# 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 187 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 $24M 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.