



UTILITIES ADVISORY COMMISSION MEETING MINUTES OF FEBRUARY 7, 2024 REGULAR MEETING

CALL TO ORDER

Chair Segal called the meeting of the Utilities Advisory Commission (UAC) to order at 6:02 p.m.

Present: Chair Segal, Vice Chair Scharff, Commissioners Croft, Forssell, Mauter (attended remotely at 6:04 p.m.), Metz (attended remotely), and Phillips (arrived at 6:45 p.m.)

Absent:

AGENDA CHANGES, ADDITIONS AND DELETIONS

None

PUBLIC COMMENT

David Coale thanked Utilities for handling the outages very well during the last couple of storms. Barron Park was out twice for a short period and fixed sooner than the time predicted on the website. He appreciated the website containing a lot of information about the outages.

APPROVAL OF MINUTES

ITEM 1: ACTION: Approval of the Minutes of the Utilities Advisory Commission Meeting Held on January 3, 2024

Chair Segal invited comments on the January 3, 2024 UAC draft meeting minutes.

Packet Page 12, Page 7 of the document, Paragraph 1, Lines 5-6, Chair Segal requested to correct statement on water sales reductions as a “cost driver” to “reduction in revenue.”

On Packet Page 13, Paragraph 2, there was a discussion on wastewater rate increases and Mr. Batchelor stated that staff evaluated a 13% increase compared to the 9% proposal and staff could send it to the UAC after the meeting. Commissioner Forssell asked if staff sent the information. Utilities Director Dean Batchelor confirmed staff did not send it to the UAC but would do so. Commissioner Croft recalled a presentation to the Budget Subcommittee Meeting last week regarding the increase. Mr. Batchelor stated he presented a 15% increase.

ACTION: Commissioner Croft moved to approve the draft minutes of the January 3, 2024 meeting as amended.

Chair Segal seconded the motion.

The motion carried 4-0 with Chair Segal, Vice Chair Scharff, Commissioners Croft and Metz.

Commissioners Forssell and Mauter abstained.

Commissioner Phillips absent.

UTILITIES DIRECTOR REPORT

Utilities Director Dean Batchelor delivered the Director's Report

Recent Storm and Power Outage Update: Power outages occurred last weekend and today. The Bay Area experienced atmospheric river storm conditions last weekend. Approximately 161 customers in the Foothills lost power from Sunday evening until Monday at 2:50 p.m. caused by a large tree that came down over Page Mill where CPAU had a joint pole with PG&E. CPAU contacted PG&E but there was no response on Sunday evening. CPAU spoke with PG&E on Monday morning but PG&E could not provide an ETA. The City trimmed the tree and CPAU's lines were put back in place. On Sunday, all outages were tree related with no pole damage. The Outage Management System (OMS) sent 11,880 text messages notifying customers of an outage or providing updates. CPAU received 665 calls and 339 texts reporting an outage. Customers can update their contact information for power outage notifications in MyCPAU or call Utilities Customer Service at (650)-329-2161. Today's outage affected 4000 customers and two substations were offline. CPAU found large tree branches tangled within the 60 kV line (the backbone tying our substations together) and a line going into a substation. Tree trimmers cut and cleared the branches with no damage to the line. The OMS map falsely showed 13 or 14 customers out since Friday afternoon. CPAU was working on this issue with Milsoft, our OMS provider, because those 13 or 14 customers were tied to a transformer that was tied with one or two AMI meters that had bad sensors.

Water Supply Update: Recent storms had a positive impact on Regional Water System storage projections. While precipitation is less than long-term average, storage in the Hetch Hetchy system is above average due to last year's above-average precipitation. The City's water supplier, San Francisco Public Utilities Commission, will provide an update later this month on water supply conditions and rate projections and will release final numbers in April or May.

Hydroelectric Update: As of January 30, Northern California precipitation totals were about 23% below average for this time of year and about 49% below average in Central California. Reservoir levels were slightly higher than average due to last year's precipitation. The City's hydro resources were projected to produce around 108% of the long-term average level of output in FY 2024 and 100% in FY 2025.

Natural Gas Prices: Market prices for December 2023 and January 2024 were 64 cents and 43 cents per therm, respectively. Even with the cost of insurance at 5½ cent per therm, CPAU customers' natural gas costs have been very low this year. Prior to next winter, staff will present to Council a longer-term strategy for mitigating against potential gas price spikes. Staff will notify the UAC when they hear from the Feds or State about the outcome of the investigation into last year's high gas prices.

Upcoming Events: Go to cityofpaloalto.org/workshops for details and registration for upcoming events.

- Thursday, February 8 from 5 to 6 p.m.: Save Money on an EV Now
- Sunday, February 25 from 11 to noon: Lunar New Year Community Event
- Sunday, March 10 from 10 a.m. to 1 p.m.: Is an Electric Car Right for You?

The first item on the City Council's meeting agenda for Monday, February 12 is a study session about resiliency and the strategic plan presented to the UAC last month. Commissioners can attend in person or by Zoom and provide comments if desired.

Chair Segal queried if tree inspections were included in the pole inspections for fiber and grid modernization. Mr. Batchelor replied that that while trees were not inspected as part of those inspections, however, when they were inspected, trees were trimmed if they were too close to the lines. Public Works called Urban Forest if a tree needed to be removed or was starting to decay.

Strategic Business Manager Dave Yuan addressed Chair Segal's question regarding faulty sensors in AMI meters. Of the 13 customers showing a false outage, four customers had wiring on their side of the system causing errors. Of the 4500 installed electric meters, two were faulty.

NEW BUSINESS

ITEM 2: DISCUSSION: Discussion of the Supervisory Control and Data Acquisition Cyber Security Update

Director of Information Technology Darren Numoto stated their goal was to put systems in place to monitor, detect and react quickly to prevent major issues. Over the last couple years, they focused on shoring up internal infrastructures, processes and procedures. IT received information on common threats from CISA, a federally funded agency. Staff was in discussions with CISA to come on site to evaluate our cybersecurity posture for IT and Supervisory Control and Data Acquisition (SCADA) systems to identify gaps in our policies, procedures and technology.

About 60 percent of email worldwide was spam. Staff received data security awareness training annually. Senior IT staff with elevated privileges will receive specialized training. Many applications were in the cloud, which posed a security challenge because the City does not own or control the infrastructure. Business impact and vendor information security were assessed during the procurement process to ensure companies were prepared to prevent, react and notify us in a timely manner of any security issues. Last year, the City implemented an IT risk assessment program to evaluate solutions, applications and networks.

SCADA was behind the City's infrastructure, one layer removed from direct access to the internet. SCADA information was air-gapped from the network by protocols such as multifactor authentication, VPN services and DMZ infrastructure. Utilities did not have regular meetings with the Cybersecurity Red Team during the pandemic but meetings will resume this year on a quarterly basis. In the event of a SCADA system fault or cyberattack, the SCADA network would operate on manual mode with staff on site to control power. Planned perimeter security enhancements include surveillance outside substations and SCADA device upgrades.

Staff worked with vendors to ensure AMI met our standards of data center security. Security measures include DMZ, VPN, firewalls, OS hardening and patching, multifactor authentication for remote access and role-based access meaning only authorized staff has access to infrastructure.

Some Cities in the Bay Area had ransomware attacks with access gained to their system via a user with elevated access. Multifactor authentication and monitoring could prevent some attacks. We have controls and solutions to understand anomalies and we implement best practices. If an authentication request

comes from a different location than the user, the request is alerted and blocked. Technologies on City laptops and mobile devices provide protection even when not on the City's network or VPN.

The City's onsite servers are in an airgap network and do not have internet access. We cannot put some services in the cloud, such as legacy systems. Microsoft's cloud hosts our Microsoft infrastructure. AWS hosts our ERP system. There is a monthly service charge for cloud usage.

Mr. Numoto addressed Commissioner Metz's question regarding meters, sensors and controllers preloaded with software. Those fall under Critical Assets in the hierarchy structure. There is an inventory of assets and their versions. Staff receives alerts about firmware and software vulnerabilities and updates. Utility System Technician Raymond Chin, Sr. remarked that vendors send emails when there are firmware updates. SCADA devices in the field do not connect to the internet and are air-gapped, which makes it difficult to compromise.

Commissioner Forssell queried if the City hired an outside firm for penetration testing. Mr. Numoto replied yes, we contracted with CISA to come onsite for four days of investigation in our network and provided a lot of great information. There were no major findings. We needed to patch some systems or plug some holes. It was an external and internal penetration scan but CISA did not scan our SCADA networks because they were air-gapped. CISA will perform a more in-depth overview of our SCADA networks toward the end of the year. City staff was tested biannually with phishing emails and provided more training if they clicked on them.

Chair Segal opined that training was too infrequent. She recommended informing the entire staff if an employee failed a phishing test as a training mechanism to increase awareness, although not identifying the employee. Mr. Numoto stated the City on-boarded a new platform for security training and phishing and there were plans to increase the frequency of tests, possibly on an ongoing basis throughout the year. Microsoft blocks malicious sites and links by default. IT receives immediate notifications if a user clicks on something malicious. All outbound connections are monitored. CISA and other vendors detect traffic destined to known threat actors.

Backups occur multiple times a day. This year, IT will shore up our Disaster Recovery (DR) plans. Recovery time for critical systems is within 48-72 hours, SCADA within 48 hours.

In response to Chair Segal's query regarding physical security and the planned perimeter security enhancements, Mr. Chin replied they are in the beginning of construction. Some substations are installing lights and security cameras. Mr. Numoto remarked there would be a fence around the Colorado Substation. Mr. Batchelor added that Colorado would have 15-foot blast-proof, bulletproof walls but there was no time estimate for construction.

ACTION: None

ITEM 3: DISCUSSION: Discussion of the Residential Electric and Water Utility Customer Satisfaction Survey Results

Utilities Communications Manager Catherine Elvert delivered a slide presentation. The California Municipal Utilities Association (CMUA) contracts with GreatBlue Research, Inc. (GreatBlue) to conduct surveys of municipal and investor-owned utility customers. GreatBlue conducted a statewide survey of residential electric and water utility customers in fall 2023. CPAU opted to also have GreatBlue conduct

an “oversample” survey of Palo Alto residents to gain greater insight into issues important to Palo Alto residents and also compare results to statewide and national survey responses. The random sample groups were different for the electric and water surveys. Statewide, approximately 1,200 customers were surveyed for each electric and water utility. For the oversample, 400 CPAU customers were surveyed in September and October 2023. Surveys were digital and had a 95% confidence level with a 4.8% +/- margin of error. There were 57 questions for water, 64 questions for electric.

Commissioner Phillips wanted to see historical data for comparison. Ms. Elvert replied that CPAU has conducted customer surveys for decades, so there is historical data to compare results to. CMUA recently contracted with a new vendor in the past two years to perform customer surveys. The new vendor attempted but was unable to gain all historical data from the previous survey vendor, but we have some questions and answers to compare, and will be able to close these gaps moving forward.

For the electric customer satisfaction surveys, CPAU received very high marks with ratings significantly higher than Northern California and statewide for average positive organizational characteristic rating, trust, meeting customer expectations and customer service ratings. CPAU’s Net Positive Score of 82.1% was higher than the national average of customers who considered themselves loyal and satisfied. Nearly 80% reported CPAU met their expectations all or most of the time. About 25% believe CPAU was prepared to handle an emergency, which was less than Northern California and statewide.

Channels of communication in order of preference were automated text messages, emails and automated phone calls. Customers prefer to communicate with CPAU via phone call, in-person visit and email. Customers prefer to receive information from CPAU through text, email and website. Respondents in the older age demographic preferred communication through traditional paper methods, such as bill inserts. Younger demographics preferred digital communication. Chair Segal pointed out that surveys were done digitally, which could bias the responses.

At least 25% of customers in each age group reported they own an electric vehicle (EV), about 22 percentage points higher than the statewide average response. Customers aged 55-64 had the highest rate of EV ownership. At least 40% of customers in each age group were likely to purchase an EV. Respondents not interested in purchasing an EV listed barriers of long charge time, limited distance range per charge, higher initial cost to purchase, low availability of charging stations and low availability of EV options. Chair Segal wondered if those concerns differed by age group. Ms. Elvert will review the data and follow up with a response to Chair Segal.

About two-thirds of customers indicated they strongly or somewhat support CPAU investing in electrification with over one-third in all age groups strongly in support of these investments. Nearly one-half reported they were aware of CPAU’s program for residents to switch from gas water heaters to electric heat pump water heaters. Age had a positive correlation with awareness with customers significantly more aware as age increased. Over one-half were considering the purchase of an electrification product, more considering a heat pump water heater, followed by heat pump HVAC system, followed by induction stoves.

A chart was shown comparing organizational characteristic ratings for CPAU, Northern California, statewide and nationwide. CPAU’s ratings were higher than Northern California, statewide and nationwide for 10 out of 11 characteristics.

Vice Chair Scharff noted the intriguing difference between CPAU receiving a high rating for providing reliable electric service, but a low rating for maintaining modern and reliable infrastructure. Ms. Elvert said the consultant's interpretation is that perhaps CPAU needs to communicate more about what we are doing to keep our infrastructure up to date. Mr. Batchelor believed the low rating was due to recent power outages.

Vice Chair Scharff asked if Alameda, Santa Clara and Roseville's surveys were available to compare with CPAU. Ms. Elvert replied that not all NCPA members participated in the survey. We can compare CPAU's results to the NCPA member average but we might be able to obtain data by a specific member utility.

Commissioner Phillips pointed out that if respondents were rating CPAU low because of outages, the rating would be low for "providing consistent and reliable electric service to customers" but it was rated the highest. Mr. Batchelor said that CPAU frequently restores power much more quickly compared to other utilities like PG&E, citing the recent storm and power outages throughout the Bay Area as a perfect example. Some PG&E customers are still without power following the storm on Sunday, yet all customers in Palo Alto had power restored within a couple hours. Commissioner Phillips suggested adding a question at the end of the survey asking if respondents had experienced an outage in the last two months and if so, were they satisfied with CPAU's response.

Chair Segal opined the low rating on maintaining modern and reliable infrastructure might be due to Palo Alto's high Tesla penetration, high interest in electrification and many remodels causing customers to pay to upgrade their panel to have enough power in their home.

Commissioner Croft thought people might envision a modern system as underground instead of seeing wires above ground. Many customers have a big line going through their backyard, which does not look modern. Commissioner Forssell noted the local press recently ran stories about grid modernization and people thought CPAU was on an undergrounding schedule but we are not.

Ms. Elvert continued her electric survey presentation. Two-thirds of CPAU's respondents (slightly higher than the statewide average) indicated their electric rates were very reasonable or somewhat reasonable. Respondents who had a recent customer service interaction provided higher ratings for three out of four characteristics regarding the CPAU representative they spoke with compared to customers in Northern California and statewide. CPAU respondents reported a significantly higher average positive rating for the customer service representative they spoke with being polite and courteous, higher than Northern California and statewide. An average of 71% of CPAU's respondents provided positive ratings. The top reasons customers contacted CPAU were to report an outage, discuss a high bill or ask a question on a bill.

The consultant recommended tailoring our messaging to different age demographics. Younger customers believe electrification saves them money on their electric bills and has an environmental benefit. An electrification program might get better uptake if promoted during times of higher average energy consumption and we demonstrate a correlation between energy and cost savings. The consultant also recommended that CPAU consider implementing an off-peak EV charging rate in conjunction with

Customers were more interested in installing a Level 2 charger if it resulted in less electrical infrastructure upgrades at their home, thus being less costly. Over four-fifths were likely to charge their EV during off-peak hours. The consultant recommended that CPAU consider implementing an off-peak EV charging rate in conjunction with Level 2 home charger installation. Commissioner Forssell asked how off-peak hours

were defined in this survey. Ms. Elvert stated she would get back to Commissioner Forssell with the specific time period included with the question. There was discussion about peak versus off-peak hours and what CPAU might include in a potential time-of-use (TOU) rate. Strategic Business Manager Dave Yuan clarified that CPAU's peak hours are between 4pm to 9pm, and that CPAU is exploring offering TOU rates for residential and commercial customers as part of the Advanced Metering Infrastructure (AMI) project.

Ms. Elvert presented the results from the water customer survey. CPAU ratings from water utility customers were higher than electric survey results. The Net Positive Score for water was 87.4%. Over one-quarter of customers reported being an advocate or loyal customer of CPAU. The highest ratings were for maintaining an adequate supply of water, which was higher than Northern California and statewide. About 81% reported satisfaction with their most recent customer service experience. 85% indicated CPAU met their expectations all or most of the time. Nearly one-half of customers indicated they try hard to use less water but could probably do a little more. Nearly two-fifths indicated they were doing everything they possibly can to use less water. Renters more often than homeowners indicated they try not to waste water but often do not focus too much on the amount of water they use. The top reasons for customers contacting CPAU were for a billing question, high bill or consumption, general maintenance, water leak or broken pipe. Customers preferred contacting CPAU via traditional methods but preferred to receive information from CPAU digitally.

CPAU's average positive organizational characteristic rating was about 79%, significantly higher than Northern California and statewide. The top three characteristics included monitoring water quality, maintaining an adequate supply of water, and providing good service and value for the cost of water. Over four-fifths reported the Utility met their expectations all or most of the time. Customers who had a recent customer service interaction indicated the representative was courteous and treated them with respect. Over one-half of customers indicated CPAU's customer service was among the best or above average compared to other service providers such as banks, telephone, cable company or other utilities.

Over two-fifths were familiar with the WaterSmart home report, landscape rebate program and landscape workshops but fewer customers were familiar with the Project PLEDGE utility bill assistance program. More homeowners than renters were familiar with the Home Efficiency Genie. About 89% of customers acknowledged that CPAU provided them with data or a report on how much water their household used in the prior bill period. Over two-thirds indicated they would find "materials on specific ways to reduce their household's water use at no cost to you" useful.

Recommendations based on survey results included elevating and optimizing our online presence as well as ensuring our website is user friendly, mobile responsive, and provides seamless access to critical information, important updates, educational content and avenues for customer feedback and inquiries. It is important to target our outreach to all customer groups including renters who expressed desire to participate in a program or use water more efficiently but may not know how to do so.

Chair Segal pointed out that about 20% of Palo Alto residents were over 65 years old and was worried those customers were not reflected in this survey because it was digital.

Commissioner Croft noted on both surveys that two-thirds thought the Utility was open and honest. She wondered what the other one-third of respondents thought and what they didn't believe they were getting enough information on, such as utility rates or infrastructure. Ms. Elvert stated that CPAU works hard to provide as much information as possible on these important subjects to customers across a variety of communication channels and is always looking for ways to improve upon our outreach. Ms. Elvert

speculated that CPAU can do more to talk about our utility rates, operations, and maintaining and upgrading our infrastructure. Commissioner Croft suggested having FAQs on our website.

Regarding Slide 7, Vice Mayor Lauing wondered how many first-time buyers were in the 47% planning to purchase an EV. Ms. Elvert replied she would get back to Vice Mayor Lauing with the answer but recalled the consultant stated that people who own an EV might not be as inclined to purchase another EV in the near future.

Vice Mayor Lauing said Council should see these survey results and asked if staff could attach an information packet to a Council report or present a more condensed version in a short study session.

ACTION: None

The UAC took a break at 7:50 p.m. and returned at 8:01 p.m.

ITEM 4: DISCUSSION: Discussion of Electric Grid Modernization Plan

Utilities Director Dean Batchelor explained why our outages were typically large. The system configuration did not have many switches. When a fault occurs, it shuts down the substation. There are usually 4000-5000 customers on a substation. Depending on the time of day, CPAU patrols the fault location, turns on some switches and usually turns the substation back up quickly. We need to upgrade the system so outages only affect customers located at the fault instead of the entire substation. As we rebuild this portion of the system, capacity will increase for electrification loads. Now, the system can only handle adding small loads such as heat pump water heaters. As we develop fiber and put in the fiber backbone, we can buy new transformers and switches where you can run a piece fiber to control that equipment to clear faults more quickly.

Chair Segal asked if customers in underground areas were responsible from the street to their box. Mr. Batchelor explained that if the transformer was not loaded and you wanted to add an EV charger or heat pump water heater, CPAU was responsible for the wires from the transformer into the secondary box. Customers were responsible for conduit for wires from the secondary box to the side of their home.

Mr. Batchelor addressed Vice Chair Scharff's question about the difference in service fees for 200 and 400 amps. When you put in 400-amp service, the wire size changes and you may overload the transformer size. An estimator provides an evaluation and you need engineering drawings to determine what is needed to feed the 400-amp service. For 200-amp service, you can use a smaller wire in the conduit or to the transformer. From June/July to the end of the year, 66 customers wanted 400-amp service, usually because they wanted to electrify and the 200-amp panel in their home was unable to handle it. CPAU charged on average \$3200-\$3700 for the estimate, drawings and wire increase. The estimate does not include the cost to install the panel because CPAU does not have on-site electricians. In addition, the customer has to pay tens of thousands of dollars if a transformer upgrade is necessary.

CPAU's strategic projects: Upgrade infrastructure to larger transformers and larger cable in the secondary side where the customer is connected. Integrate new technology. Complete residential AMI installation by the end of this year. Have better fault indicators in underground areas to identify direction of a fault. Have remote switching and fuse savers. Customer technologies such as solar battery backup and heat pump water heaters.

The fiber to the premise (FTTP) goal is to upgrade and expand the existing fiber backbone. Depending on pilot results, staff will request authorization from Council to offer fiber to all homes and businesses.

System upgrades: We are upgrading the 4 kV lines installed in 1967 to 12 kV. Upgrade 4 of 30 substation transformers. Upgrade 1741 of 3000 distribution system transformers from a minimum of 25 kV to 50 kV. Upgrade 56 miles of secondary and 17 miles of primary distribution lines. Phase 1 system upgrades affects about 6800 customers. Pilot area for fiber and electric grid modernization includes 1224 customers. Of 409 poles, 87 need replacement because they cannot take the weight of 50 kV transformers. There will be eight customers on each 50 kV transformer. Approximately 1400 single-phase pole-top transformers need to be replaced with a 50 kV or larger transformer.

For the underground secondary system, staff could not find any companies building submergible transformers. We need to remove all underground transformers and make them pad-mounted 75 kV or larger transformers. There will be 12 customers per pad-mounted transformer. Bases for pad-mounted transformer were too big to fit in the median strips or in between the curb and gutter. The City had easements rights in customers' front yards. Strategic Business Manager Dave Yuan remarked there were 261 pad-mount transformers and 231 underground. We will move all 231 underground transformers above ground. In addition, we have to add 83 transformers above ground to meet capacity loads.

Commissioner Croft asked if the curb could be extended into the street because she thought residents would rather have a reduction in parking than have a transformer on their yard. Mr. Batchelor replied that staff could evaluate that option as well as putting it on a side yard, put something over the top to camouflage it or bushes around it.

ENTRUST is an electrical contractor helping CPAU with design. Magellan is the fiber contractor. Soudi performed the initial study to determine what we needed. MP Nexlevel, Hot Line and VIP are contractors working on the lines and fiber. The City retained MP Next Level and VIP for electric work to put in substructure on the secondary side. VIP does underground and overhead work.

Staff had to determine the funding source for an estimated \$200-\$300 million. In addition to bond issuance, CIP funds will offset costs.

Proposed timeline: Fall 2024, pilot area complete for fiber and grid modernization. Summer 2025, Phase 1 complete. Depending on the uptick and take rates for fiber in the pilot area, staff will obtain approval from Council if there is enough interest before moving forward with fiber, although poles would be made ready for fiber in Phase 1. All phases will be complete by winter of 2030, although we may need the help of additional contractors.

Mr. Yuan addressed Chair Segal's question regarding bonds. Revenue bonds do not require a vote but do need Council approval. Staff will ask Council for \$50 million increments for each phase. Bond funding has to be spent within three years. The plan is to issue bonds over the next seven years.

Public Comment: Hamilton Hitchings asked how much of the \$220-\$306 million was for fiber and if there would be separate bonds for electrical and fiber. Utility has a monopoly on electricity and a guaranteed revenue stream, so you can calculate the payback based on the number of electric customers whereas for fiber it depends on take rate because customers can choose CPAU, AT&T or Comcast. Mr. Hitchings suggested continuing overhead but undergrounding the main trunk to improve system reliability. Undergrounding along and across major arteries (El Camino, University, San Antonio, Embarcadero, Page

Mill and Middlefield) was important to avoid blocking traffic if there was a major earthquake or big storm. Mr. Hitchings is in the process of electrifying his home and thought about a 400 kV panel but he used the City-provided calculator and decided on 200 kV. He recently saved about \$6000 with the Heat Pump Water Heater Program and highly recommended the program to other customers.

Regarding Packet Page 69, Slide 13, Commissioner Metz asked about the plan to integrate AMI and other customer technology such as EVs and storage as well as how those technologies affect the distribution grid design for residential and commercial. Mr. Batchelor replied that AMI allows customers to look at their usage in 15-minute intervals and Utilities can ping AMI meters to pinpoint the location of an outage, thereby reducing the time of restoration and patrolling. A couple of substations are not fully loaded. Mr. Batchelor spoke to Engineering and Operations to see if it was possible to change the feeder configurations. We have eight substations but we can go down to six. To allow us better reliability, the remaining two substations can be filled with batteries for storage and tied into the grid. Depending on the amount of battery storage in a substation footprint, it can be used for outages or other times as needed. New technologies for heat pump water heaters, furnaces, induction stoves and one charger will be close to a 6 kV load.

Mr. Batchelor responded to Mr. Hitchings' question. The \$200-\$300 million estimate did not include dollars allocated for the fiber fund. Staff had authorization to use the fiber reserve. The pilot area does not spend all the reserve monies. Staff did not want to spend 100% of the fiber reserve. If costs exceed reserves, we need to issue a bond. Mr. Yuan remarked that the total cost for the backbone and the FTTP network is \$140 million. Commissioner Phillips commented there was approximately \$35 million in the fund. Mr. Batchelor stated we needed to bond approximately \$100 million.

In reply to Commissioner Phillips inquiring if staff expected to learn anything from the fiber pilot that may affect the cost or if the pilot was primarily focused on the fiber take rate, Mr. Batchelor stated they were also looking at grid modernization and what could be done with fiber in the pilot area.

Mr. Batchelor addressed Commissioner Forssell's request for more information on V2X listed among the technologies on Packet Page 62. Our system is a one-way feed. Our capabilities do not allow vehicle to grid. Rebuilding the system will allow vehicle to home but there needs to be a switch to stop you from feeding back into the grid because it is a safety issue if you are in an outage when you put power into the grid when everybody thinks it is in the off position. Similarly, off switches for solar were needed so it does not feed back into the system.

Commissioner Forssell asked if the grid modernization project could support thousands of new housing units expected in Palo Alto over the next several years, assuming they are all-electric and net-zero energy. Mr. Batchelor replied that they would consider the transformer size needed in areas of future development during the design phase and use bigger wire for the secondary side, the feed line. There is plenty of power in the main line and we can buy more power if needed.

Chair Segal inquired if the City should change its approach of waiting to order equipment to avoid supply chain delays. Mr. Batchelor explained that in the past it was City rules to buy through a third party. Not buying direct pushed us further back in line to buy equipment. Staff proved we could get better pricing by buying directly. Our timeframe has shortened because we will buy bulk from the manufacturer directly as Tesla did with their transformers. We will buy bulk wire. We are trying to standardize the size of transformers by putting 50s in the substations, 50s in the overhead sections and 75s in the underground

sections; currently, a couple of substations have 15s and another has 25. Standardizing transformer size and connectors helps with reordering, tools, splicing and making connections.

Commissioner Forssell noted the map on Packet Page 64 differed from the map in the presentation. Mr. Yuan responded that the map in the packet was correct and the most up-to-date version whereas the map in the presentation was an older version. The design work was completed for the pilot, so the red section was not moving but the blue sections could move. Underground work was not included in the first phase because construction would slow down the project.

ACTION: None

COMMISSIONER COMMENTS and REPORTS from MEETINGS/EVENTS

Commissioner Croft reported the Budget Subcommittee met to review the fiber business plan and wastewater rates. Commissioner Croft thought there was support for higher wastewater rates and rebuilding the reserve.

On January 25, Commissioner Metz participated in the Heat Pump Water Heater Program status update. There were over 160 installs with about 270 pending, which is about 12% to 20% of all water heaters per year. Program challenges included lead generation and getting customers to advance. There was a strong multimedia promotional effort. Outreach to participants revealed very positive feedback with the majority of customers happy with their installation. Cost and urgency were two reasons people cited for not going forward. Staff is developing an emergency replacement program that will launch by June.

FUTURE TOPICS FOR UPCOMING MEETINGS

Commissioner Forssell noted the CLEAN program was of interest to the UAC but it was going to Council before the UAC had an opportunity to talk about it. Mr. Yuan explained it was a one-year process from the time you apply for the CLEAN program until you complete your solar panels but for the Housing Authority it took a lot longer. Staff was adding a rule for future housing that met minimum housing rules could have up to three years to join the CLEAN program. CPAU hoped the new rule would encourage new housing development to join the CLEAN program because some capacity remained in the first tier, although there will be lower capacity after the first tier. Commissioner Forssell asked how much capacity was left at the attractive rate. Mr. Yuan did not know. He stated it was a question for Jonathan and staff would get back to Commissioner Forssell with the response.

Commissioner Metz saw in the Commission packet a resident comment regarding lead in water piping, indicating CPAU was required to have an inventory of water piping materials by October. Commissioner Metz queried if the UAC needed a meeting to discuss this topic. Mr. Batchelor confirmed we do have an October mandate. In the August/September timeframe, staff planned to present a status update to the UAC and the plan to replace lead services if any lead was found.

NEXT SCHEDULED MEETING: March 6, 2024

ADJOURNMENT

Commissioner Forssell moved to adjourn.

Commissioner Scharff seconded the motion.

The motion carried 7-0 with Chair Segal, Vice Chair Scharff, Commissioners Croft, Forssell, Mauter, Metz, and Phillips.

Meeting adjourned at 9:15 p.m.

Respectfully Submitted
Jenelle Kamian
City of Palo Alto Utilities