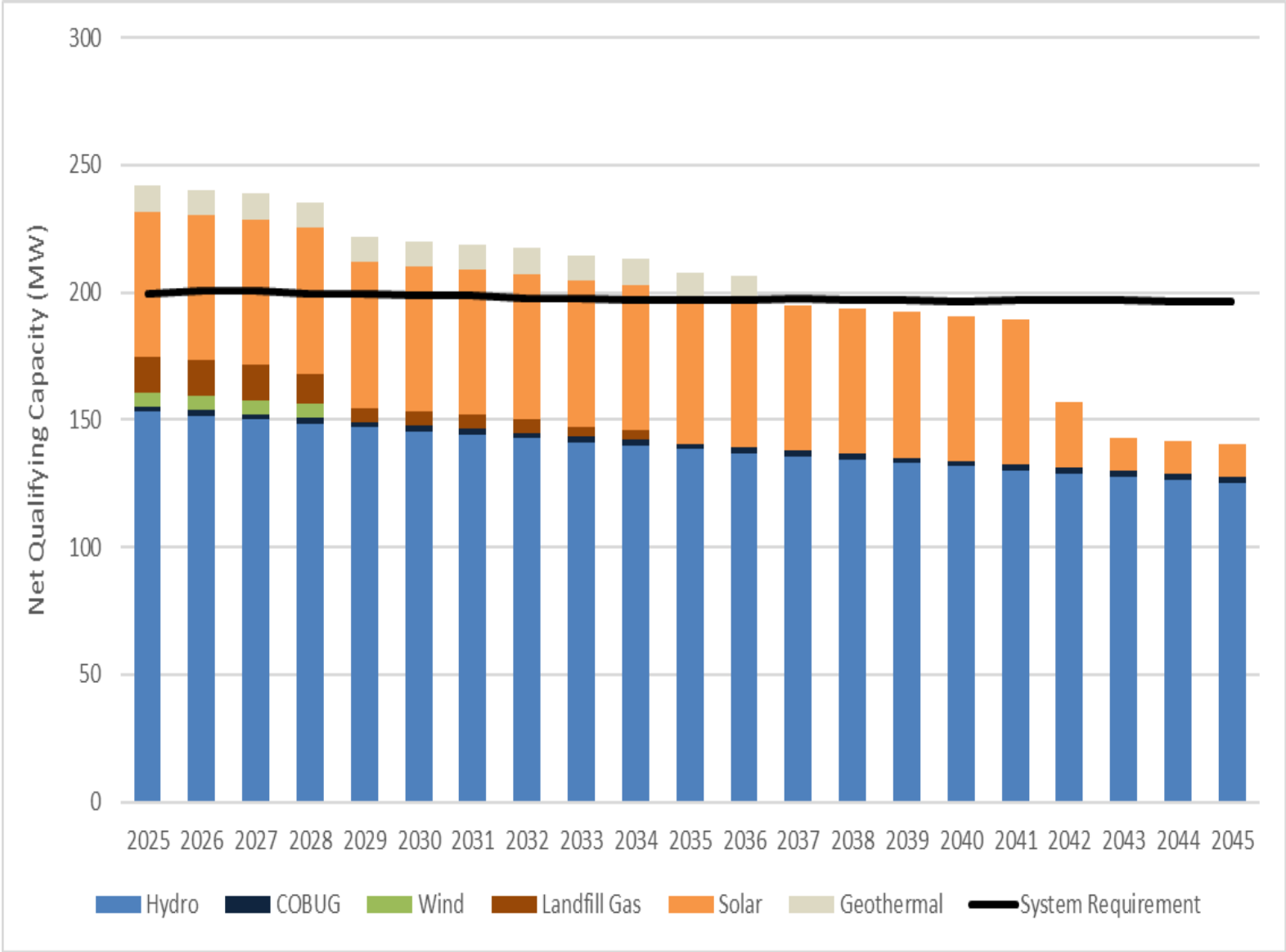
2025



2035

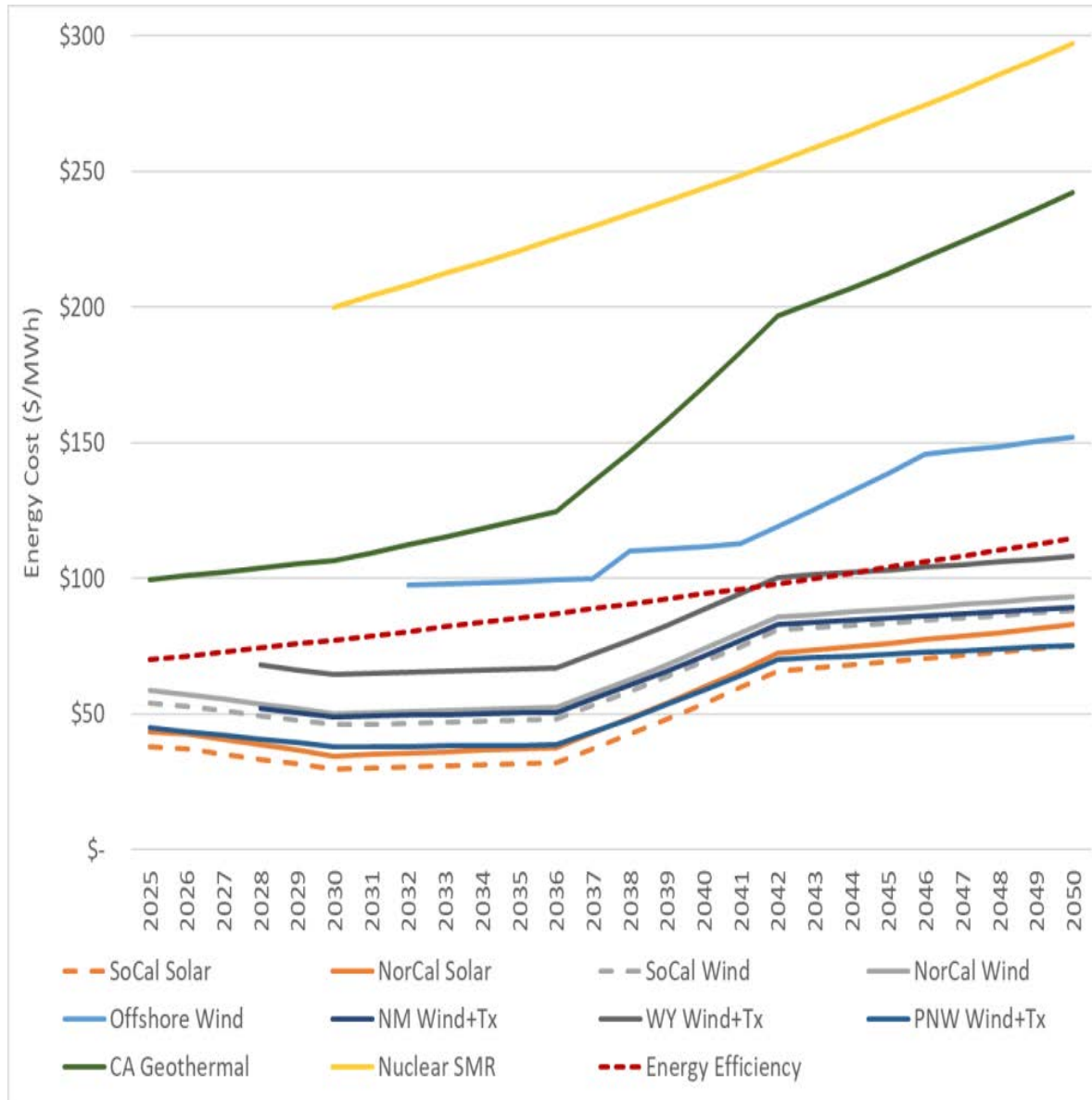


Annual Capacity Balance through 2045



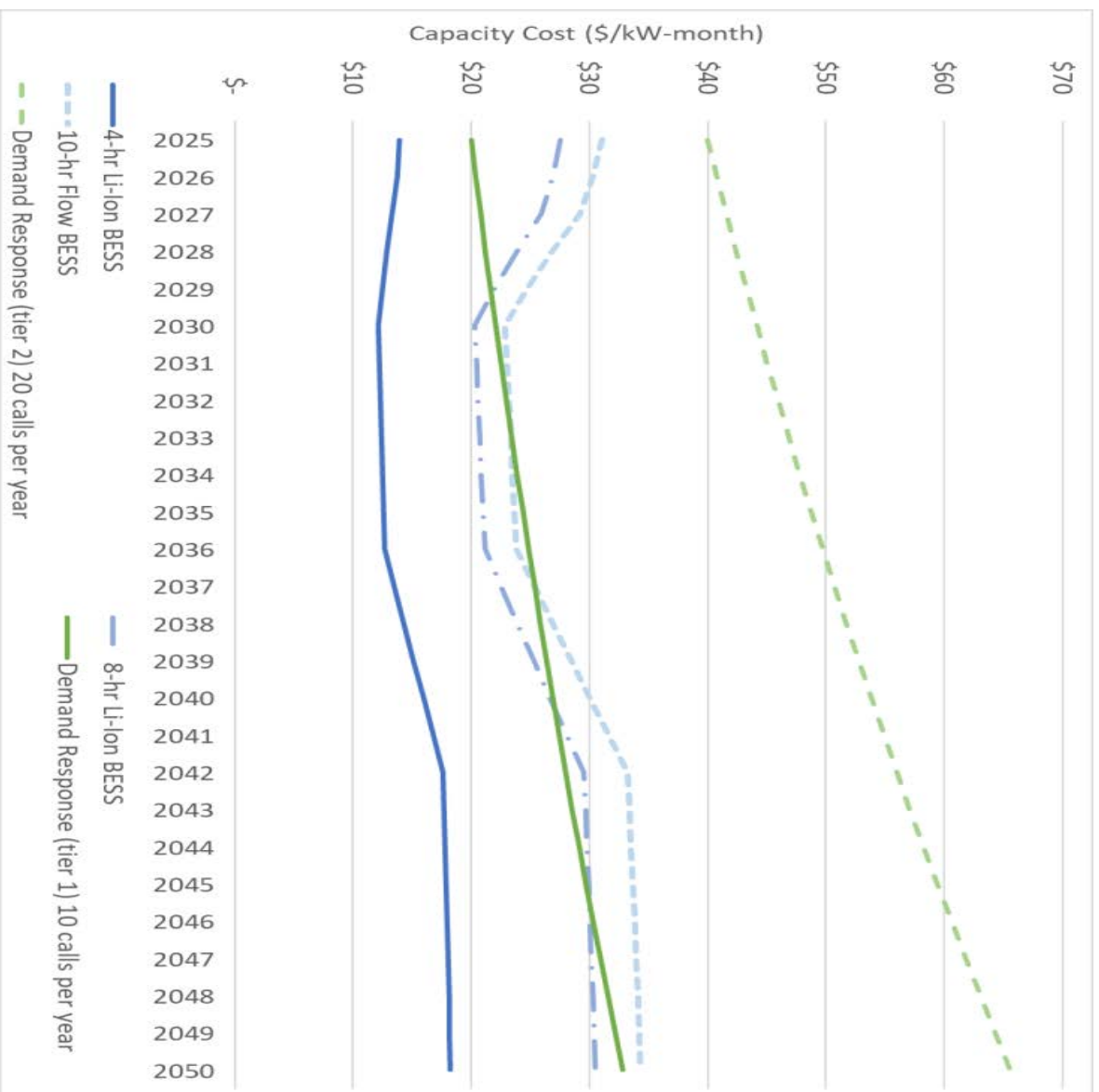
Capacity Expansion Modeling Inputs

Candidate Plant Summary – Generation Resources



**** Note ****
All modeling assumptions from Ascend Analytics

Candidate Plant Summary – Batteries & Demand Response



**** Note ****
All modeling assumptions from Ascend Analytics

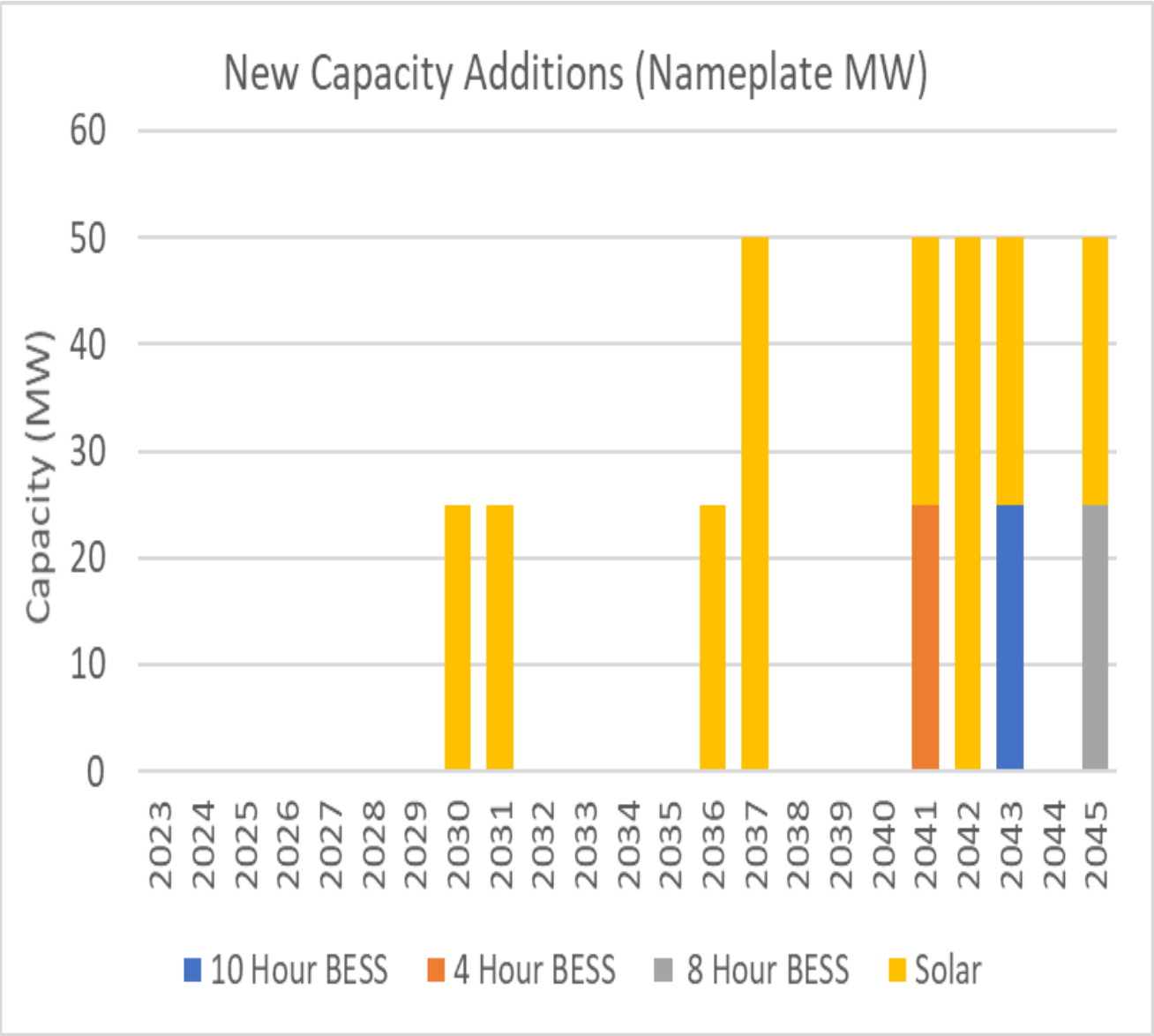
Preliminary Modeling Results

Caveat: “All models are wrong, but some are useful.” – George Box

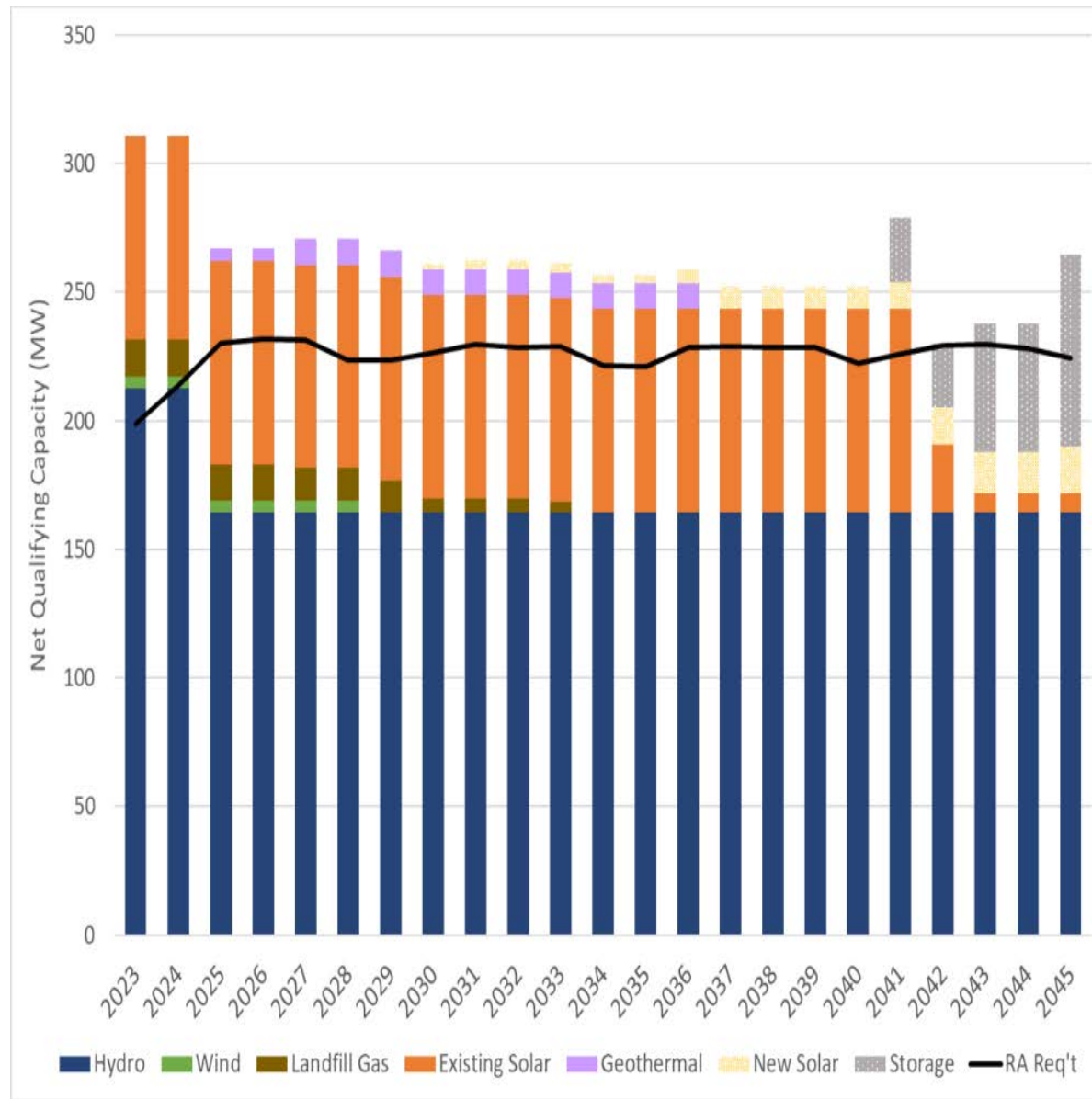
Valuation of Current Electric Supply Portfolio

Project	Annualized Costs/Values (2025-2044) (\$M)				
	Contracted Cost	Energy Value at LMP Node	REC Value	Capacity Value	Mark-to-Market
High Winds	2.5	2.4	1.0	0.4	1.3
Santa Cruz LFG	0.7	0.8	0.3	0.2	0.6
Ox Mountain LFG	3.0	2.4	1.1	0.6	1.1
Keller Canyon LFG	1.2	0.9	0.4	0.2	0.4
Johnson Canyon LFG	1.5	0.7	0.3	0.2	(0.3)
San Joaquin LFG	4.1	2.3	0.9	0.5	(0.5)
EE Kettleman Land	4.1	1.9	1.2	0.0	(1.0)
Elevation Solar C	6.9	3.8	2.6	3.2	2.6
Western Antelope Blue Sky Ranch B	3.5	1.9	1.3	1.6	1.3
Frontier Solar	3.6	1.9	1.3	0.0	(0.4)
Hayworth Solar	4.4	1.9	1.2	1.7	0.4
Rosamond Solar	2.6	2.9	1.8	0.4	2.5
Calpine Geo	6.9	5.5	2.0	1.0	1.5
Collierville	8.1	8.0	0.2	4.9	5.0

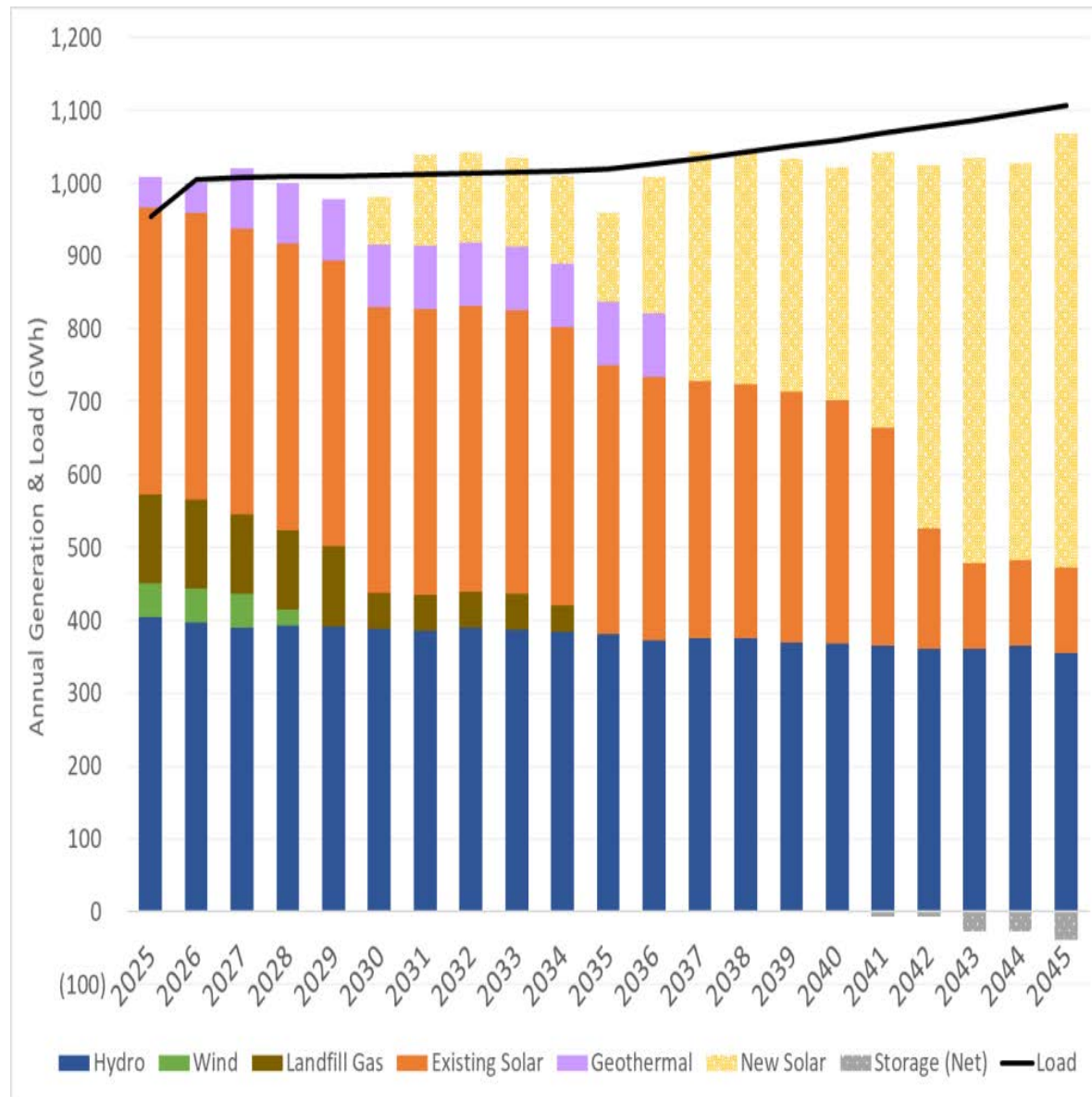
Preliminary Modeling Results – Capacity Expansion (with Storage)



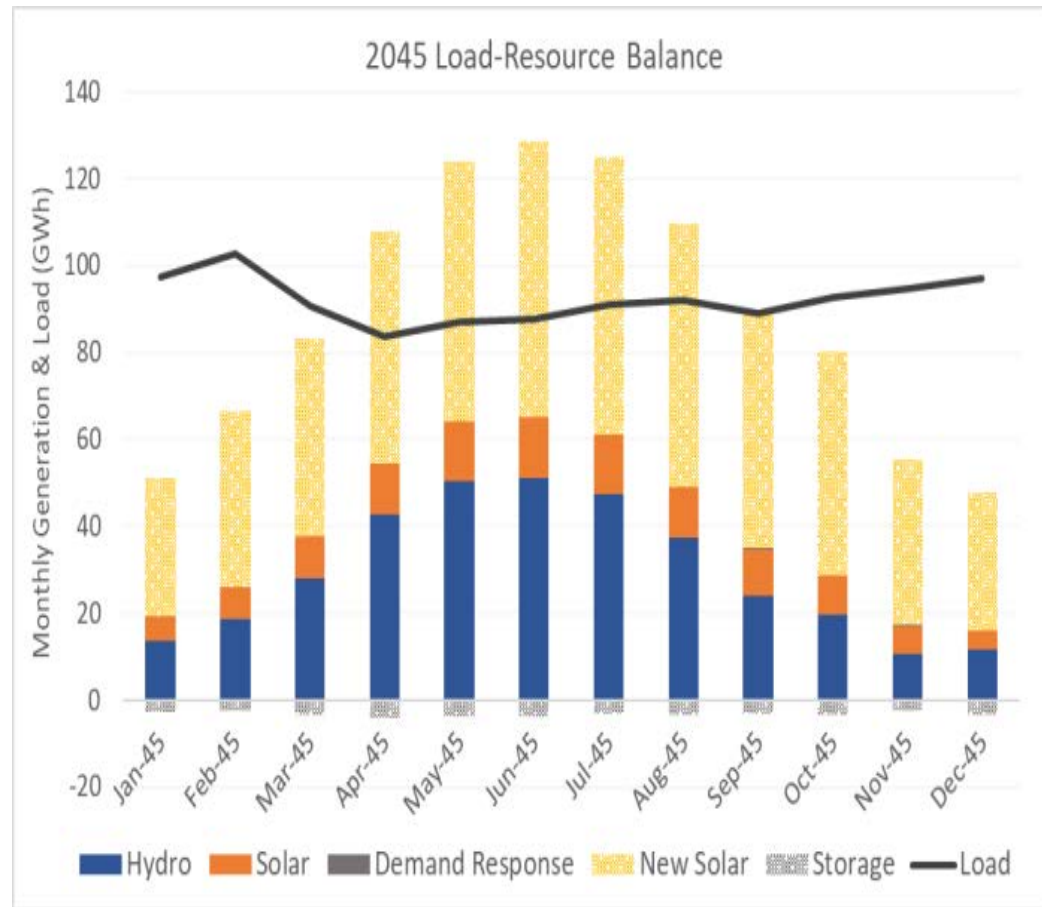
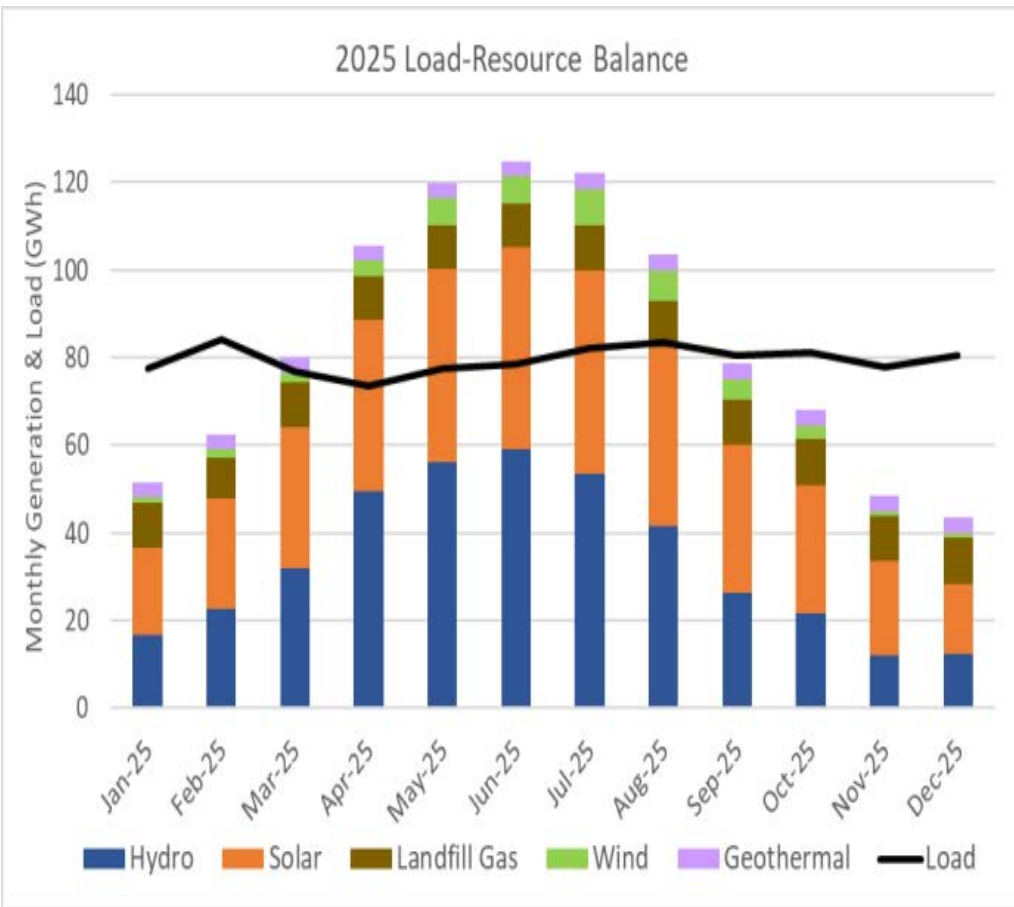
Preliminary Modeling Results – Capacity Expansion (with Storage)



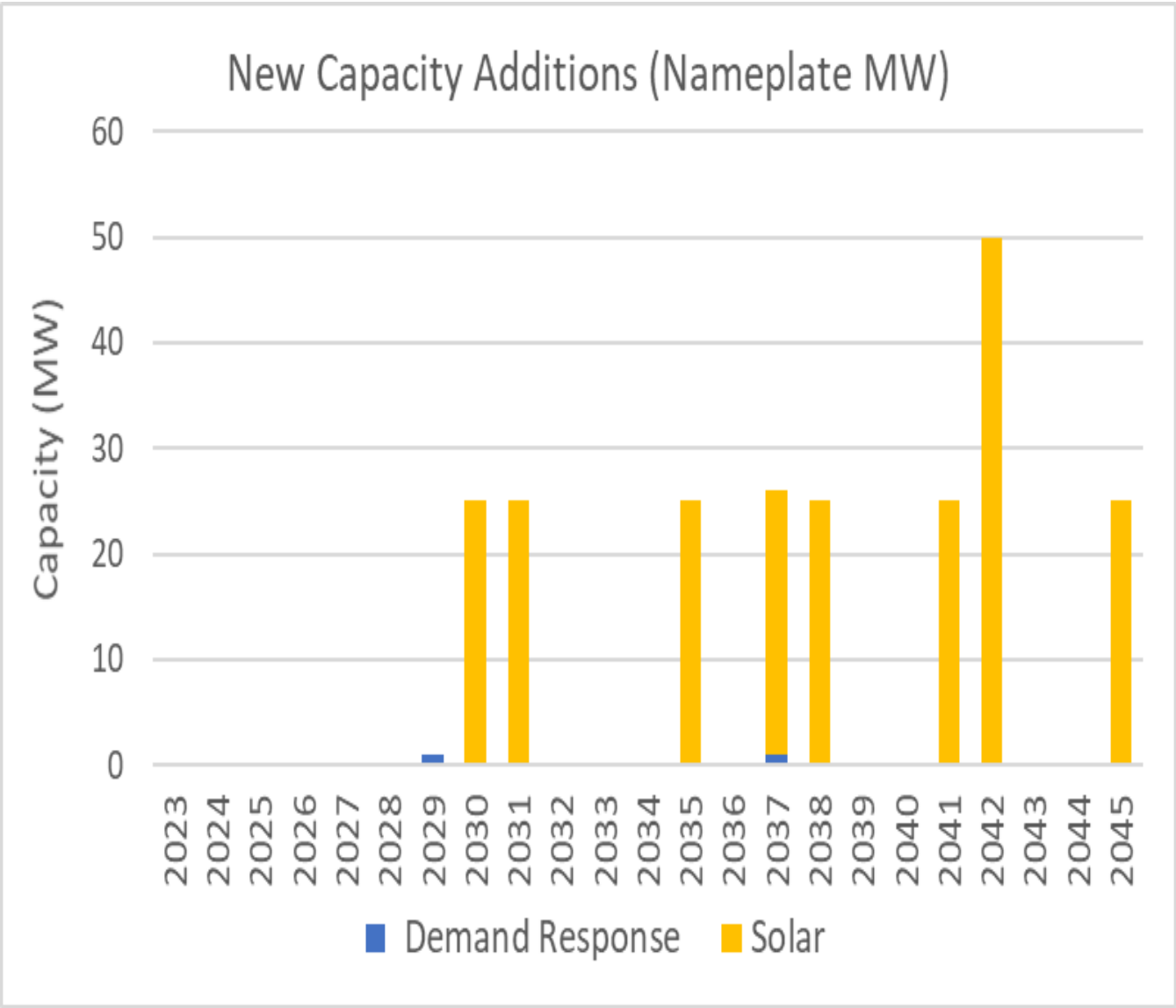
Preliminary Modeling Results – Annual Energy (with Storage)



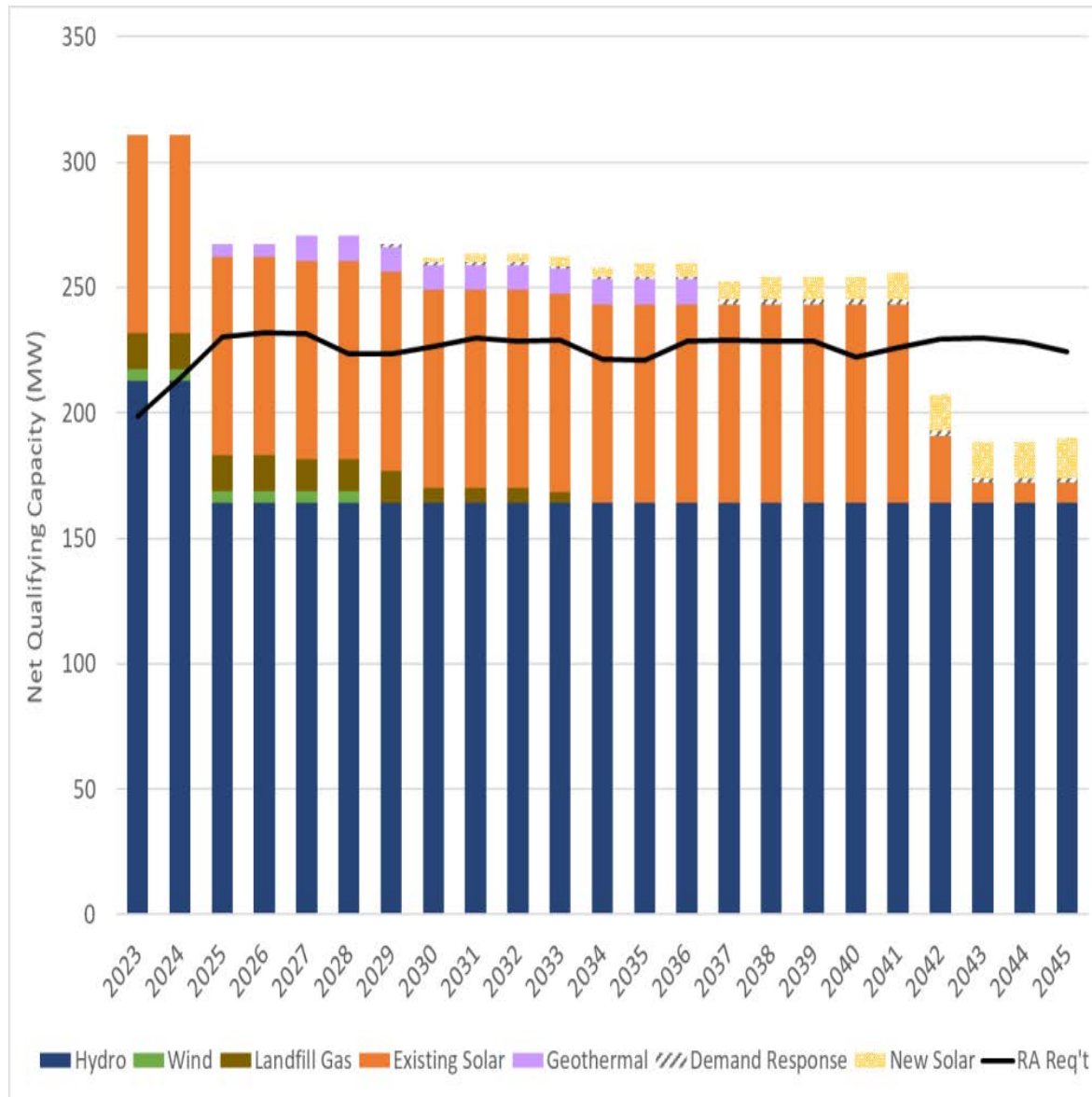
Preliminary Modeling Results – Monthly LRB in 2025 & 2045 (with Storage)



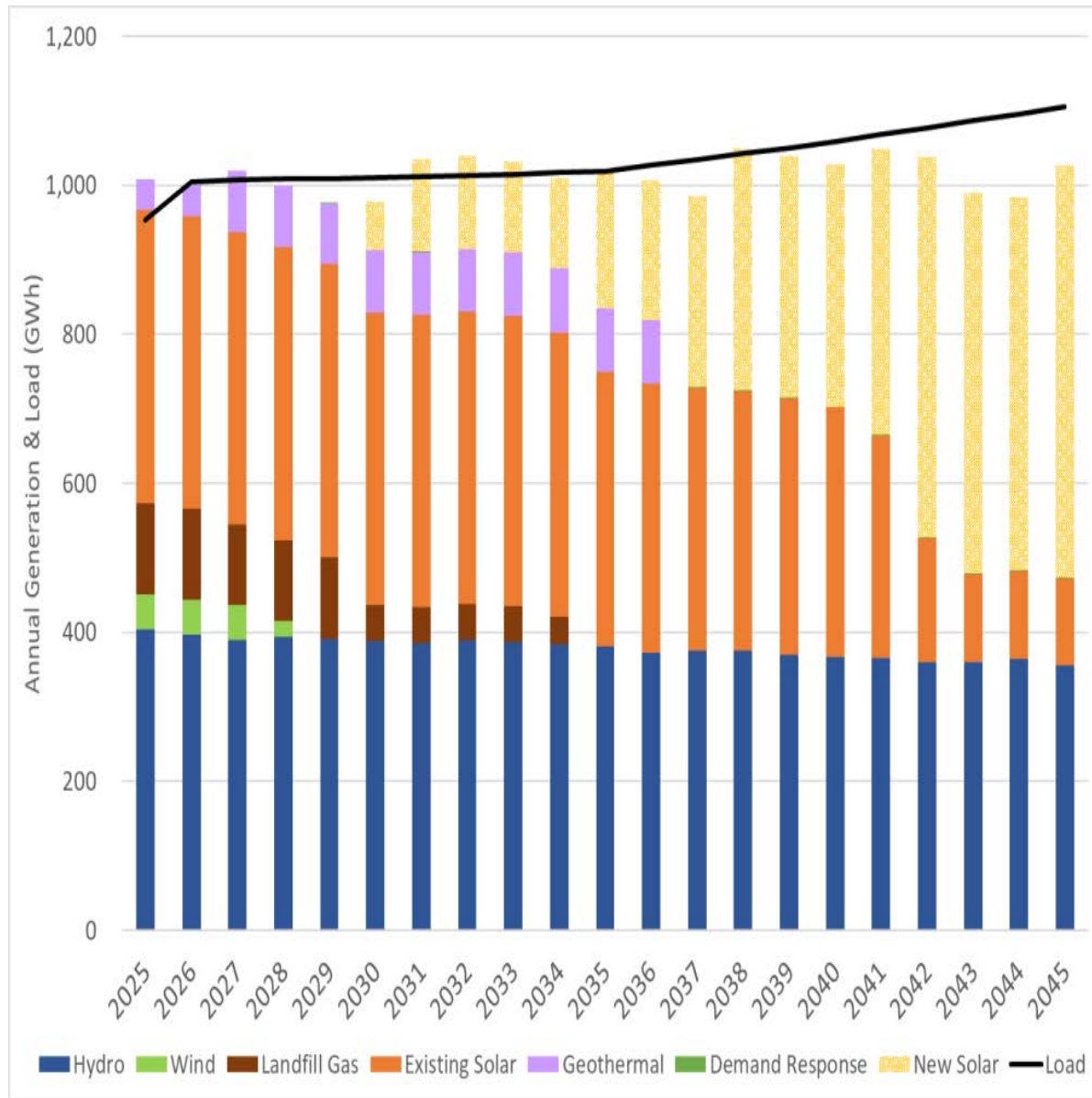
Preliminary Modeling Results – Capacity Expansion (No Storage)



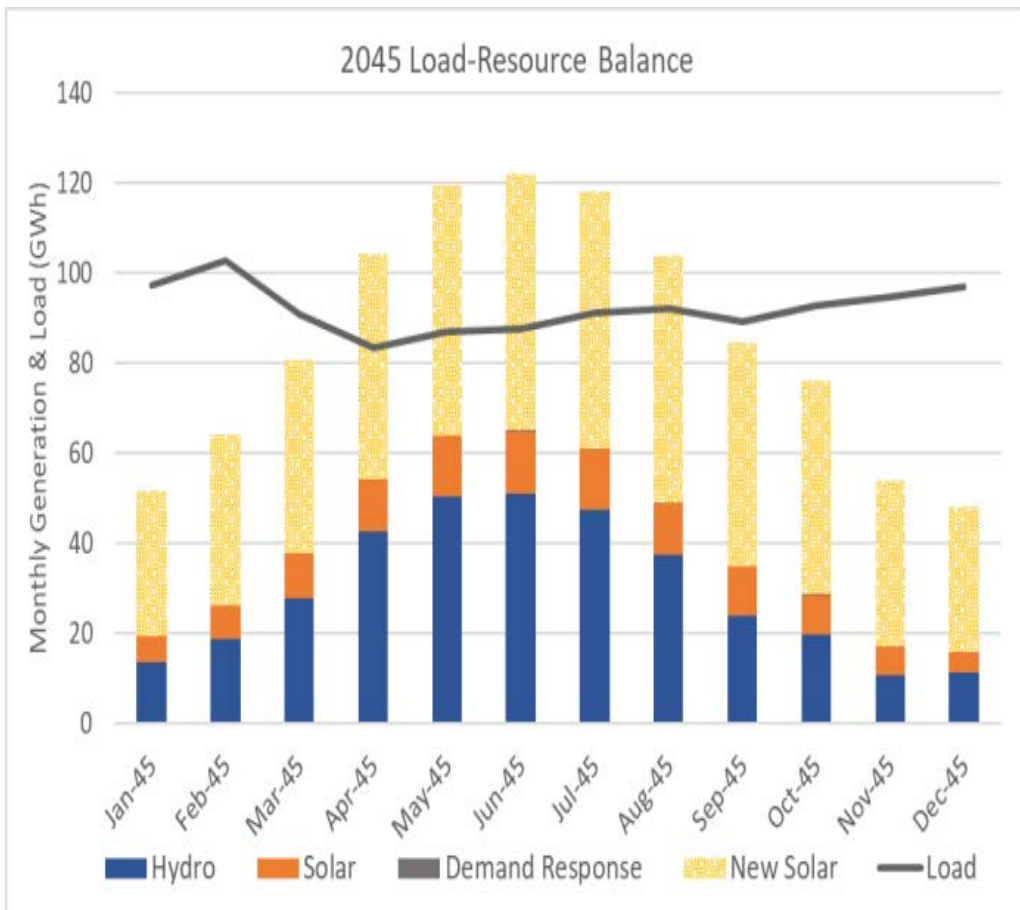
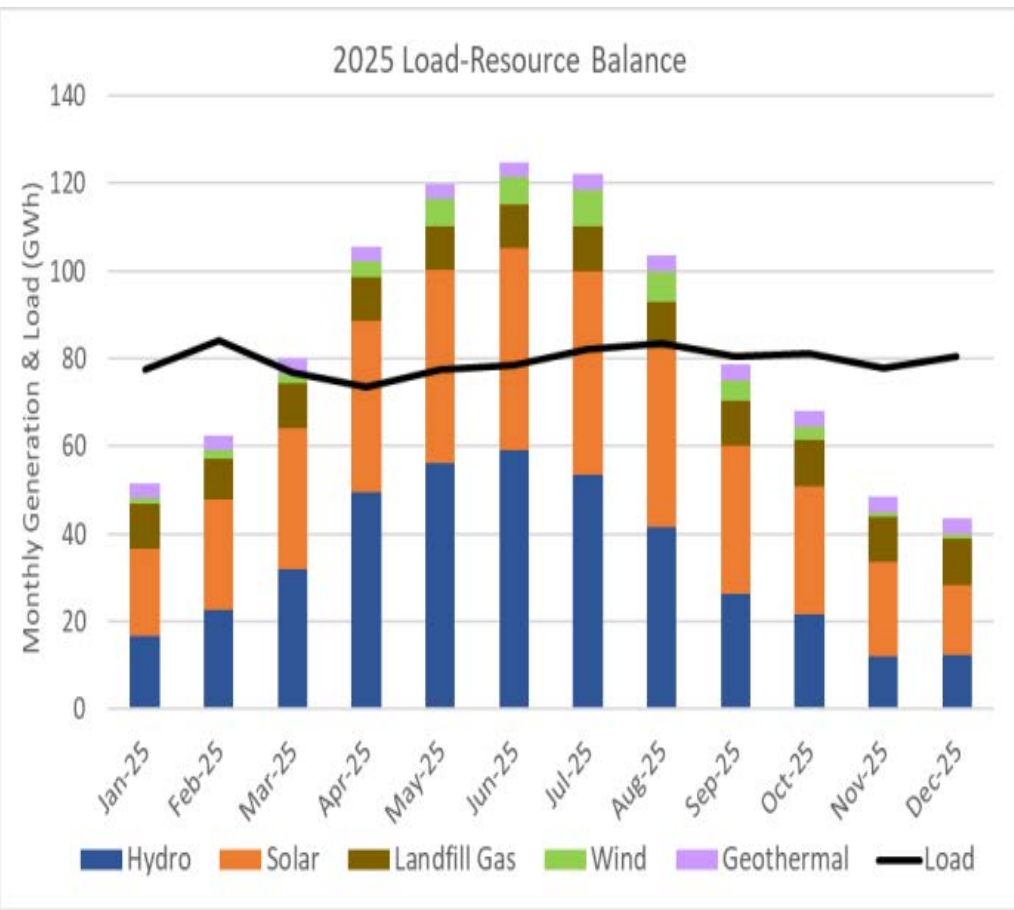
Preliminary Modeling Results – Capacity Expansion (No Storage)



Preliminary Modeling Results – Annual Energy (No Storage)



Preliminary Modeling Results – Monthly LRB in 2025 & 2045 (No Storage)



Preliminary Findings

1. Western (WAPA) contract looks competitive
2. Model picks low-cost resources (i.e., solar), as well as storage in later years
3. But solar is not the best portfolio fit, and model may be over-estimating value of new solar
4. Demand-side resources appear competitive too (although limited in scale)
5. Project costs expected to come down in next few years – expect to contract for new resources soon

Next Steps

1. Refine modeling results – to inform WAPA contract renewal decision and to target RFP to best value/best fit resources
 - a. Adjust cost/value assumptions for resources to determine threshold levels for attractiveness
2. Seek new resources in coming years
 - a. Baseload/flexible resources to serve new flat load growth?
3. Explore demand-side programs:
 - a. Definitely: TOU rate to encourage load-shifting to solar production periods
 - b. Possibly: commercial customer DR program, flexible EV charging systems, encouraging low-powered EV charging

Next Steps – IRP Timeline

- September/October – IRP final report presentation with refined portfolio modeling results (UAC)
 - Will include multiple candidate portfolio options and supply cost data
- October – IRP final report presentation (Finance Committee)
- November – IRP final report approval (City Council)
- 2025-2030: Continue to solicit a portfolio of resources through multiple competitive solicitation processes
- 2025-2030: Continue to assess and implement demand side programs/resources to optimally meet customer loads



CITY OF
**PALO
ALTO**

Jim Stack, PhD

Senior Resource Planner

james.stack@cityofpaloalto.org

(650) 329-2314



Utilities Advisory Commission Staff Report

From: Dean Batchelor, Director Utilities
Lead Department: Utilities

Meeting Date: July 5, 2023
Staff Report: 2305-1417

TITLE

Informational Report for the Utilities Quarterly Report for FY23-Q3

RECOMMENDATION

This is an informational report and no action is requested.

EXECUTIVE SUMMARY

This report for the Utilities Advisory Commission is an informational update on water, gas, electric, wastewater collection and fiber utilities, efficiency programs, legislative/regulatory issues, utility-related capital improvement programs, operations, reliability impact measures and a utility financial summary. This updated report has been prepared to keep the Utilities Advisory Commission apprised of the major issues that are facing the water, gas, electric, wastewater collection and fiber utilities. A separate quarterly report on the financial position is prepared consistent with when the City closes its books.

Items of special interest in this report are summarized below:

Vacancies and Staffing – Appendix B

- The Utilities Department has 58 vacant positions out of 253 authorized positions or a 23% vacancy rate at the end of March 2023
- The highest number of vacancies are in Electric Operations (24 FTEs) and Electric Engineering (8 FTEs). Due to HR staffing constraints, Utilities has designated three HR liaisons from Utilities Administration to assist HR with some of the recruitments.

Electric Utility:

Hydroelectric generation conditions have improved significantly. Total hydropower generation for FY 2022 was 230 GWh, which was 250 GWh (52%) below the long-term average. FY 2023 is projected to provide 95% of generation compared to the long-term average. (Section 1.1.2)

- Sales of renewable energy credits (RECs) for CY 2023 resulted in \$2.8M in net revenue. (Section 1.1.3)

- A number of construction projects are in progress or have been recently completed. (Section 1.2)
- A summary chart of quarterly electric outages is included in the report. (Section 1.4)
- FY 2023 actual electric sales through March 2023 were about 1% higher than forecasted, while actual sales revenues were about 10% higher than budgeted. The higher sales revenues were due to revenue from the Electric Hydro Rate Adjuster. (Section 1.5.1)

Gas Utility:

- High gas prices in December and January impacted customer bills. Prices decreased significantly starting in February and are expected to remain low into summer. The City is offering resources to help customers with high utility bill costs, including free energy assessments through the Home Efficiency Genie, bill payment arrangements, and efficiency tips. City Council also recently voted in February to offer rebates to residential customers for high bills. Customers are asked to contact Utilities Customer Service Call Center for high bill assistance. (Section 2.1 and 7)
- Two gas main replacement projects are in progress (GS-14003 and GS-14003). (Section 2.2)
- Gas utility demand through March 2023 was 3% higher than forecasted, while actual sales revenues were about 82% higher than budgeted. The higher revenue was due to increases in the market prices of gas commodity which were mostly passed through to customers. (Section 2.5.1)

Water Utility:

- As a result of the above average precipitation in December 2022 and January 2023, storage in the San Francisco Regional Water System is above normal for this time of year and is expected to fill. (Section 3.1)
- Palo Alto's two-day per week watering restriction will expire with the expiration of the State's Emergency Regulation. (Section 3.1)
- The UAC received an update on the One Water planning effort in February. Palo Alto launched the One Water Plan with the goal of Council adoption of a One Water supply plan that is a 20-year adaptable roadmap for implementation of water supply and conservation portfolio alternatives. More stakeholder engagement meetings will be scheduled as the work progresses and the community can still weigh in on the evaluation criteria. (Section 3.1)
- Staff's preliminary projection of expected revenues and expenses together with transfers from the CIP Reserve, estimates the Operations Reserve will reach approximately target levels by the end of FY 2023. (Section 3.5)
- Water demand through the end of March 2023 was about 11% lower than forecasted and water sales revenues were about 11% lower than budgeted. Sales were lower due to the water conservation efforts made throughout the drought periods, coupled with rainy weather during the winter and spring seasons. (Section 3.5.1)
- Construction is underway on a water main replacement in the Crescent Park, Barron Park, and Charleston Meadows neighborhoods. (Section 3.2)

Wastewater Utility:

- An overview of the status of the Regional Water Quality Control Plant (RWQCP) rehabilitation projects is provided, including an overview of the financing plan for the projects. The first project to begin construction will be the primary sedimentation tank rehabilitation. (Section 4.1)
- A sewer system rehabilitation project (SSR 30) is largely completed and replaced pipes in the Ventura, Research Park, Fairmeadow, and Midtown West neighborhoods. (Section 4.2)
- Actual wastewater sales revenues through Q3 of FY 2023 were around expectation, at about 1% lower than budgeted. (Section 4.4.1)

Fiber Utility (Section 5):

- On December 19, 2022, City Council approved to build the fiber backbone, and to build fiber to the premises (FTTP) under a phased approach. FTTP would be built without debt financing, with funding to comprise \$34 million from the Fiber Fund and \$13 million from the Electric Fund ([Staff Report ID # 14800](#)). Building the fiber backbone and last mile infrastructure to provide FTTP broadband internet to the community will be a huge undertaking for the City. While it is economically prudent to utilize available resources, the City must also strategically invest in external resources for a strong roll-out.
- Utilities will be bringing forward a recommendation to add four (4) new FTE positions for the dark fiber expansion and implementation of FTTP as part of the FY 2024 Utilities Proposed Budget. The titles of these positions are Assistant Director, Outside Plant Manager, Marketing and Sales Manager and Network Architect/Senior Engineer. These positions will be recruited and filled as needed during the various stages of the project.

Customer Programs (Section 6):

- The new Heat Pump Water Heater program aims to retrofit 1,000 gas water heaters in single family homes in a year; customers can choose to pay for the project upfront or select an on-bill financing option with 0% interest rate. 382 residents having signed up on the online interest list as of March 6, 2023. Synergy began site assessments in late February and have scheduled 12 assessments through March 9, 2023.
- The City continues to promote its multi-family and workplace EV charger programs.
- As of February 1, 2023, Enovity has 15 projects in process with 362,000 kWh savings. The Key Account Representatives have been actively reaching out to engage customers with direct email contacts and setting up face to face meeting.

The Business Energy Advisor program had 7 new site assessments and 4 site assessment reports completed and presented to customers in Q3 FY 2023.

Communications: A digest of major outreach efforts is provided in Section 7, including extreme energy prices and high utilities bills, new EV chargers at Stanford Health Care, and water supply and drought update.

Legislative and Regulatory: Major legislative and regulatory items are summarized in Section 8. An update to State Regulatory proceedings will be presented in the next quarterly report.

OVERVIEW

Utilities Quarterly Update

Third Quarter of Fiscal Year 2023



Table of Contents

1	ELECTRIC UTILITY	8
1.1	ELECTRICITY SUPPLY AND TRANSMISSION	8
1.1.1	<i>Forecasted Supply Costs</i>	8
1.1.2	<i>Hydroelectric Conditions</i>	9
1.1.3	<i>REC Exchange Program</i>	10
1.1.4	<i>Renewable Energy Procurement</i>	10
1.2	CAPITAL IMPROVEMENT PLAN STATUS	10
1.3	RATE AND BILL COMPARISONS	11
1.4	RELIABILITY	12
1.5	FINANCIAL HEALTH	12
1.5.1	<i>Sales Forecasts vs. Actuals</i>	12
1.5.2	<i>Financial Position</i>	13
2	GAS UTILITY	15
2.1	GAS SUPPLY AND TRANSMISSION	15
2.1.1	<i>Actual and Forecasted Supply Costs</i>	15
2.1.2	<i>Carbon Neutral Gas Program</i>	16
2.1.3	<i>Cap and Trade Program</i>	18
2.1.4	<i>Gas Transmission Line Capacity Valuation</i>	19
2.1.5	<i>Gas Prepay Valuation</i>	20
2.2	CAPITAL IMPROVEMENT PLAN STATUS	20
2.3	RATE AND BILL COMPARISONS	20
2.4	RELIABILITY	21
2.5	FINANCIAL HEALTH	21
2.5.1	<i>Sales Forecasts vs. Actuals</i>	21
2.5.2	<i>Financial Position</i>	22
3	WATER UTILITY	23
3.1	WATER SUPPLY AND TRANSMISSION	23
3.2	CAPITAL IMPROVEMENT PLAN STATUS	26
3.3	RATE AND BILL COMPARISONS	27
3.4	RELIABILITY	27
3.5	FINANCIAL HEALTH	27
3.5.1	<i>Sales Forecasts vs. Actuals</i>	27
3.5.2	<i>Financial Position</i>	28
4	WASTEWATER UTILITY	30
4.1	WASTEWATER TREATMENT UPDATES AND CAPITAL PLANNING STATUS	30
4.1.1	<i>Treatment Cost Trends</i>	30
4.1.2	<i>Regional Water Quality Control Plant Capital Planning Status</i>	31
4.2	COLLECTION SYSTEM CAPITAL IMPROVEMENT PLAN STATUS	32
4.3	RATE AND BILL COMPARISONS	33
4.4	FINANCIAL HEALTH	33

4.4.1	<i>Sales Forecasts vs. Actuals</i>	33
4.4.2	<i>Financial Position</i>	33
5	FIBER UTILITY	35
5.1	FIBER UTILITY STRATEGIC PLANNING	35
5.2	CAPITAL IMPROVEMENT PLAN STATUS	36
5.3	RELIABILITY	36
5.4	FINANCIAL HEALTH	36
5.4.1	<i>Fiber Sales</i>	36
5.4.2	<i>Financial Position</i>	36
6	CUSTOMER PROGRAMS (EFFICIENCY AND SUSTAINABILITY)	37
6.1	CUSTOMER PROGRAMS UPDATES	37
6.1.1	<i>Energy and Water Efficiency</i>	37
6.1.2	<i>Building Electrification</i>	39
6.1.3	<i>Electric Vehicles</i>	40
6.2	FUNDING SOURCES FOR EMISSIONS REDUCTIONS	43
7	COMMUNICATIONS	45
8	LEGISLATIVE AND REGULATORY ACTIVITY	47
8.1	STATE LEGISLATION	47
9	APPENDIX A: ENERGY RISK MANAGEMENT PROGRAM	49
9.1	OVERVIEW OF HEDGING PROGRAMS	49
9.2	OVERVIEW OF ENERGY RISK MANAGEMENT PROGRAM	49
9.3	FORWARD DEALS	49
9.4	MARKET EXPOSURE	50
9.5	TRANSACTION COMPLIANCE	50
10	APPENDIX B: STAFFING AND VACANCIES	51
11	APPENDIX C: ELECTRIC UTILITY ANNUAL INFRASTRUCTURE MAINTENANCE AND REPLACEMENT REPORT	52

Figures

FIGURE 1: FY 2023 FINANCIAL PLAN SUPPLY COST FORECAST VS. ACTUALS9

FIGURE 2: HYDRO GENERATION FY 2022 ACTUALS, FY 2023-24 PROJECTED (GWh).....10

FIGURE 3: RESIDENTIAL MONTHLY ELECTRIC BILL COMPARISON (EFFECTIVE 1/1/2023, \$/MO.).....12

FIGURE 4: ELECTRIC OUTAGE RELIABILITY, FY 2022 TO FY 2023-Q312

FIGURE 5: ELECTRIC SALES VOLUME (KWH), UP TO FY 2023-Q313

FIGURE 6: ELECTRIC SALES REVENUE (\$), UP TO FY 2023-Q313

FIGURE 7: PALO ALTO GAS COMMODITY RATES15

FIGURE 8: GAS SUPPLY COSTS (\$), ACTUAL VS BUDGET, UP TO FY 2023-Q316

FIGURE 9: OFFSET PORTFOLIO COMPOSITION17

FIGURE 10: OFFSET PROJECT DESCRIPTIONS18

FIGURE 11: ESTIMATED CAP AND TRADE COSTS19

FIGURE 12: RESIDENTIAL NATURAL GAS BILL COMPARISON (\$/MONTH).....20

FIGURE 13: GAS SERVICE INTERRUPTIONS, FY 202321

FIGURE 14: GAS SALES VOLUME (THERMS), UP TO FY 2023-Q321

FIGURE 15: GAS SALES REVENUE (\$), UP TO FY 2023-Q3.....22

FIGURE 16: REGIONAL WATER SYSTEM STORAGE24

FIGURE 17: SFPUC WATER DELIVERIES.....25

FIGURE 18: RESIDENTIAL WATER BILL COMPARISON (\$/MONTH)27

FIGURE 19: WATER SERVICE INTERRUPTIONS, FY 2023.....27

FIGURE 20: WATER SALES VOLUME (CCF), UP TO FY 2023-Q328

FIGURE 21: WATER SALES REVENUE (\$), UP TO FY 2023-Q328

FIGURE 22: PALO ALTO’S SHARE OF ESTIMATED WASTEWATER TREATMENT EXPENSES (PROJECTION AND PLANNED CIP)31

FIGURE 23: CURRENT RWQCP CAPITAL WORK IN-PROGRESS (BASED ON RWQCP NOVEMBER 2022 PARTNERS MEETING)32

FIGURE 24: RESIDENTIAL WASTEWATER BILL COMPARISON (\$/MONTH).....33

FIGURE 25: WASTEWATER SALES REVENUE (\$), UP TO FY 2023-Q333

FIGURE 26: SCHEDULE OF CPAU WORKSHOPS (APRIL - JUNE 2023)37

FIGURE 27: ENERGY EFFICIENCY PROGRAM ENERGY SAVINGS39

FIGURE 27: TENTATIVE SCHEDULE OF CPAU EV WORKSHOPS AND EVENTS, APRIL – JUNE 202342

FIGURE 29: POTENTIAL EMISSIONS REDUCTION FUNDING SOURCES44

FIGURE 31: ELECTRIC LOAD RESOURCE BALANCE, 2023 - 202550

FIGURE 32: UTILITIES VACANCIES AND POSITION MOVEMENTS BY DIVISION, UP TO Q3 FY 202351



1 Electric Utility

The City's electric utility serves all residential and non-residential electric demands in Palo Alto at a lower cost than PG&E in surrounding communities. Its electric supply portfolio is 100% carbon neutral. The City maintains and operates an electric distribution system and one small natural gas generator but does not operate any transmission lines or any significant generating capacity on its own. Instead, the City belongs to Northern California Power Agency (NCPA) which operates its Calaveras hydroelectric generating plant and provides power scheduling services for its other generating resources. This carbon free power is supplied through power purchase agreements with various generation operators.

1.1 Electricity Supply and Transmission

Below is an update on electricity supply and transmission services.

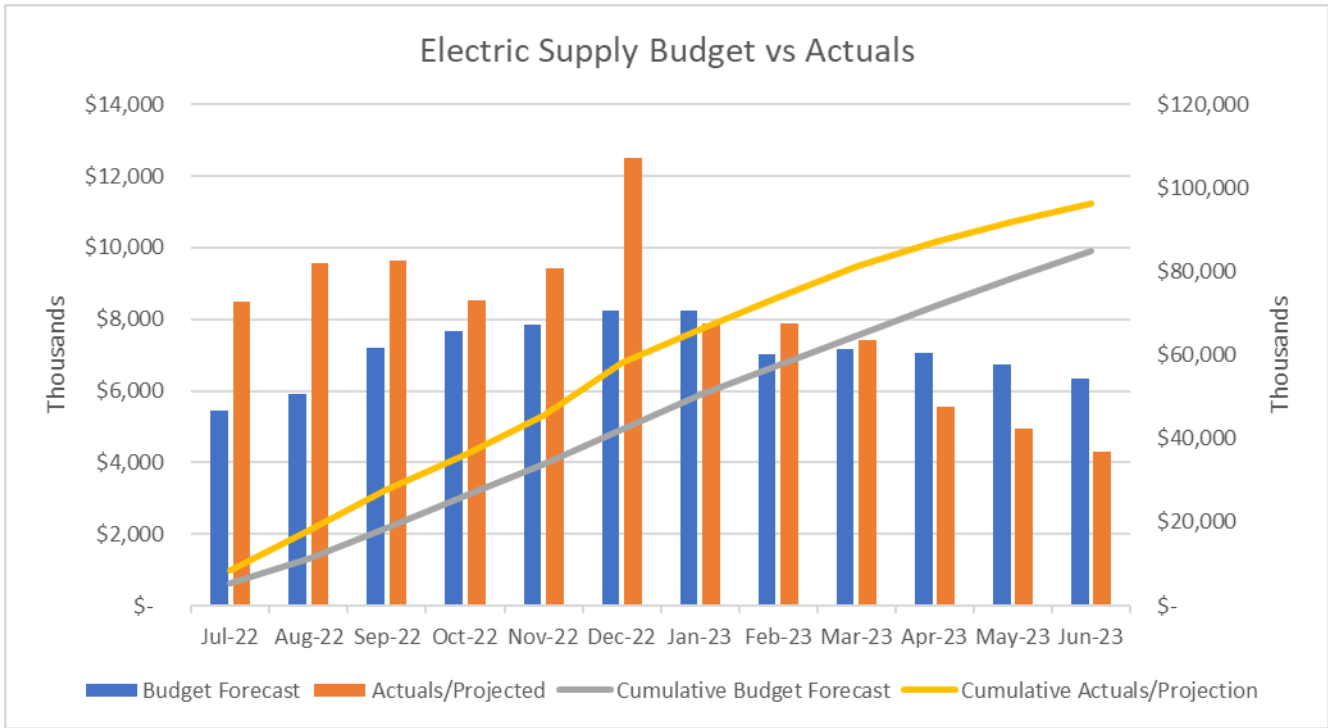
1.1.1 Forecasted Supply Costs

The actual net supply cost through Q3 FY 2023 was \$81.4 M. This represents a \$13.3 M (20%) increase over FY 2022 actuals and \$16.7 M (26%) over the FY 2023 Adopted Budget amount, with the increase primarily driven by higher than historical energy prices, higher transmission costs, and much lower than historical average hydro generation levels.

The projected net supply cost for FY 2023 is \$96.1 M, which is \$11.3 M (13%) greater than the Adopted Budget amount, and \$4.0 M lower than the actual net supply cost for FY 2022. This increase in cost relative to the Adopted Budget is due to the same factors noted above that explain the deviation in supply cost for FY 2023.

With hydroelectric generation conditions beginning to improve significantly, the electric net supply cost for FY 2024 is projected to be \$89.5 M.

Figure 1: FY 2023 Financial Plan Supply Cost Forecast vs. Actuals



1.1.2 Hydroelectric Conditions

The City receives power from two hydroelectric projects, the Calaveras project and the Western Base Resource contract for federal hydropower from the Central Valley Project.¹ The watershed for Western hydropower is primarily in the northern end of California, while the watershed for the Calaveras project is in the Central Sierras.

For water year 2021 to 2022 (October 2021 to September 2022), total precipitation was 63% of average for the Central Sierras watershed and 81% of average for the Northern Sierras watershed—the third straight year of well below average precipitation levels. Total hydropower generation for FY 2022 was 230 GWh, which is 250 GWh (52%) below the long-term average.²

However, water year 2022 to 2023 is on track to be one of the best precipitation years in memory, following the record storms across the state in December 2022 and early January 2023. As of May 22nd, total precipitation was 163% of average for the Central Sierras and 124% of average for the Northern Sierras, and snowpack levels are even higher: over 300% of average depth for this time of year. Reservoir

¹ The Calaveras project is a hydropower project located in Calaveras County that is maintained and operated by the Northern California Power Agency on behalf of the City and other project participants. The City is also one of several public entities with contracts with the Western Area Power Administration for “Base Resource” electricity, which is the hydroelectric power available from the federal government’s Central Valley Project (operated by the Bureau of Reclamation) after accounting for power used for Central Valley Project operations and power delivered to certain “preference” customers.

²The long-term average forecast levels for both Western and Calaveras have been revised downward (about 10% each) in recent years to reflect the impact of climate change. These values may need to be revisited again in the coming years.

levels began the water year extremely low, but most reservoirs are now at above average level for this time of year. As a result, the current hydro forecasts have improved dramatically, with total output projected to be 95% of the long-term average level for FY 2023 and 110% of the long-term average level for FY 2024.

Figure 2: Hydro Generation FY 2022 Actuals, FY 2023-24 Projected (GWh)

	FY 2022	FY 2023	FY 2024
Calaveras Generation (GWh)	61	208	138
Western Generation (GWh)	169	180	313
Total Hydro Generation (GWh)	230	388	451
% of Long-term Average Total	56%	95%	110%
Long-term Average Total Hydro (GWh)	410	410	410

1.1.3 REC Exchange Program

Under the REC Exchange Program, which was approved by Council in August 2020 ([Staff Report #11556](#)), for CY 2023 staff has contracted to sell 160 GWh worth of in-state renewable energy (for \$4.0M) and purchased 200 GWh worth of out-of-state renewable energy credits (RECs) costing \$1.2M. The net revenue thus far in CY 2023 was \$2.8M. The spread between in-state versus out-of-state REC prices have widened in CY 2023, due to the rise in value of in-state products. Additional REC Exchange transactions are planned for later this year.

1.1.4 Renewable Energy Procurement

Utilities staff has been working with staff from the Public Works Department, the City of Santa Clara, and NCPA to negotiate a new power purchase agreement (PPA) to buy a small amount of electrical output (about 3 GWh/year in total) from an anaerobic digester facility, in order to satisfy the requirements of Senate Bill (SB) 1383. Similar to the Calpine Geothermal PPA, NCPA would be the counterparty to the PPA with the anaerobic digester facility, and the Cities of Palo Alto and Santa Clara would each receive a share of the output via Third Phase Agreements with NCPA. Contract negotiations between the parties are now at a fairly advanced stage, and staff plans to take these agreements to the City Council for consideration in the coming months.

1.2 Capital Improvement Plan Status

The following capital projects are currently in progress or have been recently completed:

- **EL-17001 (East Meadow Circles 4/12kV Conversion):** This project is scheduled to be completed in several phases. Phase 1 design is complete. Phase 2 & 3 (of 6) engineering design is currently in progress.
- **EL-11003 (Rebuild Underground 15):** This project is in the preliminary stages of engineering design. Project is delayed due to staffing shortage. This project has been put on hold due to other priorities.
- **EL-10006 (Rebuild Underground 24):** This project is in construction phase and scheduled to be completed in Dec 2023.
- **EL-16000 (Rebuild Underground 26):** This project is in the preliminary stages of engineering design.
- **EL-19004 (Wood Pole Replacement):** 50 poles have been replaced since July 2022. CPAU staff and contract consultants are continuously working on pole replacement designs for construction although the output is delayed this year because of staffing shortages.

- **EL-16003 (Substation Physical Security):** This project is scheduled to be completed in several phases. Substation Security lighting contract was awarded in June 2022. The installation will be completed over a 2-year period. Construction is currently in progress.
- **EL-17002 (Substation 60kV Breaker Replacement):** This project is in the preliminary stages of engineering design. Project is delayed due to staffing shortage.
- **EL-21001 (Foothills Rebuild):** This project will rebuild the approximately 11 miles of overhead line in Foothills Park, as necessary to mitigate the possibility of wildfire due to overhead electric lines. Staff has completed 7,000 feet of substructure work and design which will eliminate the corresponding 26 poles. Substructure for Phase 1 was completed in Spring 2022 and the substructure for Phase 2 will be completed by June 2023. Phases 3 and 4 underground design has been completed. Construction will begin by July 2023.
- **EL-14005 (Reconfigure Quarry Feeders):** Staff completed the design phase this year. Construction has been Completed.
- **EL-02011 (Electric Utility Geographic Information System (GIS)):** The project scope includes maintenance/technical support of the existing GIS system and implementation of the new GIS platform, ESRI. Staff has completed the ESRI ArcGIS Portal, which is a web service for staff to view data. Electric data migration will be completed June 2023.
- **EL-16002 (Capacitor Bank Installation):** This project is a multi-year effort for the procurement, design and installation of capacitor banks at several substation. Hanson Way and Park Blvd substation work is complete; Two capacitor banks at Hanover remain to be completed and will be completed in December 2023. The capacitor banks at Maybell have been installed and will be commissioned in the coming months.

1.3 Rate and Bill Comparisons

For the median consumption level, the annual residential electric bill based on current rates is \$1,000, about 37% lower than the annual bill for a PG&E customer with the same consumption and approximately 42% higher than the annual bill for a City of Santa Clara customer. The bill calculations for PG&E customers are based on PG&E Climate Zone X, which includes most surrounding comparison communities.

The figure below presents sample median residential bills for Palo Alto, PG&E, and the City of Santa Clara (Silicon Valley Power) for several usage levels. Rates used to calculate the monthly bills shown below were in effect as of January 1, 2023. The rates for Palo Alto include the current Electric Hydro Rate Adjuster (E-HRA) of \$0.048/kWh to mitigate the high power costs cited above.

In an application submitted December 2022, PG&E has requested that the California Public Utilities Commission (CPUC) approve rate increases that would increase the PG&E residential bill by 19% in 2023. A CPUC decision is anticipated by June 2023. Also, over the next several years low-usage customers in PG&E territory are expected to continue to see higher percentage rate increases than high-usage customers, as PG&E compresses its tiers from the highly exaggerated levels that have been in place since the energy crisis. This is likely to make the bill for the median Palo Alto consumer look even more favorable compared to most PG&E customers. Even with the compressed tiers, bills for high usage Palo Alto consumers are projected to remain substantially lower than the bills for high usage PG&E customers.

Figure 3: Residential Monthly Electric Bill Comparison (Effective 1/1/2023, \$/mo.)

Season	Usage (kwh)	Palo Alto	PG&E	Santa Clara
Winter	300	57.74	94.11	42.45
	(Median) 453	94.42	143.32	64.89
	650	143.94	221.07	93.78
	1200	282.18	438.13	174.44
Summer	300	57.74	94.11	42.45
	(Median) 365	72.31	123.41	51.98
	650	121.19	233.16	86.65
	1200	282.18	438.13	174.44

1.4 Reliability

CPAU tracks electric outages. A summary chart of these outages can be found below.

Figure 4: Electric Outage Reliability, FY 2022 to FY 2023-Q3

Outage Reliability	FY 2022			
	Q1	Q2	Q3	Q4
System Average Interruption Duration Index (SAIDI) ³	1.71	7.32	6.72	1.35
System Average Interruption Frequency Index (SAIFI) ⁴	.01	.02	.16	.02
Customer Average Interruption Duration Index (CAIDI) ⁵	180.18	323.65	41.48	88.70
Outage Reliability	FY 2023			
	Q1	Q2	Q3	
System Average Interruption Duration Index (SAIDI) ³	81.69	7.38	111.9	
System Average Interruption Frequency Index (SAIFI) ⁴	0.61	.04	1.0	
Customer Average Interruption Duration Index (CAIDI) ⁵	134.77	190.12	110.8	

1.5 Financial Health

Below is a summary of the financial position for the electric utility.

1.5.1 Sales Forecasts vs. Actuals

Actual electric sales volumes through Q3 of FY 2023 were about 1% higher than forecasted, while actual sales revenues were about 10% higher than budgeted in the FY 2023 Financial Plan. The higher sales revenues were due to additional revenue from the Electric Hydro Rate Adjuster (E-HRA) rate of

³ System Average Interruption Duration Index (SAIDI) - Measure of the total duration of an interruption for the average customer during a given time frame. SAIDI = (Sum of Customer Minutes Interrupted) / (Total Customers Served)

⁴ System Average Interruption Frequency Index (SAIFI) - the average number of times a customer will experience an interruption during a given time frame. SAIFI = (Total Customers Interrupted) / (Total Customers Served)

⁵ Customer Average Interruption Duration Index (CAIDI) - the average time to restore service. CAIDI = (Sum of Customer Minutes Interrupted) / (Total Customers Interrupted)

\$0.013/kwh, which was implemented effective on April 1, 2022, then increased to \$0.048/kwh, effective January 1, 2023.

Figure 5: Electric Sales Volume (kWh), up to FY 2023-Q3

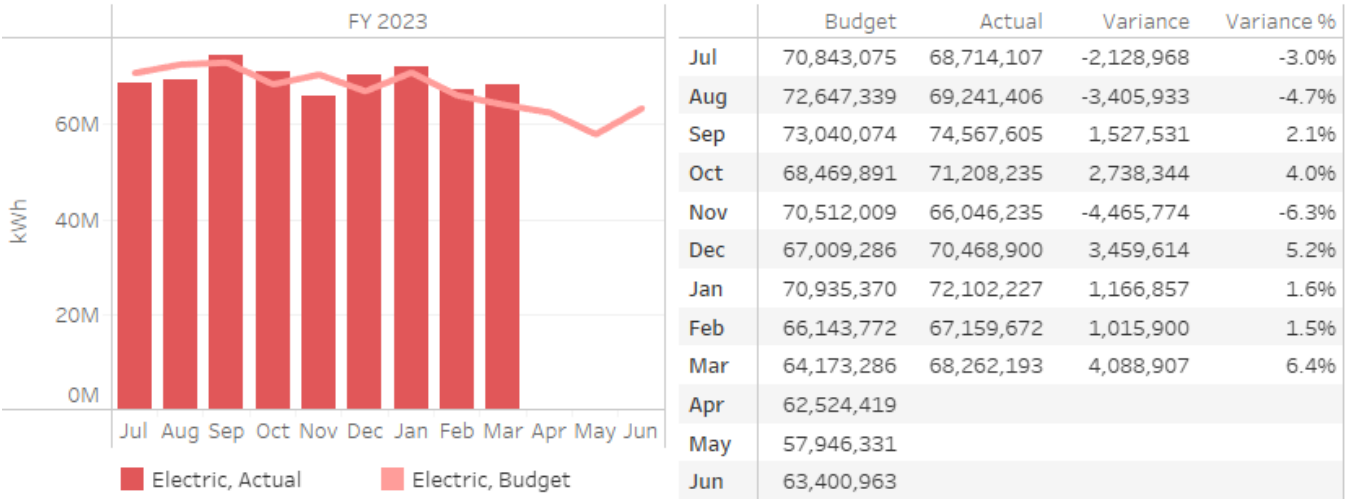
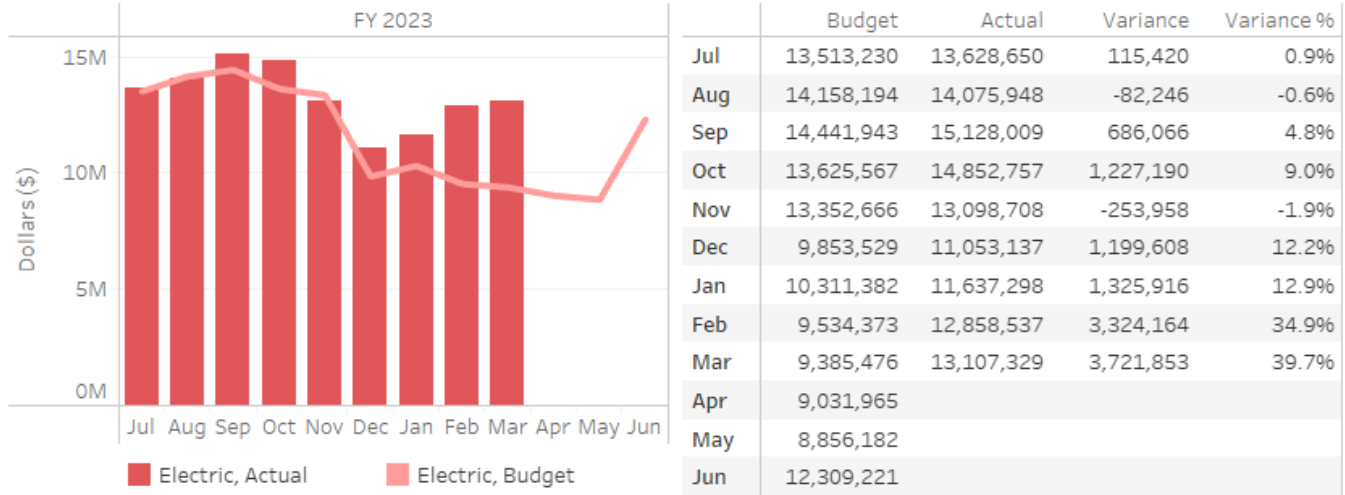


Figure 6: Electric Sales Revenue (\$), up to FY 2023-Q3



Note: The electric Q1 and Q2 sales volumes and revenues in the previous Utilities Quarterly FY 2023 Q2 report were incorrect. This report contains the corrected numbers.

1.5.2 Financial Position

The Electric Operations Reserves were at the minimum guideline level at the end of FY 2022 and are expected to drop below minimum in FY 2023, given higher than budgeted purchase costs resulting from low hydro conditions (necessitating more expensive market purchases) as well as increasing transmission costs. City Council activated the E-HRA in April 2022 to help mitigate these rising costs. Over the summer of 2022, market prices began increasing over the level assumed in the E-HRA and Council again increased the E-HRA in December 2022 to bring revenues in line with costs.

Supply purchase costs for the first three quarters of FY 2023 were roughly 25% over budget, 81.4 million vs. \$65.2 million budgeted. As a result of the multi-year drought, the City's hydro generation resources produced below average energy over the 9-month period, generating less revenues to offset higher load costs. Market prices have remained about 25% above the budget, averaging around \$100/MWh, vs. \$75/MWh in the budget.

Through the first three quarters of FY 2023, sales volumes and revenues have exceeded the budget, largely driven by more extreme summer and winter weather and the increase to the hydroelectric rate adjuster.



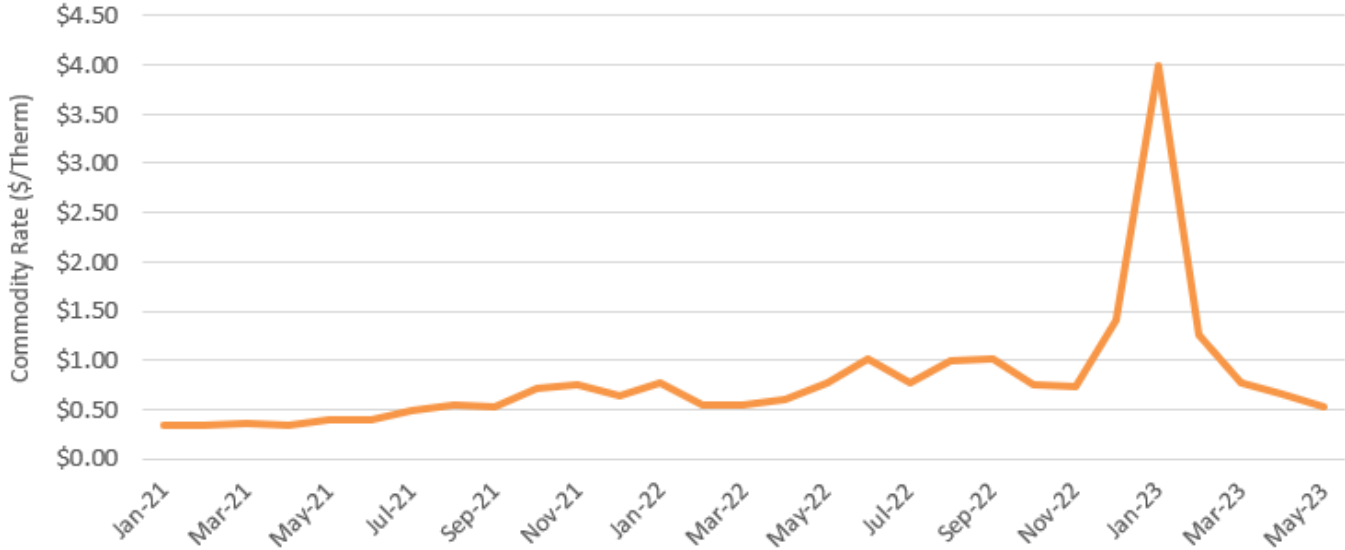
2 Gas Utility

The City’s gas utility serves all residential and non-residential gas demand in Palo Alto. The City maintains and operates a system of low-pressure gas lines for delivering gas but does not operate any transmission lines. Costs for the gas utility are split approximately two thirds for the operation, maintenance and capital improvement and one third for the cost of the gas commodity, PG&E gas transmission, compliance with the State’s Cap and Trade Program and the City’s Carbon Neutral Gas Program.

2.1 Gas Supply and Transmission

The gas market has stabilized during the Spring of 2023. The gas commodity bidweek monthly price at the PG&E Citygate hub decreased from the peak of \$49.5/mmbtu in January 2023 to \$5.3/mmbtu in May 2023. Prices are expected to continue to fall heading into the summer season due to high gas production, and unseasonably strong storage inventories in the US sent bidweek prices tumbling. The chart below shows Palo Alto’s gas commodity rates from 2021 to present.

Figure 7: Palo Alto Gas Commodity Rates

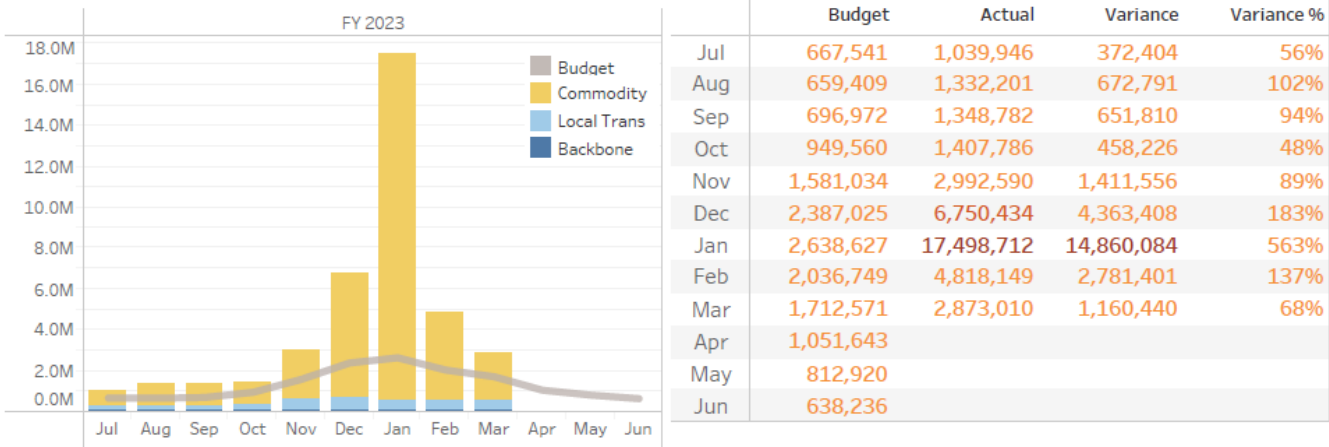


2.1.1 Actual and Forecasted Supply Costs

Actual gas demand through Q3 of FY 2023 was about 1% higher than forecasted, while actual supply and transportation costs were about 201% higher than budgeted in the FY 2023 Financial Plan. Gas

commodity prices were substantially higher than predicted in the FY 2023 financial plan due the unprecedented spike in gas commodity prices during the winter of 2022/23.

Figure 8: Gas Supply Costs (\$), Actual vs Budget, up to FY 2023-Q3

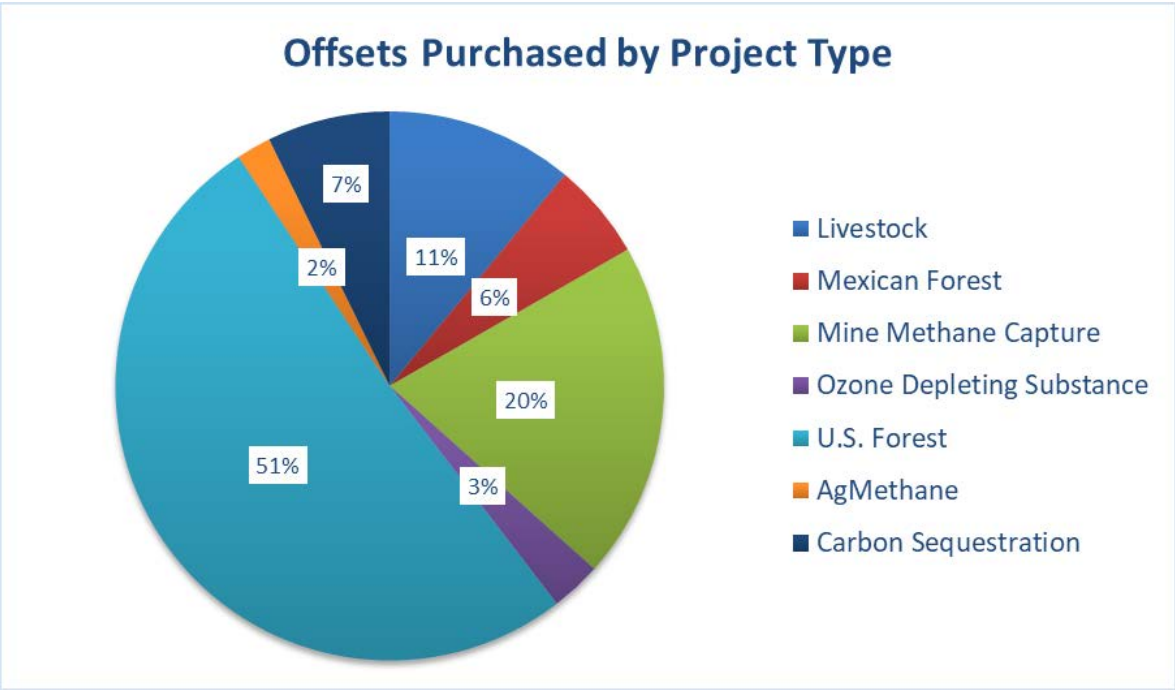


2.1.2 Carbon Neutral Gas Program

In December 2020, Council adopted [Resolution #9930](#) maintaining the Carbon Neutral Natural Gas Plan to achieve carbon neutrality for the gas supply portfolio using high-quality carbon offsets with a cost cap of \$19 per ton CO₂e.

Offsets are purchased to neutralize emissions equal to those caused by natural gas usage in Palo Alto. Staff purchased 60,000 carbon offsets for FY 2022 in January 2022 from a mixture of forestry and livestock projects at an average purchase price of \$12.26 per metric ton, nearly double the price of historical average transaction prices. Staff purchased an additional 60,000 carbon offsets in June 2022 at an average price of \$14.51 per ton CO₂e. As a result of the higher offset purchase costs, staff has updated the billing charge for offsets from \$0.04/therm to \$0.07/therm. The average purchase price of offsets purchased for the program is \$7.66 per ton CO₂e. The figure below shows the composition of offset purchases. Staff is evaluating a process change to expedite the approval of new Verified Emission Reduction (carbon offset) counterparties and has delayed its regular winter purchase while staff assesses the process change. Staff plans to issue an RFP to purchase offsets before the end of FY 2023.

Figure 9: Offset Portfolio Composition



The following table provides a description of the projects.

Figure 10: Offset Project Descriptions

Project Name	Project Type	Description
Grotegut Dairy	Livestock	Grotegut Dairy is a 3,900 milk-cow operation in Newton, Wisconsin with a methane capture system.
Green Trees	U.S. Forest	GreenTrees Advanced Carbon Restored Ecosystem is reforestation of agricultural lands into native hardwood forest in Mississippi, Louisiana, Arkansas, and Illinois
San Juan Lachao	Mexican Forest	Protection of forests located in High Biological Value Zones which contain flora and fauna listed in the Mexican Endangered Species List and the International Union for Conservation of Nature's Red List of Threatened Species. Project in San Juan Lachao near Palo Alto's Sister City of Oaxaca.
Blandin Forest	U.S. Forest	Blandin Native American Hardwoods Conservation and Carbon Sequestration project in Minnesota.
Pocosin+	U.S. Forest	These projects are all forested land that will not be disturbed by human development. Without this protection, the forests would be converted to grow wheat or corn. Forest conservation plays a vital role in protecting freshwater systems like lakes. The forests around the lakes act as natural water filters and purify the water for all who use it. The projects also support healthy populations of red wolf, bald eagle, black bear, and various bird species.
Refex ODS	Ozone Depleting Substance	The RemTec facility in Bowling Green, Ohio uses an argon arc plasma destruction device to achieve 99.99 percent removal. The majority of refrigerants originated in California, and all were sourced within the United States. The RemTec facility uses an argon arc plasma destruction device to achieve the required destruction and removal efficiency of 99.99 percent. The majority of ODS refrigerants originated in California, and all were sourced within the United States.
Methane Capture	Mine Methane Capture	This project is the first of its kind. Peabody Natural Gas, LLC removed methane from the North Antelope Rochelle Coal Mine before mining. The methane was compressed and transported to a natural gas pipeline and distributed to a national gas grid for use as fuel. Before implementation of the project, all the methane was vented to the atmosphere.
Virginia Conservation Forestry Program	U.S. Forest	The Virginia Conservation Forestry Program - Clifton Farm and Rich Mountain is a 9000+ acre improved forest management project in which the timber and carbon ownership and management rights have been transferred to The Nature Conservancy's Conservation Forestry Program. The program manages for multiple goals to include: Water quality protection, habitat diversity, high value forest products, and carbon sequestration. Co-benefits: Biodiversity, Watershed Protection, Climate Resilience, and Connectivity
Riverview Farm Anaerobic Digester	Livestock	Riverview is a carbon offset project generating emission reductions through the capture and destruction of methane at a dairy farm in Minnesota. Under the baseline, manure managed in open lagoons led to the fugitive emission of methane to the atmosphere. In the project scenario, this methane is captured by an anaerobic digester and destroyed on site in the production of electricity. Co-benefits include job creation and the improvement of local air and water quality.
Big River / Salmon Creek Forests IFM	U.S. Forest	The Big River and Salmon Creek Forests are located in Mendocino County, CA and cover 16,000 acres of redwood and Douglas-fir forest. This project is a conservation-based forest management project. Co-benefits include the creation of 140 jobs, protection of 37 miles of streams, and improved water quality for local fish and bird species.

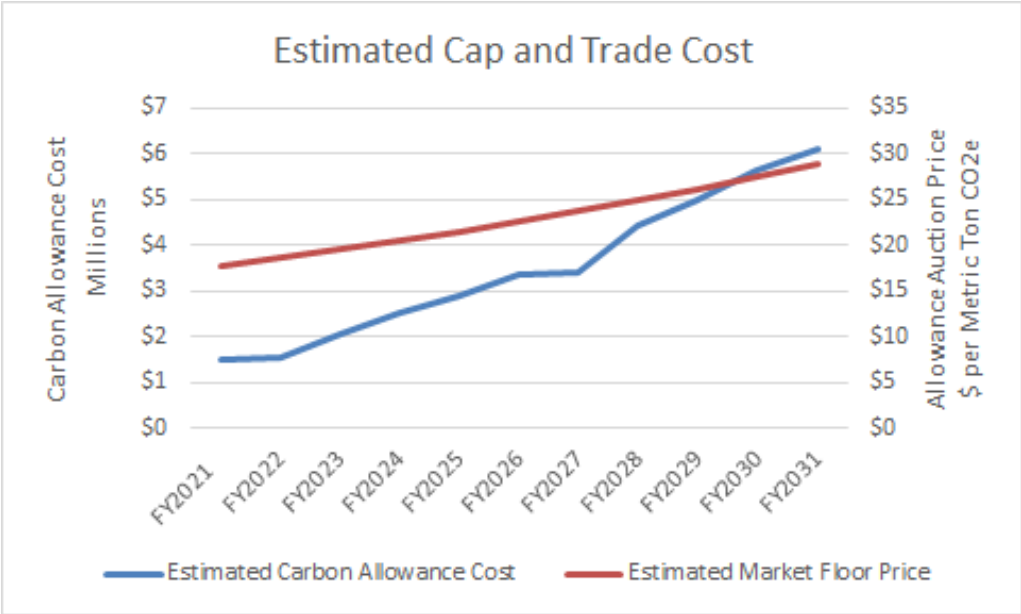
2.1.3 Cap and Trade Program

The gas utility has been regulated under California's greenhouse house (GHG) regulations since January 2015 with a GHG emissions cap that declines over time. The gas utility receives carbon allowances equal to the emissions allowed under the cap and is required to auction off a portion of the allowances (55% in 2022, increasing by 5% annually) through the state Cap and Trade Program. To meet its annual GHG compliance obligation, the City must purchase allowances based on actual gas use.

The auction floor price to either purchase or sell allowances increases annually by 5% plus inflation. Historically, allowances have traded at or near the floor price, but the clearing prices for allowances in the auction have increased significantly. The cost of compliance is anticipated to increase from \$2.3

million in FY 2023 to \$5.6 million in FY 2030, about an 18% increase per year on average, as shown in the following table:

Figure 11: Estimated Cap and Trade Costs



Revenues from the auction sale of gas utility allowances (currently about \$2.3 million per year) must be used exclusively for the benefit of the ratepayers in that utility in accordance with California Code of Regulations (CCR Title 17, section 95893). Approved uses are 1) the funding of certain energy efficiency rebates, retrofits, and demand reduction programs, 2) funding for programs with demonstrated GHG reductions, 3) non-volumetric return to ratepayers, either on or off bill, and 4) certain administrative, outreach and educational costs related to items 1-3 above. Council adopted a policy on the use of allowance proceeds ([Resolution #9487](#)), generally mirroring the regulations and requiring additional Council approval for rebates. Per the current regulations, the utility must either spend or rebate the funds received in any given year within 10 years (for example, funds received in 2020 must be spent by 2030, etc.).

As of the end of FY 2021, unspent funds related to Cap and Trade revenues were placed in a Cap and Trade reserve, until such time as they can be utilized per the dictates of applicable regulations. There was \$6.7 million in this reserve available for use at the end of FY 2022.

2.1.4 Gas Transmission Line Capacity Valuation

Palo Alto contracts for capacity on the Redwood pipeline, the path from the California-Oregon border to PG&E’s mid-pressure transmission system, at a cost lower than the market value. During the summer months, Palo Alto does not need all of the capacity to serve demand. The excess capacity is monetized by purchasing gas at the California-Oregon border and selling an equal amount of gas at the terminus of the pipeline. The variable cost of transporting the gas is much less than the gas price difference between the two points. The net benefit to the Gas Utility through Q3 of FY 2023 was \$169K, or a reduction of about 0.5% of the total gas commodity costs in FY 2023.

2.1.5 Gas Prepay Valuation

On September 15, 2014, Council adopted [Resolution #9451](#), authorizing the City’s participation in a natural gas purchase from Municipal Gas Acquisition and Supply Corporation (MuniGas) for the City’s entire retail gas load for a period of at least 10 years. The MuniGas transaction includes a mechanism for municipal utilities to utilize their tax-exempt status to achieve a discount on the market price of gas. The program has reduced about \$710K, or 2% of the total gas commodity costs through Q3 of FY 2023.

2.2 Capital Improvement Plan Status

The following capital projects are currently in progress:

- **GS-14003 – GMR 24A (Gas Main Replacement 24A):** The GMR 24A project is substantially completed and 2,450 linear feet of gas main were replaced along Shopping Center Way and Orchard Lane in Stanford Shopping Center.
- **GS-14003 – GMR 24B (Gas Main Replacement 24B):** The GMR 24B project will include gas pipes on University from Webster to Hwy 101 and surrounding streets, as well as Geng Rd and Town & Country Village. Staff received a notification from PHMSA on 3/31/23 that the City was not selected to receive a federal grant award, although the project was “Highly Recommended” and funding was provided to other “Highly Recommended” projects. The funding source for this project will be the remaining available budget under GS-14003. However, the City intends to submit another grant application as part of the next round of federal grants issued by PHMSA.

2.3 Rate and Bill Comparisons

The figure below shows the bills for residential customers in Palo Alto and PG&E, at different levels of usage and rates, both on an annual and monthly basis. The PG&E bills are based on their Climate Zone X, which includes Menlo Park, Redwood City, Mountain View, Los Altos and Santa Clara. In 2022, the median residential customer in Palo Alto paid an annual gas bill of \$821, which was 11% less than what a PG&E customer with the same usage would pay. However, in January 2023, Palo Alto bills were unusually high due to high gas commodity prices.

Figure 12: Residential Natural Gas Bill Comparison (\$/month)

Year/Month	Median Usage ⁶ (therms)	Palo Alto	PG&E Zone X	% Difference
CY 2021	402	\$ 631.28	\$ 701.60	(14%)
CY 2022	402	821.33	868.62	(11%)
January 2023	76	393.57	217.25	75%
February 2023	60	141.08	178.91	(22%)
March 2023	50	92.17	114.94	(20%)

⁶ Based on Palo Alto G-1 monthly median usage.

2.4 Reliability

The City of Palo Alto tracks all gas service interruptions. A summary chart of these interruptions can be found below. Gas service interruptions are usually due to repairs of broken or damaged gas services and mains. This kind of damage is often caused by excavation by outside parties digging in the City.

Figure 13: Gas Service Interruptions, FY 2023

Gas	Q1	Q2	Q3
Number of Breaks	9	4	3
Total Minutes	643	330	240
Customers Affected	20	5	7

2.5 Financial Health

Below is a summary of the financial position for the gas utility.

2.5.1 Sales Forecasts vs. Actuals

Actual gas sales volumes through Q3 of FY 2023 were about 3% higher than forecasted, while actual sales revenues were about 82% higher than budgeted in the FY 2023 Financial Plan. The higher gas sales revenues were due to high gas market commodity prices, which are pass-through in nature and generally offset commensurately higher gas commodity purchase costs, although January 2023 gas prices were not fully passed through to customers.

Figure 14: Gas Sales Volume (Therms), up to FY 2023-Q3

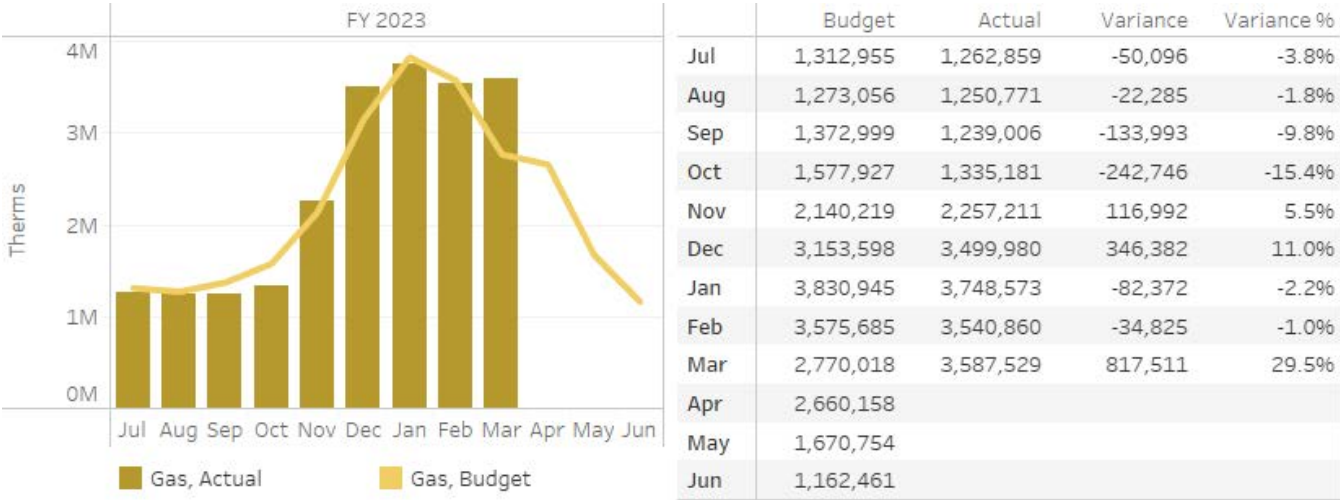
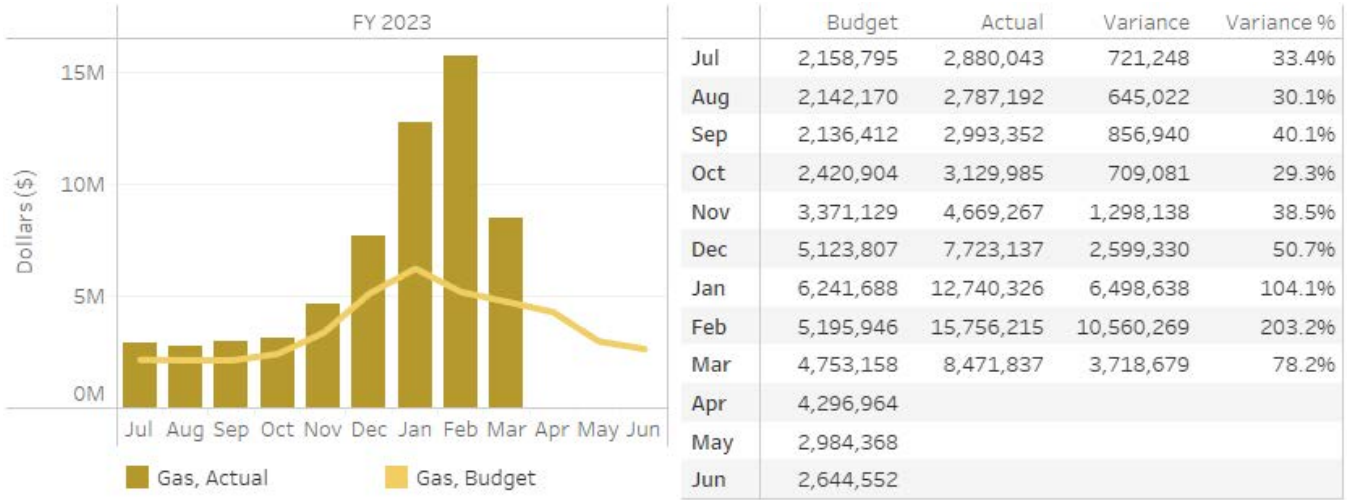


Figure 15: Gas Sales Revenue (\$), up to FY 2023-Q3



2.5.2 Financial Position

The FY 2022 ending Operations Reserve balance was \$11.3 million, above the minimum guideline level of \$7.8 million. The Operations Reserve is expected to drop below the minimum guideline level in FY 2023, given higher than budgeted gas commodity prices that could not be passed through to customers. Through FY 2023 Q3, therm sales volume were about 3% higher than forecasted, but sales revenues were almost 82% higher than budget. Because the gas commodity charge is a pass-through of market costs, typically, increased revenue offsets the increased cost; this year in January, due to unprecedented and extreme gas prices, the revenue was not enough to offset the increased costs because the actual gas commodity price exceeded Palo Alto’s price cap. This will put pressure on reserves in FY 2023. Staff provided financial forecast projections, including reserve transfers, in April 2023 to Council (Staff Report [2303-1219](#)).



3 Water Utility

The Water Utility serves water to virtually all Palo Alto residential and non-residential customers. All potable water in the City is from the San Francisco Public Utilities Commission (SFPUC) Hetch Hetchy Water System. This system delivers high quality water from the Sierra Nevada and uses no pumping to deliver water to the City. Palo Alto uses a small amount of recycled water for irrigation of the Municipal Golf Course and a few other sites near the Regional Water Quality Control Plant. The City also maintains a system of reservoirs and wells that enable Palo Alto to serve water during an interruption of the Hetch Hetchy system. Costs for the Water Utility are split approximately half for the operation, maintenance and periodic replacement of Palo Alto's water system and half for the costs of the water purchased.

3.1 Water Supply and Transmission

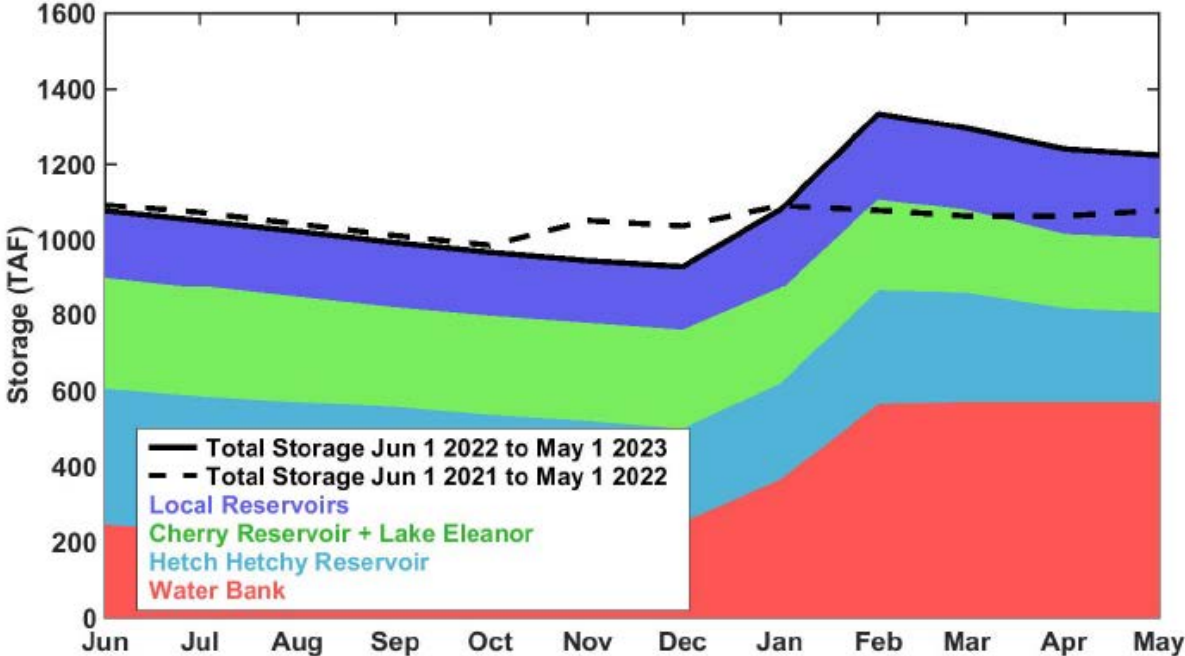
On November 10, 2022, Governor Newsom's senior Water-Policy Officials, the San Francisco Public Utilities Commission (SFPUC), and the Modesto and Turlock Irrigation Districts reached agreement on a Memorandum of Understanding to provide greater water flows and increased habitat for the Tuolumne River. The Bay Area Water Supply and Conservation Agency (BAWSCA) anticipates that this MOU will become a part of a larger voluntary agreement for the Sacramento-San Joaquin Delta. The agreement includes investments of \$64M for habitat restoration. The next step is for the MOU signatories and others to work out the implementation details of a Bay-Delta-wide voluntary agreement for evaluation by the State Water Resources Control Board (SWRCB) as an alternative to the adopted Bay-Delta Plan. The SWRCB's schedule indicates development of the Tuolumne Specific Addendum Scientific Basis Report by fall 2023 and the Phase 1 Final Water Quality Control Plan by summer 2024. On May 18, 2023, the SWRCB held a scoping meeting for a Notice of Preparation for development of an environmental document related to the proposed Tuolumne River Voluntary Agreement. The scoping meeting initiates the SWRCB's evaluation of the proposed Tuolumne River Voluntary Agreement as an amendment to the adopted Bay Delta Plan.

In August 2018, Palo Alto's City Council voted to support the SWRCB's Bay-Delta Plan to have 40 percent of natural water in the Central Valley to enter the Delta from February to June and associated Southern Delta salinity objectives; and send a letter expressing this policy position to BAWSCA, California State Water Resources Control Board, SFPUC, and other stakeholders.

Thirty-one atmospheric rivers from mid-December 2022 to the end of March 2023 meant higher than average precipitation and snow in the Sierras. As of May 1, 2023, the Regional Water System total

storage operated by the San Francisco Public Utilities Commission (SFPUC) was 83% full (normal system storage for this time of year is 81.3%). SFPUC is managing the reservoir so that there is space for snow melt. Water Bank is full and the SFPUC projects that high inflows above and below SFPUC storage reservoirs will maintain a full Water Bank throughout the runoff period (April through July). In the figure below, the solid black line shows storage in the Regional Water System for the past 12 months (color bands show contributions to total system storage) and the dashed black line shows total system storage for the previous 12 months. Regional Water System Storage is 1.26 Thousand Acre Feet (TAF) as of May 1, 2023.

Figure 16: Regional Water System Storage



On August 20, 2021, the SFPUC received curtailment orders for Tuolumne River diversions. The curtailments eliminate access to the Water Bank which, as shown in the figure above, provides much of the system storage. From October 2021 through May 2022, the State Board suspended the curtailments and reinstated them on June 8, 2022. On April 4, 2023, the SWRCB rescinded all orders imposing water right curtailment and reporting requirements, effective immediately.

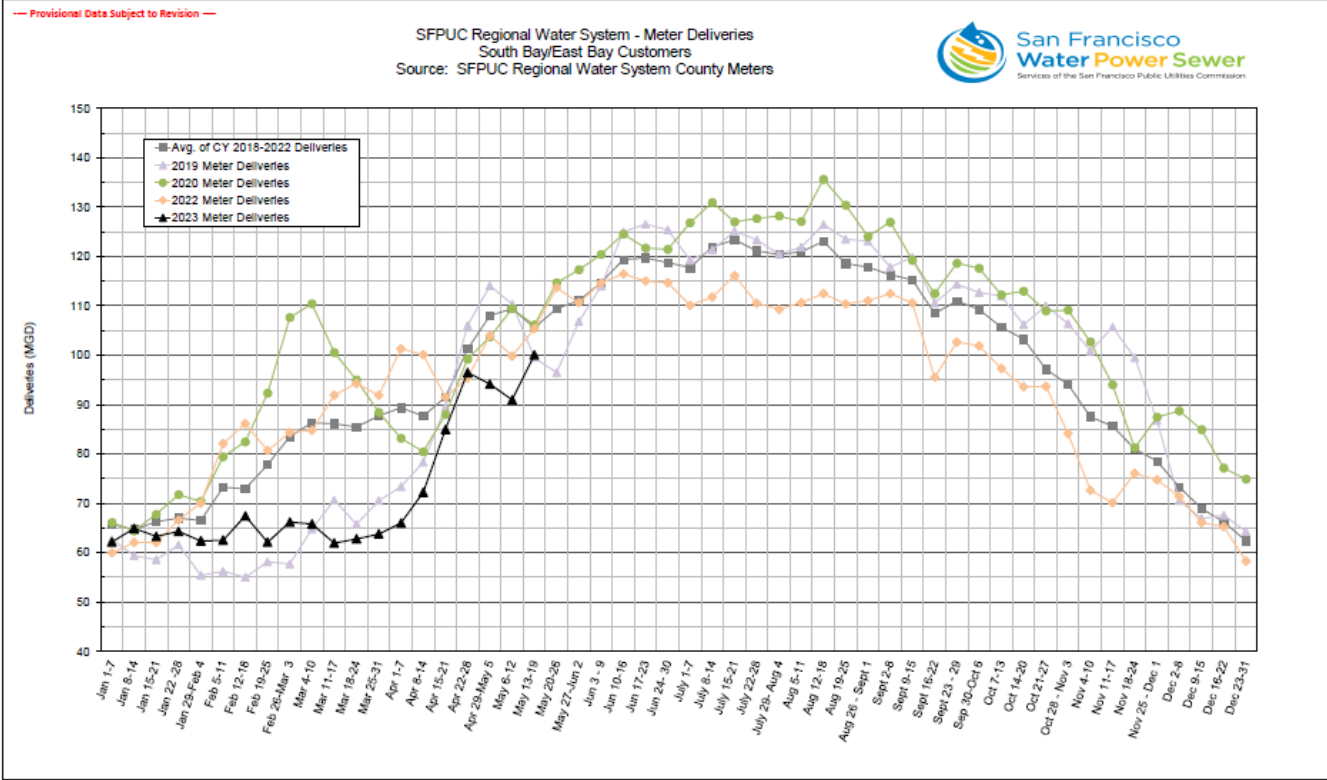
The SFPUC declared a local water shortage emergency by Resolution No. 21-0177 on November 23, 2021, calling for voluntary systemwide 10% water use reductions from FY 2019-2020 levels and increased the systemwide water use reduction to a voluntary systemwide 11% from FY 2019-2020 levels on May 24, 2022 via adoption of Resolution No. 22-0098. SFPUC increased the systemwide water use reduction in compliance with the SWRCB's May 24, 2022 emergency regulation requiring urban water suppliers to implement the demand reduction actions associated with water shortage level of 10% to 20% by June 10, 2022. On March 24th 2023, Governor Newsom issued Executive Order N-5-23 that eliminated the directive for Stage 2 of the Water Shortage Contingency Plans. The SWRCB's

Emergency Regulation requiring Stage 2 Water Shortage Contingency Plan actions expires June 10, 2023. On April 11, SFPUC rescinded the water shortage emergency declaration. The SFPUC’s system-wide water use reduction of 11% remains in place until the expiration of the SWRCB’s Emergency Regulation on June 10th. Palo Alto’s water use restrictions track both the State’s regulation and SFPUC’s water use reduction.

During droughts that require up to 20% cutbacks, water is allocated between San Francisco and the Wholesale Customers collectively based upon the Water Shortage Allocation Plan (or Tier One Plan) that is outlined in Palo Alto’s water supply contract with San Francisco. The collective Wholesale Customer share from the Tier One Plan is then allocated among Wholesale Customers based upon a formula in a negotiated and adopted “Tier Two Plan.” Palo Alto’s current water budget is based upon the results of the current Tier One and Tier Two Plans. Since January 2022, staff have been participating in a negotiation with the other Wholesale Customers to update the Tier Two Plan. Staff expects to finalize the updated Tier Two Plan in 2023.

The figure below shows water usage for the South Bay/East Bay (including Palo Alto) compared to several benchmarks including 2019. For the South Bay/East Bay region as well as systemwide, demand for the first four months of 2023 has been below the average of the last five years.

Figure 17: SFPUC Water Deliveries



Valley Water, the groundwater manager in Santa Clara County, declared a water shortage emergency and adopted a 15% mandatory water use reduction for water retailers its agency serves. Valley Water called for the County, water retailers and cities to restrict ornamental landscape and lawn irrigation with potable water within their service or jurisdictional areas to no more than two days per week. Although

Palo Alto purchases all of its potable water from SFPUC, and does not purchase any water from Valley Water, Palo Alto partners with Valley Water on wide variety of water conservation programs. On June 20, 2022, the Palo Alto City Council restricted potable irrigation of ornamental landscapes and lawns to 2 days per week, except to ensure the health of trees and other perennial non-turf plantings. This restriction tracks both the State’s regulation and SFPUC’s water use reduction and is expected to expire June 10, 2023. The SWRCB also prohibited the use of potable water for the irrigation of “non-functional turf” at commercial, industrial, and institutional sites other than to the extent necessary to ensure the health of trees and other perennial non-turf plantings.

On April 11, 2023, Valley Water rescinded the Water Shortage Emergency Condition and mandatory water use reduction of 15% compared to 2019 and replaced it with a call for voluntary water use reduction of 15% compared to 2019. Palo Alto is working with Valley Water on messaging to customers in the county to avoid confusion as much as possible. As such, the City’s messaging will continue to emphasize the wise use of water rather than specific water usage targets. Palo Alto staff is continuing to focus on education and outreach and providing resources to eliminate water waste and achieve efficient water use and completed the process of hiring a Water Waste Coordinator in October. The Water Waste Coordinator is logging and following-up on water waste reports. Palo Alto is kicking off the WaterSmart Customer Portal and Residential Home Water Report Program and also re-engaging with Waterfluence software to target water efficiency for large landscape customers. Staff continues to promote rebate programs and resources through online outreach, bill inserts, and newsletters. After Palo Alto implemented water use restrictions in June 2022, for the billing months July 2022 through March 2023, compared with the same period from July 2019 to March 2020, the Palo Alto community reduced water usage by 13%.

Palo Alto launched the One Water Plan with the goal of Council adoption of a One Water supply plan that is a 20-year adaptable roadmap for implementation of water supply and conservation portfolio alternatives. In June 2022 the City Council approved a contract for this work with Carollo Engineers, Inc. In September and December 2022, staff conducted stakeholder engagement meetings with community members and City staff focusing on One Water community needs and priorities and water supply and conservation options and draft evaluation criteria. [Additional](#) stakeholder engagement meetings are planned with City staff, community members, and regional partners in summer 2023 to share initial results. The UAC received a status update in February 2023 ([Staff Report #14974](#)) and staff plans to return to the UAC in the fall to provide an update and share initial results.

3.2 Capital Improvement Plan Status

The following capital projects are currently in progress:

- **WS-14001 - WMR 28 (Water Main Replacement 28):** The WMR 28 project replaces approximately 18,763 linear feet of water main and 256 water services in the Crescent Park, Barron Park, and Charleston Meadows neighborhoods. Construction of this project started during April 2022 and the anticipated completion date is in November 2023.
- **WS-07000 – California Avenue and Page Mill Road Turnouts:** The California Avenue and Page Mill Turnouts project upgrades the California Avenue Turnout and adds seismic restraints to the

pressure reducing valve at Page Mill Road Turnout. The construction is delayed due to supply chain issues on the valves. Construction is anticipated to start in November 2023 after the water demand peak season ends. The project duration is about 3 months.

3.3 Rate and Bill Comparisons

The figure below shows the water bills for single-family residential customers compared to what they would be under surrounding communities’ rate schedules as of October 2022. CPAU is among the highest monthly bills of the group. Palo Alto’s water bills at 9 CCF per month are 17% higher than the comparison group average.

Figure 18: Residential Water Bill Comparison (\$/month)

As of October 2022						
Usage CCF/month	Palo Alto	Menlo Park	Redwood City	Mountain View	Santa Clara	Hayward
4	\$50.74	62.83	\$54.04	\$43.47	\$29.32	\$41.03
(Winter median) 7	76.54	87.32	76.09	67.29	51.31	63.23
(Annual median) 9	98.46	103.65	90.79	83.17	65.97	78.03
(Summer median) 14	153.26	148.02	138.94	122.87	102.62	123.48
25	273.82	257.41	267.39	257.81	183.25	223.47

3.4 Reliability

The City of Palo Alto tracks all water service interruptions. A summary chart of these interruptions can be found below. Water service interruptions are usually due to repairs of broken or damaged water services and mains.

Figure 19: Water Service Interruptions, FY 2023

Water	Q1	Q2	Q3
Number of Breaks	10	12	6
Combined Minutes	1007	1050	690
Customers Affected	46	249	63

3.5 Financial Health

Below is a summary of the financial position for the water utility.

3.5.1 Sales Forecasts vs. Actuals

Actual water sales volumes through Q3 of FY 2023 were about 11% lower than forecasted, and actual water sales revenues were about 11% lower than budgeted in the FY 2023 financial plan. Sales were lower due to the water conservation efforts made throughout the drought periods, coupled with rainy

weather during the winter and spring seasons. Staff will continue to promote drought-related and water savings communication through the rest of FY 2023.

Figure 20: Water Sales Volume (CCF), up to FY 2023-Q3

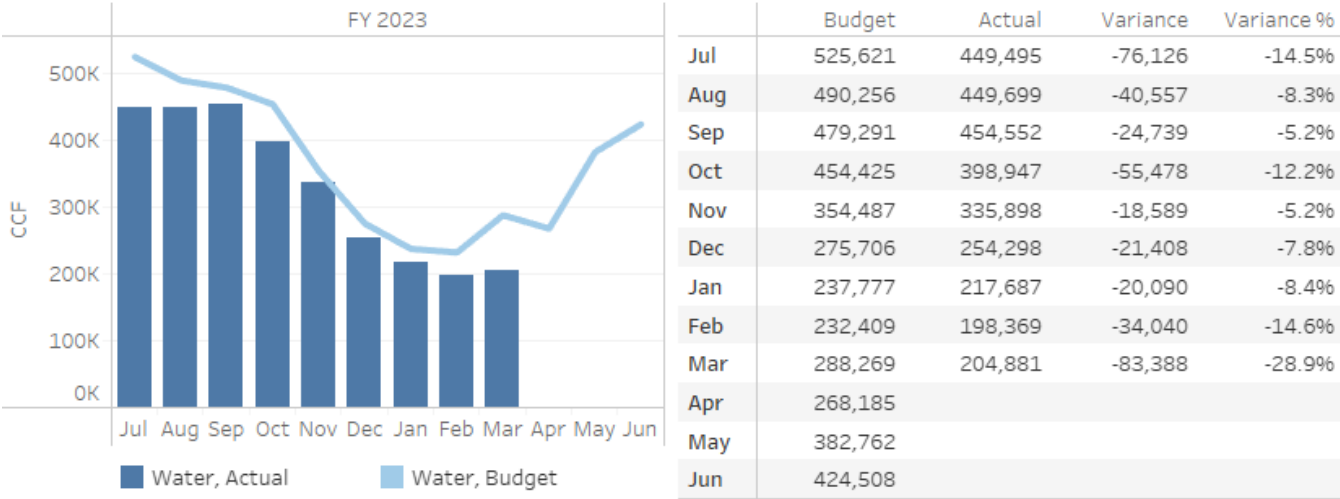
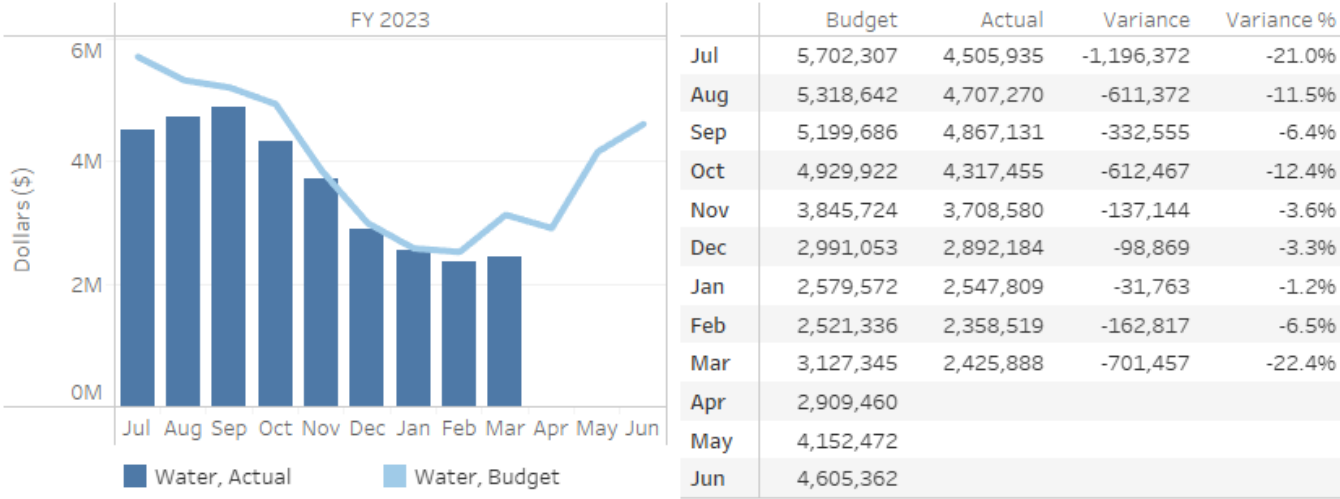


Figure 21: Water Sales Revenue (\$), up to FY 2023-Q3



3.5.2 Financial Position

The Water Operations Reserve was filled to the maximum guideline level at the end of FY 2022 as higher bid costs and delays in project schedules resulted in deferred main replacement projects over the past few years. There are additional funds in the Operations Reserve above the maximum guideline level that will continue to be used to cover water utility operational and capital costs in FY 2023. At year end FY 2022 there was approximately \$12.2 million in Water CIP Reappropriations and Commitments reserves. The FY 2023 Water Utility CIP includes a main replacement (WMR 28) as well as one-time seismic reservoir upgrades (one upgrade is complete and a second and third are planned in FY 2023 and FY 2026). At year end FY 2022, there was also \$10.7 million in the CIP Reserve and \$9.07 million in the Rate Stabilization Reserve. Due to the drought and water conservation efforts, the water utility’s sales revenue declined in FY 2022 by approximately \$3.4 million compared with sales revenue

in FY 2021. The water utility used reserves in combination with rate increases to cover costs in FY 2022 and plans to continue to use reserves in FY 2023 while drought recovery continues to reduce sales revenues. Staff estimates that with expected revenues and expenses together with transfers from the CIP Reserve, the Operations Reserve will reach approximately target levels by the end of FY 2024. Staff provided financial forecast projections including proposed reserve transfers in April 2023 (Staff Report [2303-1218](#)) and will provide final rate proposals to Council on June 19, 2023.



4 Wastewater Utility

The Wastewater Utility includes the system of sewer pipes that collect and transport wastewater to the Regional Water Quality Control Plant (RWQCP) operated by the City of Palo Alto under a partnership agreement with several surrounding communities, as well as Palo Alto's share of the cost of operating the RWQCP. The RWQCP provides treatment and disposal of wastewater for Palo Alto. Costs for the Wastewater Utility are split approximately half for the operation, maintenance and periodic replacement of Palo Alto's sewer collection system and half for the costs of wastewater treatment at the RWQCP.

4.1 Wastewater Treatment Updates and Capital Planning Status

The RWQCP is operated by Palo Alto's Public Works Department and provides wastewater treatment to Palo Alto, Mountain View, Stanford, Los Altos, East Palo Alto and Los Altos Hills. The Palo Alto Wastewater Collection Utility pays its share (approximately 32% projected in FY 2024) of the costs for wastewater treatment and disposal. Capital costs for wastewater treatment are a major driver for cost increases for the Wastewater Treatment Utility and by extension for the Wastewater Collection Utility. The RWQCP is facing the need for major upgrades in coming years, due to aging equipment and changing environmental regulations. Rehabilitation and replacement of plant equipment that has been in use for over 40 years is necessary to ensure the City can continue to conduct wastewater treatment operations safely and in compliance with regulatory requirements for the discharge of treated wastewater 24 hours a day.

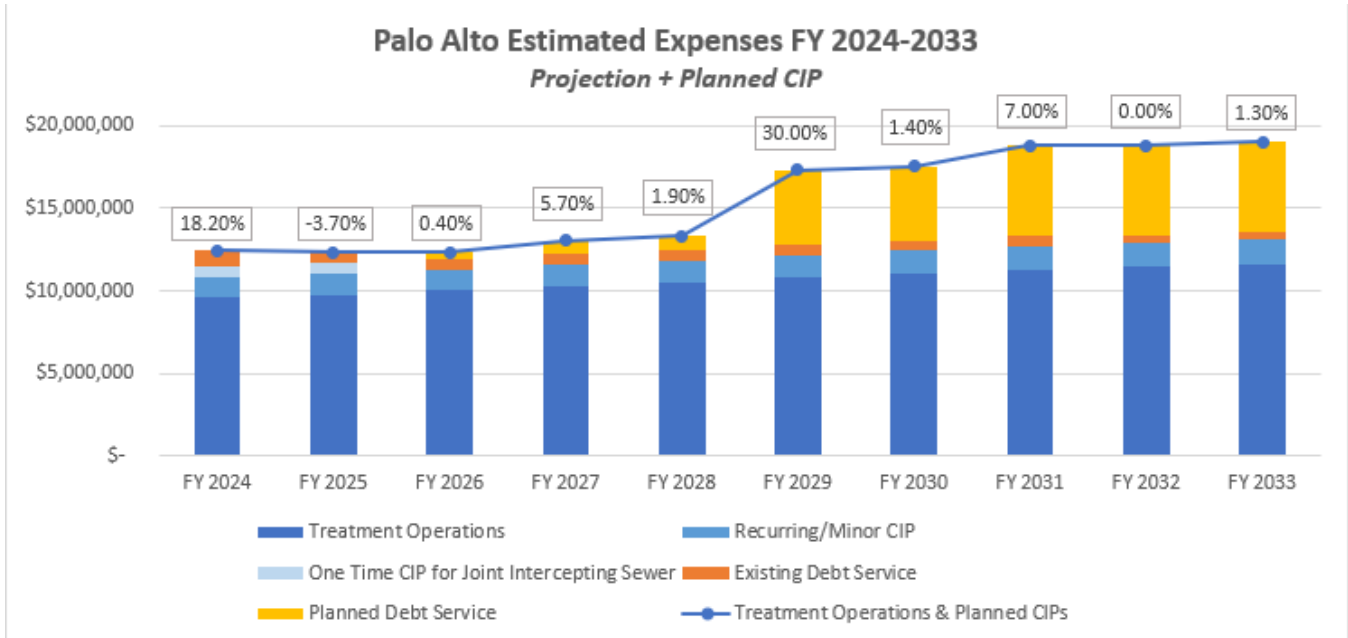
4.1.1 Treatment Cost Trends

RWQCP staff project treatment costs paid for by Palo Alto's Wastewater utility to increase by approximately 4.8% annually on average from FY 2024 through FY 2033. A key driver of the increases are capital projects, parts, materials and debt. The treatment capital expenses, including debt service costs, are increasing at an average of about 11.5% per year from FY 2024 through FY 2033 to keep up with ongoing replacement of aging equipment. Larger increases to capital expenses are expected to begin in FY 2026 in the form of new debt service for major projects to implement the Plant's capital program. The figure below shows Palo Alto's share of each component of estimated treatment costs. Major upcoming capital projects and estimated years for debt service to begin are reflected in the "Planned Debt Service" bar in the figure below and include:

- Joint Interceptor Sewer Rehabilitation (FY 2024- FY 2025)
- 1900 Embarcadero Road Purchase(FY 2024)

- Primary Sedimentation Tank Rehabilitation (FY 2025)
- Outfall Line Construction (FY 2027)
- Operations Building Remodel(FY 2028)
- Secondary Treatment Upgrades, Headworks Facility (FY 2029)

Figure 22: Palo Alto’s Share of Estimated Wastewater Treatment Expenses (Projection and Planned CIP)



The figure above shows the ongoing annual CIP reinvestment (“Recurring/Minor CIP” and “Existing Debt Service”) as well as treatment operations costs, which make up the majority of the treatment costs but are not growing as quickly as the planned debt service. Factors that are contributing to cost increases for treatment operations are rising salary and benefits costs, allocated charges for centralized city services needed to support wastewater treatment fund operations, increased water and air permitting fees from the Regional Water Quality Control Board and Bay Area Air Quality Management District, commodity rates to operate the facility, and chemical expenses.

4.1.2 Regional Water Quality Control Plant Capital Planning Status

The Long-Range Facilities Plan, completed in 2012, guides the capital plans for the RWQCP. The RWQCP is planning to begin an update to the Long-Range Facilities Plan in 2023. The RWQCP’s current capital work in-progress includes an estimated \$398 million in projects. The following table summarizes these ongoing projects and provides their status and costs.

Figure 23: Current RWQCP Capital Work In-Progress (based on RWQCP November 2022 Partners Meeting)

Project	Status	Expense (million \$)
Primary Sedimentation Tanks Rehabilitation and Equipment Room Electrical Upgrade	Construction	\$19.4
New Outfall Pipeline	90% Redesign	\$17.4
Secondary Treatment Upgrades	Awarding Construction	\$193
Advanced Water Purification System	90% Design	\$56
Technical Services Building/Lab Building, Ops Building Remodel	Advanced Planning	\$41.4
Buy 1900 Embarcadero Road	Planning	\$6.0
Headworks Facility Replacement	Budgeted	\$48.6
Joint Interceptor Sewer Rehabilitation	30% Design	\$5.6
Other Projects in Progress	Various	\$10.6
	Subtotal	\$398

One of the largest projects listed above is the Headworks Facility Replacement, which involves replacement or rehabilitation of the parts of the facility that pump raw sewage to the main treatment works (the headworks), and rehabilitation of primary sedimentation tanks that separate out primary sludge. Additionally, the RWQCP anticipates regulations to limit nutrient discharges (on total nitrogen) into the San Francisco Bay. The current secondary treatment design cannot remove nitrogen and the Secondary Treatment Upgrades will address this regulatory change as well as address aging mechanical and electrical equipment that must be replaced.

The RWQCP plans to fund these capital projects through a combination of mechanisms including State Revolving Fund loans, and revenue bonds. In addition, Valley Water will be providing \$16 million of funding for the Advanced Water Purification System. Additionally, Palo Alto was awarded a \$12.9 million grant for the Advanced Water Purification System from the United States Bureau of Reclamation’s WaterSMART program, which allocates Title XVI Program funding under the Water Infrastructure Improvements for the Nation (WIIN) Act.

4.2 Collection System Capital Improvement Plan Status

The following capital projects are currently in progress:

- **WC-17001 - SSR 30 (Sanitary Sewer Replacement 30):** The SSR 30 project was completed in April 2023 and replaced approximately 9,649 linear feet of wastewater main and 195 sewer laterals in the Ventura, Research Park, Fairmeadow, and Midtown West neighborhoods.
- **WC-19001 - SSR 31 (Sanitary Sewer Replacement 31):** The SSR 31 project replaces approximately 11,000 linear feet of wastewater main, sewer laterals, and manholes on El Camino Real and Page Mill Road. This project was approved by Council on 5/8/23. Construction is anticipated to start in late July or early August of 2023. 40% of the work will be performed during nighttime due to Caltrans’ restriction to close 2 traffic lanes during daytime. Staff coordinated the schedule with Caltrans and County of Santa Clara to stay ahead of their street improvement/paving projects. The SSR 31 contractor is expected to work 2 shifts during the day and night to expedite the sewer replacement and avoid digging into Caltrans or County’s newly paved streets.

4.3 Rate and Bill Comparisons

The figure below shows the wastewater monthly bill for residential customers in Palo Alto compared to what they would be under surrounding communities’ rate schedules as of November 2022. Palo Alto’s monthly sewer bill is lower than four of the six neighboring communities. Menlo Park in this table refers to the West Bay Sanitary District. Staff will report on future rate increases once they are adopted by the wastewater utilities.

Figure 24: Residential Wastewater Bill Comparison (\$/month)

As of November 2022						
Palo Alto	Menlo Park	Redwood City	Mountain View	Los Altos	Santa Clara	Hayward
\$44.62	\$106.67	\$89.28	\$50.10	\$42.05	\$46.82	\$38.58

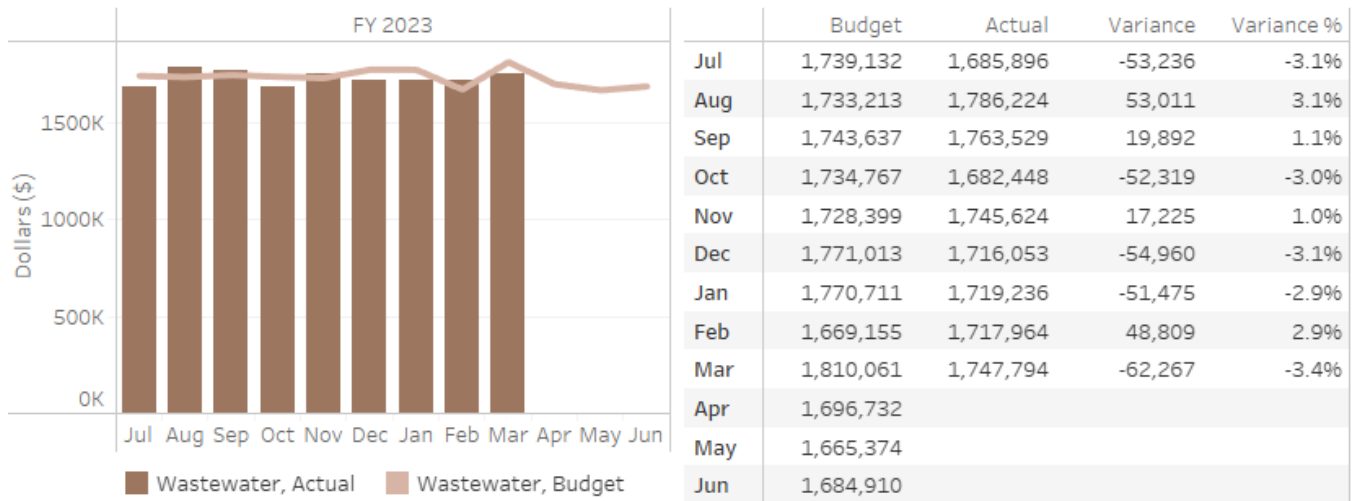
4.4 Financial Health

Below is a summary of the financial position for the wastewater utility.

4.4.1 Sales Forecasts vs. Actuals

Actual wastewater sales revenues through Q3 of FY 2023 were about 1% lower than forecasted in the FY 2023 Financial Plan.

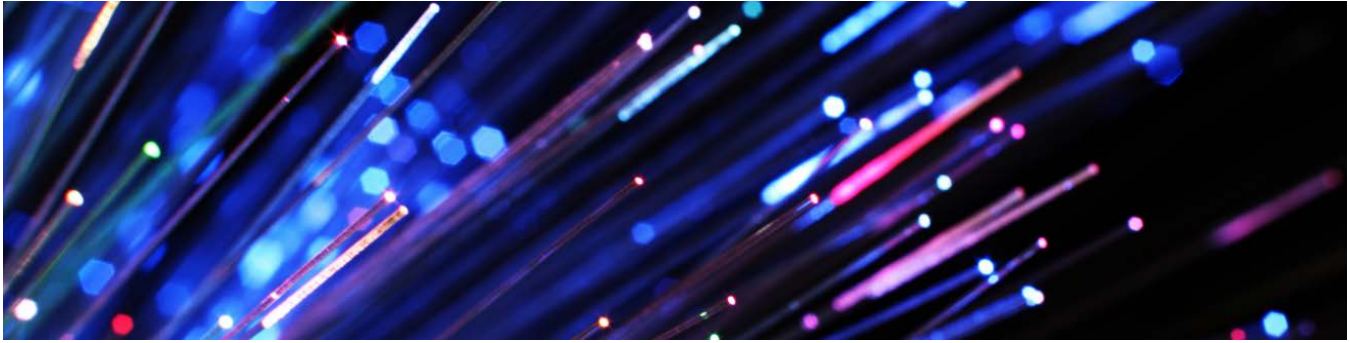
Figure 25: Wastewater Sales Revenue (\$), up to FY 2023-Q3



4.4.2 Financial Position

The Wastewater Collection Operations Reserve was within the guideline range at year end FY 2022; the CIP Reserve had a balance of approximately \$3.2 million at year end FY 2022 and staff will seek Council approval in the FY 2024 Wastewater Collection Financial Plan to access funds in the CIP Reserve needed for CIP projects in FY 2023. The Wastewater Collection Utility CIP Reappropriation and Commitment Reserves totaled \$4.6 million at the end of FY 2022. Rising main replacement costs as well as the need to accelerate main replacement to prudently manage the City’s infrastructure together with rising wastewater treatment costs is placing pressure on the wastewater utility’s

reserves. Staff provided financial forecast projections in April 2023 (Staff Report [2303-1218](#)) and will provide final rate proposals to Council on June 19, 2023.



5 Fiber Utility

The City offers a "Dark" fiber service providing a fiber connection from Palo Alto businesses to the downtown Internet Exchange. At the exchange, businesses select an internet service provider (ISP) for bandwidth and connection speed.

5.1 Fiber Utility Strategic Planning

On May 1, 2023 the Council approved the contract amendment with Magellan through March 2025 for the continued provision of consulting services for a multi-phased fiber optic network expansion plan, which includes program management of construction of the fiber backbone and phase 1 of Fiber-to-the-Premises (FTTP), network operations and technical support, and electrical make ready engineering in an amount not to exceed \$2,473,600 ([Staff Report #2303-1215](#)). Although the phased build approach to FTTP will decrease the City's financial risk and increase Council's control over the velocity of the buildout, the City does not have the in-house staffing to fully deploy the fiber backbone project and first phase of FTTP. These projects will require significant staffing and specialized skill sets over the next several years. Fiber backbone construction includes an estimated 28 miles of underground construction and 10 miles of aerial construction. Phase 1 for FTTP includes an estimated 18 miles of underground construction and 63 miles of aerial construction. In addition to construction, the City will be starting up a new internet service provider (ISP) business.

As the City solidifies staffing plans in parallel with contracted services, the Director of Information Technology, Darren Numoto, will take on the responsibilities of an Assistant Director for Palo Alto Fiber on an interim basis. As part of the FY 2024 proposed budget, staff will be bringing forward a recommendation to add four (4) new FTE positions for the dark fiber expansion and implementation of FTTP. These positions are Assistant Director, Outside Plant Manager, Marketing and Sales Manager and Network Architect/Senior Engineer. These positions will be recruited and filled as needed during the various stages of the project. The scope of services provided by Magellan and the associated compensation under the new amendment may decrease when the City hires internal FTEs and/or outsources specific activities.

5.2 Capital Improvement Plan Status

Given Council's approval of construction of phase one of FTTP, CPAU will create a new FTTP CIP project under the fiber utility in the FY 2024 Fiber CIP Budget. In the FY 2024 Fiber CIP budget, \$20 million will be budgeted in the new Fiber-to-the-Premises (FO-24000) CIP and an additional \$13 million will be budgeted in the Fiber Optics Network – System Rebuild (FO-16000) CIP for the new fiber backbone.

5.3 Reliability

There were no unplanned fiber outages or events to report in Q3 of FY 2023.

5.4 Financial Health

Below is a summary of the financial position for the fiber utility.

5.4.1 Fiber Sales

Actual dark fiber revenues through Q3 FY 2023 were \$2.8 million, which is within the FY 2023 revenue forecast of \$3.6 million. Based on the number of new dark fiber applications, staff projects annual fiber revenues will return to pre-pandemic level of \$4.5 million by end of FY 2024. To expand the dark fiber business, CPAU has hired a full-time Fiber Market Analyst to promote dark fiber and Fiber Engineer to reduce fulfillment time for new applications. CPAU staff is exploring new dark fiber services with Tesla for their new engineering headquarters on Page Mill Road.

Actual fiber expenses through Q3 FY 2023 were \$2.1 million which is comprised of salaries and benefits (\$1.1 million), contract expenses (\$0.2 million), administration overhead (\$0.6 million), and transfers to other utilities (\$0.2 million).

5.4.2 Financial Position

The projected ending FY 2023 Fiber Optic Utility Rate Stabilization Reserve is \$34.0 million.



6 Customer Programs (Efficiency and Sustainability)

The City’s Utilities Department maintains a number of programs to help customers save money, use energy and water efficiently, and reduce carbon emissions. These programs are funded through a variety of funding sources, some of which are summarized below.

6.1 Customer Programs Updates

Below is a summary of the City’s energy and water efficiency programs, as well as programs to encourage building electrification and adoption of electric vehicles.

6.1.1 Energy and Water Efficiency

Energy & Water Efficiency Workshops

The City, in partnership with the Bay Area Water Supply and Conservation Agency (BAWSCA), will hold four landscape efficiency workshops in Spring 2023. The workshops will cover topics on rain gardens, how to water trees, steps to take to convert lawns into drought-tolerant landscapes, and available rebates.

Figure 26: Schedule of CPAU Workshops (April - June 2023)

Event #	Date	Event
1	4/26/2023	Lawn Removal Workshop
2	5/3/2023	Tree Watering and Care Workshop
3	6/24/2023	Spring Planting Workshop
4	6/29/2023	Rain Garden Workshop

Please visit the BAWSCA website for a complete list of available classes and events at:

<https://bawasca.org/conserve/programs/classes>. All past Landscape Class Videos are available online at: <https://bawasca.org/conserve/landscaping/videos/>. For updates on future events and workshops, please visit <http://cityofpaloalto.org/workshops>

With collaboration from the Palo Alto City Library, City Manager's Office, Public Works, and the Utilities Department, an [Earth Day event](#) was held on Saturday, April 22 from 10 a.m. – 1 p.m. at Rinconada Library. Over 100 attendees learned about different climate-friendly choices they can make in their home, including water saving landscaping and the advantages of going all electric.

Residential Energy and Water Programs

The Home Efficiency Genie program continues to provide residents with professional advice and information to improve their home's efficiency and comfort, lower their energy and water usage and get guidance on home electrification options. Even with the Genie returning to in-home comprehensive and diagnostic assessments in the fall of 2021, the virtual option developed during COVID continues to be a service that residents are interested in. The Home Electrification Readiness Assessment (HERA) was also amended to include a virtual version during COVID. Both the in-home and virtual versions continue to help residents assess home electrification upgrades that their home can accommodate and provide actionable next steps. Between January and March of 2023, the Genie performed 8 comprehensive in-home assessments, 5 in-home assessments and 23 virtual assessments. CPAU's Residential Energy Assistance Program (REAP) for income-qualified customers continues to reach our most vulnerable population offering energy and water efficiency improvements at no cost to the customer. Residents who are newly qualified for CPAU's Rate Assistance Program (RAP) are notified each month of their eligibility for these free upgrades installed by CPAU's vendor, Synergy. Multiple projects are being scheduled for REAP customers to take advantage of the free efficiency upgrades, with projects including building envelope improvements, furnace replacements with high efficiency models, and lighting upgrades to LEDs.

For our multifamily (MF) property owners, CPAU continues to offer the Multi Family Plus (MF+) program which offers free energy efficiency upgrades installed by our vendor, Synergy. These upgrades include lighting upgrades to LEDs and whole building envelope upgrades.

CPAU partners with Valley Water to offer a robust portfolio of water conservation programs and [rebates](#) for residents and businesses. On July 1, 2022, the City entered into a new cost-sharing agreement with Valley Water which increases rebate amounts for converting turf into drought-tolerant landscapes and includes a new Lawn to Mulch rebate program for commercial customers. As drought conditions continue, CPAU is focusing outreach on reducing outdoor water use and continues to encourage participation in rebates and resources.

Commercial & Industrial Energy Efficiency Program

As of May 1, 2023, Enovity has 19 projects in process with 2,114,518 kWh savings. The Key Account Representatives have been actively reaching out to engage customers with direct email contacts and setting up face to face meeting.

Figure 27: Energy Efficiency Program Energy Savings

Project Name	Customer Facility Address	Project kWh Savings at Commitment	Project Cost at Commitment	Project Incentive at Commitment
1050 Arastradero LED Phase 2	1050 Arastradero	41,777	\$37,100.00	\$4,177.70
3165 Porter LED Phase 2	3165 Porter St	30,263	\$47,381.00	\$3,026.30
801 Welch LED	801 Welch	33,526	\$44,492.00	\$3,352.60
855 CA Chlr RCx	855 California	61,200	\$5,000.00	\$2,500.00
3375 Hillview Chlr Replacement	3375 Hillview	399,000	\$350,000.00	\$59,850.00
1189 Welch LED	1189 Welch	309,132	\$50,000.00	\$25,000.00
Tesla 3500 Deer Creek	3500 Deer Creek	0	\$0.00	\$0.00
3825 Fabian Way, SSL	3825 Fabian Way	0	\$20,000.00	\$3,150.00
PA Square Phase 1	3000 El Camino Real	70,436	\$135,000.00	\$7,043.60
Stanford Shopping Center LED	660 Stanford Shopping Center	187,143	\$76,818.00	\$18,714.30
CPI	811 Hansen Way	0	\$0.00	\$0.00
LPCH Main Ventilation Reduction	725 Welch Rd	0	\$0.00	\$0.00
1050 Arastradero Economizer	1050 Arastradero	51,450	\$50,000.00	\$8,495.00
855 CA Chlr RCx Phase II	855 California	26,754	\$4,000.00	\$2,000.00
CPI Power Supply	811 Hansen Way	0	\$0.00	
LPCH Main LED	725 Welch Rd	748,037	\$227,740.00	\$74,803.70
875 Blake Wilbur Controls Upgrade	875 Blake Wilbur	123,800	\$555,000.00	\$53,170.00
1050 Arastradero HHW Valve	1050 Arastradero A	32,000	\$20,000.00	\$4,900.00
Stanford West Child Care Electrification	625 Clark Way	0	\$0.00	\$0.00
Cabana Hotel Electrification	4290 El Camino Real	0	\$0.00	\$0.00
		2,114,518	\$1,622,531.00	\$270,183.20

Business Customer Rebates, formerly Commercial Advantage Program

The Business Customer Rebate (BCR) remains the primary program for customers to apply for rebates for energy efficiency and electrification projects installed at customers sites. City of Palo Alto Utilities (CPAU) offers rebates to commercial, industrial, and public sector customers to upgrade their equipment to energy-efficient products. In May 2022, BCR was expanded to offer electrification rebates to incentivize customers to retrofit gas space heating, water heating and cooking equipment with efficient electric alternatives. This program has limited participation as business customers continue to implement projects at a slow pace. As of May 1, 2023, only two projects have been implemented, with approximately 185,00KWH saved.

Business Energy Advisor

The Business Energy Advisor program is progressing, having 7 new site assessments and 4 site assessment reports completed and presented to customers in Q3 FY 2023. There continues to be a heavy focus on outreach and promotion of this new program with a direct mailer postcard reaching close to 3,000 business customers and CLEAResult outreach reaching an additional 600 customers. The next steps for this program include completing a business resources and programs catalog to pass out to customers while doing in person outreach and implementing this program into the EECF database system for tracking and reporting.

6.1.2 Building Electrification

[Business Electrification Technical Assistance Program \(BE TAP\)](#)

For commercial customers, staff partnered with CLEAResult in the launch of the Business Electrification Technical Assistance Program (BE TAP) in August 2022. This program offers free electrification assessment and technical assistance to implement building electrification projects to a variety of

business types including but not limited to hotels, restaurants, churches, and office buildings. To date, program outreach activities include call campaigns, e-newsletters, in person door-to-door outreach, and utility bill inserts. A total of 3 site assessments were completed and 1 site assessment report was returned to the customer in Q3 FY 2023. In the pipeline we have about 5 reports to return to customers and additional assessments to schedule.

6.1.3 Electric Vehicles

Palo Alto continues to facilitate the installation of EV charging infrastructure throughout the City to support mass EV adoption, with equitable access for multifamily and income-qualified residents, as well as workplaces, public parking lots and retail areas. Correspondingly, cross-departmental work is progressing on proposals for fleet electrification.

Financial Overview

FY 2022 EV program related expenses were \$1.3M, of which \$0.465M was for the second installment of the CALeVIP program, \$286k was contribution to the Clean Fuel Rebate (CFR) program, \$121k for EVTAP (Electric Vehicle Technical Assistance Program) management by CLEAResult, and \$170k in customer rebate payments. Revenues for the year is \$1.0M, lower than anticipated a year ago due to declining market prices for LCFS credits. As of 6/30/2022, the LCFS program fund had a reserve balance of \$7.23M.

Summary of All EV Programs for Multi-family (MF) Properties and Workplaces

- **Mission:** The EV team's mission is to facilitate the installation of EV chargers to support increased EV adoption with a priority on MF properties. To reach 80 by 30 S/CAP goals, it is imperative that there is enough charging infrastructure for residents, commuters and visitors. For residents, the priority is to close the MF EV access gap, as only 13% of EVs in Palo Alto are registered at MF buildings, while MF makes up 42% of households.
- **Goal of EV Programs:** Expand EV charging accessibility to 10% of MF households (about 1,100 homes) by 2025.
- **Why:** Most middle-income and low to moderate-income residents in Palo Alto live in MF housing. Of the 11,000 households living in MF, 23% have annual income levels which are under 400% Federal Poverty Levels. EVs provide significant lifetime household savings, and yet those who most need those savings have the hardest time gaining EV charging access due to the challenges associated with installing chargers at MF properties. Private industry is not adequately serving this market, whereas the City is well-positioned to support this hard to reach and slower to move customer segment, making meaningful use of available City funding sources for EV promotion.
- **Target Customer Segment:** MF property owners, Homeowners Associations (HOAs), nonprofits, owners of small medium businesses and buildings, as well large C&I customers.
- **What CPAU can provide:**
 - Trusted, neutral advisory services (rather than vendor sales services) with a direct connection to internal City staff to facilitate problems.
 - Technical assistance (site evaluation, including electrical capacity, business case development, project design, obtaining bids, preparing permit packages)
 - Incentives (both for charging equipment and distribution upgrades)
- **Strategy:** Facilitate development of shared Level 2 chargers in multi-family buildings as well as, as many Level 1 chargers as can be installed. Size electrical infrastructure to enable the building owner to add more EV

charging ports in the future. Also, encourage the installation of low-power Level 2 chargers when appropriate as a grid-friendly strategy to increase EV charging options for as many EVs as possible.

Aggregated Results to-Date for All EV Programs Targeting Multi-family (MF) Properties and Workplaces

- **Program Commencement:** December 2017 (multi-family rebates), October 2019 (multi-family/nonprofit technical assistance), December 2019 (workplace charging rebates)
- **Leads:** Over 130 sites have enrolled in the programs, of which 86 are multi-family properties representing over 3400 units
- **Results:** When the active projects are completed, the City will have:
 - Facilitated access to EV charging for over 1500 multi-family housing units. Without accessible charging facilities these residents are unlikely to consider an EV.
 - Access to EV charging for employees of several non-profits and workplaces.
- **Marketing Strategy:** Of Palo Alto's 803 multi-family (MF) buildings, focus on the largest 5% (44 sites) which represent 32% of total MF units (about 3800 households). Also, partner with affordable housing providers which represent over 1600 low-income households at 35 sites of which 5 properties have 100 units or more. Outreach consists of direct outreach to property owners via call campaigns, with marketing done by the 3rd party program provider, CLEAResult.

Updates by EV Program

- **EV Technical Assistance Program (EVTAP)**

Goal: Facilitate the installation of 180-360 ports @ 60-90 sites (By 2024)

Offer technical assistance for the installation of EV chargers at Non-Profit and MF properties, involving a series of site visits, technical evaluations, engineering reviews, and design proposals, culminating in the landlord receiving contractor bids, followed by assistance submitting a building permit, applying for incentives and project management of the installation. Completed projects have taken up to 2 years to reach completion.

As of the end of March 2023:

- 87 signed Program Participation Agreements sites enrolled and working through the program
 - 46 sites with contractor bids
 - 11 permit applications submitted
 - 5 installations complete
 - 62 new EV charging ports installed
 - Currently proposed EVSE installations
 - 217 Level 1 charging ports
 - 600 Level 2 charging ports
- **EV Charger Rebate Program**

Goal: Incentivize the installation of EV chargers at Non-Profits and Multifamily properties. CPAU currently offers up to \$8,000 per port for up to 10 ports. Currently looking into lowering rebate levels due to increased demand for rebates and a decreased income from Low Carbon Fuel Standard credits (see 6.2.1). The program is also considering putting a time limitation on fund reservations, to accelerate projects reaching completion.

As of the end of March 2023:

- Since the launch of this program in 2017, CPAU has facilitated the installations of 126 new EV charging ports/connectors at 16 sites. The breakdown of the installation sites: 7 MF and 9 non-profits (including 3 schools). Avg. cost of each port was \$10k and projects have averaged 12 months to complete.

- **California Electric Vehicle Infrastructure Project (CALeVIP)**

Goal: Facilitate and Incentivize the installation of EV chargers at commercial sites.

As of March 2023, a total of \$1.7M (out of \$2M) has been reserved by 13 site owners through CALeVIP, a commercial EV charging, matching grant program sponsored by the California Energy Commission (CEC). The proposed installations could lead to the installation of 191 Level 2 ports and 12 DC Fast Chargers.

- 0 installations completed
- 13 sites enrolled and working through the program (1 hotel, 10 office sites, 1 retailer and 1 multi-unit dwelling)
- 8 Permit Applications Submitted
- 8 Permits Issued
- Potential for 191 Level 2 ports and 12 DC Fast Chargers

- **EV Awareness and Outreach**

Goal: Raise awareness, answer questions and encourage residents to consider transitioning to electrified modes of transportation, including electric cars, e-Bikes and other modes of clean transportation. CPAU is offering a wide array of EV classes and events, partnering with multiple vendors and organizations. As of March 2023, CPAU hosted eight EV and electrification online workshops and in-person events with 580 attendees. From January through March 2023, CPAU hosted seven virtual EV educational workshops and one in-person EV expo, totaling in 450 and 130 participants in attendance, respectively. CPAU anticipates offering over 30 online and in-person workshops and events during calendar year 2023.

January – March 2023:

- 8 EV education and outreach events completed

Figure 28: Tentative Schedule of CPAU EV Workshops and Events, April – June 2023

Event #	Date	Event
1	4/5/2023	Trilingual EV Financial Incentives Clinic (online)
2	4/11/2023	Save Money with an EV in 2023 (online)
3	4/15/2023	E-Bikes in the Park w/ EV Expo @ Mitchell Park (in-person)
4	4/30/2023	Evs and Espresso! EV Expo @ Congregation Etz Chayim (in-person)
5	5/13/2023	Goodbye Gas, Hello Evs! w/ EV Expo @ Mitchell Park Community Center (in-person)
6	5/15/2023	EV 102 (online)
7	5/31/2023	Evs for Backup Power (online)
8	6/22/2023	Corporate EV Expo @ VMware (in-person)

Visit <http://www.cityofpaloalto.org/workshops> for information on upcoming classes.

- **City-Owned EV Chargers**

Goal: Install EV Charging Infrastructure for the public as well as City-fleet.

As of the End of December 2022:

- 124 – City-Owned Ports
- 120 – Publicly accessible EV Charging ports
- Newest chargers: 6 ports at renovated Junior Museum on 1451 Middlefield Rd.

- **Transformer Upgrade Rebate Program**

Goal: Provide discounts to defray the cost of utility distribution system upgrades triggered by EV applications, costs that would otherwise be borne by the customers. With this program we are offering up to \$100K for MF & non-profits and up to \$10K for Single Family Homes

As of the End of December 2022:

Many older properties in Palo Alto, especially multifamily buildings, have limited electric capacity to accommodate EV chargers and building electrification. Yet, there is a nationwide transformer supply shortage, potentially delaying customer EV projects. In the meantime, the EV team is working closely with Engineering and is conducting a pre-screening of transformer loading for all commercial EV projects enrolled in EVTAP as well as proposing designs utilizing existing electric capacity.

6.2 Funding Sources for Emissions Reductions

Energy efficiency and water efficiency programs have traditionally been funded by electric, gas, and water rate revenues. To fund emissions reduction programs, the City has developed multiple alternative funding sources:

- **Low Carbon Fuel Standard (LCFS) Program:** The City participates in the California Air Resources Board (CARB) LCFS program, receiving credits for the provision of low-carbon fuels (such as clean electricity and compressed natural gas) and must use the revenues from the sale of these credits for programs and other efforts promoting low-carbon vehicle adoption.
- **Cap and Trade Program:** The City's electric and gas utilities are required to participate in the State's cap and trade program, but these utilities receive some of the revenue from the auction of allowances for the program. The revenue must be used for emissions-reducing activities.
- **Public Benefits Funds:** Locally owned municipal utilities must collect a surcharge from their electric utility customers under section 385 of the Public Utilities Code (there is a similar requirement for gas utilities) to be used on cost-effective energy efficiency and conservation, low-income programs, renewable energy, and research and development.

The amount of revenue currently held in reserve for each revenue source and the projections for future revenue are shown below.

Figure 29: Potential Emissions Reduction Funding Sources

	Reserves (\$000)	Projected Revenues (\$000)			
	(July 1, 2022)	FY 2023	FY 2024	FY 2025	FY 2026
LCFS Program	7,236	2,258	2,684	3,002	3,362
Cap and Trade (Electric)	1,189	3,027	3,016	2,992	2,999
Cap and Trade (Gas)	6,731	2,102	3,074	3,487	3,898
Public Benefits	3,890	3,841	4,780	5,076	3,729

Expenditures for each revenue source are as follows:

- LCFS revenues have been used primarily to facilitate the installation of EV chargers in multi-family buildings and are expected to be used that way in the future unless the City’s priorities shift. Some has been used for general promotion of Evs.
- Cap and Trade revenues have been used to purchase renewable energy and for the Advanced Heat Pump Water Heater pilot. More use of these revenues for electrification programs is expected in the future, though no specific approvals have been sought yet.
- Public Benefit funds are used for energy efficiency (including low-income programs) and building electrification.



7 Communications

This section summarizes communications highlights, updates on major campaigns and noteworthy events. Copies of ads and bill inserts are available online at <http://cityofpaloalto.org/UTLbillinsert>.

Rebates for High Winter Energy Costs: CPAU credited residential utility customer accounts with a “Winter Rebate” for the extraordinarily high gas and electric utility costs that the region experienced this winter. This rebate was approved by City Council in early April 2023 to provide needed financial relief to residents and was calculated based on a customer’s January electric and/or gas utility bill costs. The fixed rebate for gas services ranges from \$70 to \$100 and the fixed rebate for electric services ranges from \$20 to \$65. Additional relief of \$100 for electric and \$100 for gas service was provided to residents enrolled in the Utilities Rate Assistance Program (RAP) and/or have a past due balance of greater than 180 days. An additional flat rate rebate is available through the end of October 2023 to residents who do not currently qualify for the utilities rate assistance program but have experienced financial hardship during this time. Those residents may apply for our “**High Bill Financial Assistance**” program. Information on all utilities financial assistance resources is available at cityofpaloalto.org/utilitiesassistance.

Coming Soon! New Outage Management System: Staff have begun outreach about the upcoming new Outage Management System (OMS), which is scheduled to launch in summer 2023. This will offer customers the ability to receive alerts and updates through text messages, phone calls and emails about power outages and other emergency notifications. We are encouraging people to ensure their contact information is up to date in MyCPAU and/or by contacting Customer Service to add email addresses and phone numbers. The new OMS will provide benefits such reduced outage durations, faster response time, web outage viewer, customer account log in for updates, hosted Integrated Voice Response (IVR), phone capacity rollover, no busy signals, streamlined field communications, and situational awareness for both employees and customers.

Advanced Metering Infrastructure (AMI) Project: CPAU began deploying Advanced Metering Infrastructure (AMI) meters in January 2023. This beta phase rollout includes approximately 1,800 electric, gas and water meters. This is a phased rollout to allow the City to test and validate the quality assurance of AMI meters and systems. Some of the AMI meters will be installed at all-electric homes with EV chargers and/or energy storage systems, allowing CPAU to gather data about EV customer charging patterns, all-electric home load shapes, and transformer loading which is essential for the grid

modernization project. CPAU has been communicating directly with customers who will receive the meters to share resources and offer assistance with any questions or concerns.

Home Water Reports Launch: Since the recent launch of the [WaterSmart program](#), staff have embarked on a robust outreach campaign to encourage customers to log into their account and take advantage of the features such as leak alerts and access to water efficiency programs. Starting in March, the City began sending out Home Water Reports to single-family residential customers. The Home Water Reports include information on a customer's water use and comparisons to similar-sized Palo Alto households. Water savings from these reports will be evaluated through an efficiency study.

Full-Service Heat Pump Water Heater Pilot Program: The Palo Alto community has been rallying support for the City's new heat pump water heater installation program. CPAU has been gathering contact information from residents expressing interest in participating or receiving more information on the program's full-service installation service once it fully launches. During the spring, staff called and/or emailed these residents with an update on scheduling site assessments for potential heat pump water heater installation. To drive further participation, the City will soon begin working with a marketing consultant to facilitate collaboration with staff, stakeholders, policymakers, and community partners on a broad electrification marketing plan for launch later this year.

Water Supply and Drought: Staff have been proactive about communicating the current situation of water supply conditions following heavy precipitation in early 2023, which effectively ended the State's historic drought. CPAU continues a robust outreach campaign about water supply conditions, water use restrictions, and resources for water use efficiency regardless of rain or drought. Staff are working with the Bay Area Water Supply and Conservation Agency (BAWSCA) and Valley Water to coordinate public education events throughout the spring, summer and fall. Updates on water supply conditions and efficiency are available at cityofpaloalto.org/water.

Program and Event Support: CPAU hosted many events and workshops in early 2023 to spread awareness about customer programs for energy and water efficiency, electric vehicles (EV), electric bikes (including special discount campaign for EVs and eBikes), and beneficial electrification. The communications team supported these efforts through comprehensive outreach via website, email newsletters, advertisements, and social media campaigns.



8 Legislative and Regulatory Activity

8.1 State legislation

Below are bills that were tracked as of February 2023:

- **AB 9 (Muratsuchi) and SB 12 (Stern)** | *California Global Warming Solutions Act of 2006: emissions limit*. Both bills, repeats of prior failed bills, set the state's 2030 GHG reduction goal from 40% below 1990 levels to at least 55% below 1990 levels. AB 9 is on the Assembly inactive file and SB 12 was held in the Senate Committee on Appropriations' suspense file.
- **AB 65 (Mathis)** | *Energy: nuclear generation facilities*. Allows for the development of new nuclear energy facilities in California by removing the current legal prohibition. AB 65 has failed to pass out of the first policy committee.
- **AB 66 (Mathis)** | *Natural Resources Agency: water storage projects: permit approval*. A spot bill creating a 'water project shot clock' by requiring timely *state* permitting decisions for water supply projects. AB 66 was held in the Assembly Committee on Appropriations.
- **AB 249 (Holden)** | *Water: school sites: lead testing: conservation*. Requires a water system serving a public or private school with a building constructed before January 1, 2010 to test for lead by January 1, 2027, and to prepare a sampling plan. AB 249 passed the Assembly and the bill is ordered to the Senate for Committee assignment.
- **SB 48 (Becker)** | *Building performance standards*. Spot bill to create building performance standards for improvements in energy efficiency and GHG reductions in large buildings. SB 48 passed the Senate and the bill is at the Assembly Desk.
- **SB 49 (Becker)** | *Tax incentives: solar canopies*. A spot bill to provide tax incentives for the construction of solar canopies over large parking lots to boost the local generation of clean electricity. SB 49 (Becker) The spot bill was amended to require the Department of Transportation to develop a strategic plan to lease its right-of-way for energy infrastructure. The bill is currently at the Assembly Desk.

Appendices

9 Appendix A: Energy Risk Management Program

This appendix provides a quarterly update on the City's Energy Risk Management Program.

9.1 Overview of Hedging Programs

The City's Utilities Department maintains a hedging program for its Electric and Gas Utilities. In the Gas Utility the program protects against short-term (intra-month) price spikes caused by weather or major incidents on the Western gas system. However, the City does not hedge its gas supply more than one month in advance, choosing instead to protect the Gas Utility's financial position by passing gas supply costs through to customers via a charge that varies monthly based on gas market prices. As a result, the Gas Utility's only market exposure is the amount by which gas demand deviates from forecasts within the month. This exposure is relatively small and can be managed using Gas Utility Operating Reserves. A risk assessment is performed each year as part of the Gas Utility financial planning process to ensure adequate reserves to cover all risks. The most recent Gas Utility Financial Plan was adopted June 21, 2021 ([Staff Report #12240](#)).

The City has entered into long-term contracts for its Electric Utility to ensure that the City has carbon free electricity supplies equal to 100% of Palo Alto's annual electric demand. However, the output from these generating sources does not match Palo Alto's electric load. In the summer, the City has a surplus of carbon free energy and it has a deficit in the winter. This exposes the City to market risk, and staff maintains a hedging program to protect against this risk. In addition, hydroelectric generators make up approximately half the City's energy supply. During dry years these resources do not generate as much energy, creating an additional market exposure that must be hedged. Unlike the gas hedging program, which is operated by City staff, the electric hedging program is operated by the Northern California Power Agency (NCPA), a joint powers agency the City formed in partnership with several other California publicly owned electric utilities, with oversight by City staff.

9.2 Overview of Energy Risk Management Program

The hedging programs described above are conducted in accordance with the City's Energy Risk Management Program, which includes a set of Program Policies adopted by the City Council, Guidelines adopted by the City's Utilities Risk Oversight Coordinating Committee (UROCC), and Procedures approved by the Utilities Director. In addition, for the electric hedging program, NCPA maintains its own Risk Management Program. The City is able to provide policy level oversight of this program through its seat on the NCPA Risk Oversight Committee, which is held by the City's Risk Manager.

Per the Energy Risk Management Policies, the City Council must receive quarterly reports on the City's forward contract purchases, market exposure, credit exposure, counterparty credit ratings, transaction compliance, and other relevant data.

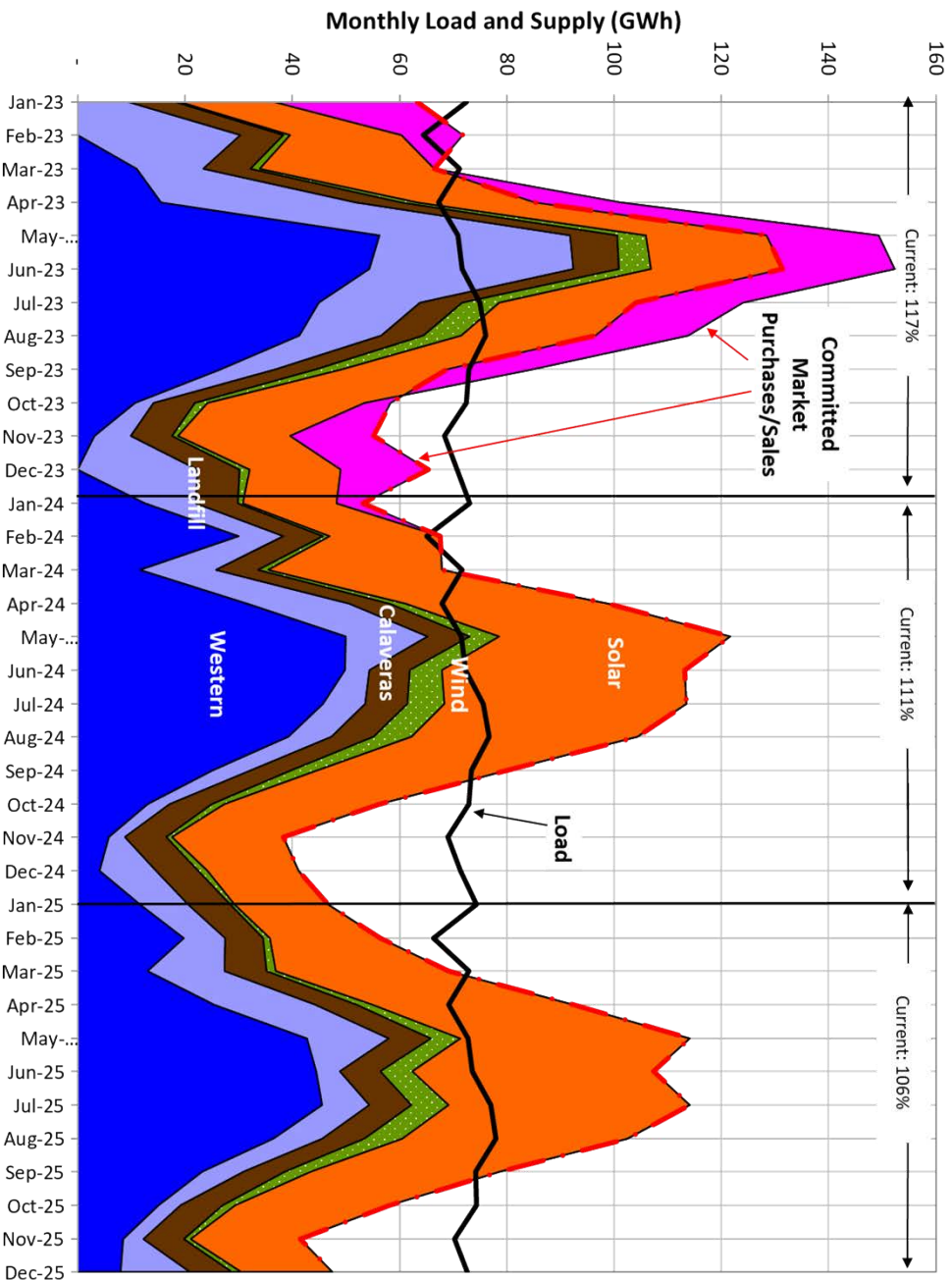
9.3 Forward Deals

Palo Alto did not execute any Electric or Gas transaction in Q3 of FY 2023.

9.4 Market Exposure

The chart below shows the City's market exposure and committed and planned purchases and sales to cover exposed positions.

Figure 30: Electric Load Resource Balance, 2023 - 2025



9.5 Transaction Compliance

There are no transaction exceptions or violations to report.

10 Appendix B: Staffing and Vacancies

As of Q3 FY 2023, the Utilities Department has 58 vacant positions out of 253 authorized positions or a 23% vacancy rate. Below is a breakdown of the vacancies by division. The Electric Engineering and Operations (E&O) division continues to have the highest number and hardest positions to fill. Electric Engineering and Operations has a total of 32 vacancies or 36% vacancy percentage). The City is actively recruiting for 42 vacant positions. Due to HR staffing constraints, Utilities has designated three HR liaisons from Utilities Administration to assist HR with some of the recruitments. With the three HR liaisons, CPAU will be able to post positions, schedule interviews, and make job offers at a faster pace after they are fully trained. CPAU have attended or will be attending engineering career fairs at Sacramento State University, Cal Poly San Luis Obispo, and San Jose State University.

Figure 31: Utilities Vacancies and Position Movements by Division, up to Q3 FY 2023

Division	Authorized FTEs	Vacant FTEs	Active Recruitments	Vacancy %
Administration	20.5	4	1	20%
Customer Service	23	3	1	13%
Resource Management	25.5	6	5	24%
Electric Operations	69	24	16	35%
Electric Engineering	21	8	6	38%
WGW Operations	70	10	10	14%
WGW Engineering	24	3	3	13%
Total	253	58	42	23%

11 Appendix C: Electric Utility Annual Infrastructure Maintenance and Replacement Report

In each Quarterly Update the Utilities Department will provide a detailed overview of a single utility's investment and maintenance activity. An update on the Electric Utility was scheduled for this report, but it will be rescheduled to next quarter's report.

APPROVED By:

Dean Batchelor, Director of Utilities

Staff: Eric Wong, Resource Planner