



DRAFT

UTILITIES ADVISORY COMMISSION SPECIAL MEETING MINUTES OF JANUARY 13, 2016

CALL TO ORDER

Chair Foster called to order at 7:03 p.m. the meeting of the Utilities Advisory Commission (UAC).

Present: Chair Foster, Vice Chair Cook, and Commissioners Ballantine, Danaher (arrived at 7:06 pm), Eglash, Hall, and Schwartz
Absent: Council Liaison Scharff

Chair Foster also welcomed Council Member Filseth, the Alternate Council Liaison to the UAC, who was also present in the audience at the meeting.

ORAL COMMUNICATIONS

None.

APPROVAL OF THE MINUTES

Chair Foster proposed to amend the draft minutes for the December 2, 2015 UAC meeting under the New Business Item 3 as follows:

Change:

“Herb Borock noted that there was a Council item on fiber on Monday this week (November 30). He summarized the Council discussion on Fiber-to-the Premises (FTTP). He noted that the citizens committee has lost some of its members and that Chair Foster is now on the committee. He said he was skeptical that the Google deal was beneficial to the city.”

To:

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Vice Chair Cook moved to approve the minutes from the December 2, 2015 UAC meeting with the proposed amendment and Chair Foster seconded the motion. The motion carried unanimously (6-0) with Chair Foster, Vice Chair Cook, and Commissioners Ballantine, Eglash, Hall, Schwartz voting yes and Commissioner Danaher absent.

Commissioner Danaher arrived at 7:06 pm.

AGENDA REVIEW AND REVISIONS

To allow Commissioner Hall to participate, Commissioner Eglash suggested that “Commissioner Comments” be moved up to just after “Director of Utilities Report”. Chair Foster agreed with the suggestion.

Staff noted that the legislative guidelines will be split up into all the non-water guidelines, then the water-related guidelines to accommodate Commissioner Hall.

REPORTS FROM COMMISSION MEETING/EVENTS

Commissioner Schwartz reported that she was invited to speak at conference in Columbia to talk about utility trends and customer engagement. She reported that the large utility there “runs the town” and has been active pushing out the drug cartels.

UTILITIES DIRECTOR REPORT

Assistant City Manager and Interim Director of Utilities Ed Shikada introduced himself to the commission.

1. Hayworth Solar Project

On December 22nd, the Hayworth Solar project officially achieved commercial operations, becoming the second of the City’s large-scale solar PV projects to do so. The 27 megawatt (MW) project, located just east of Bakersfield, is expected to generate almost 64,000 megawatt hours (MWh) per year, or about 6.6% of the City’s total electric load. With the addition of this project, the City’s renewable portfolio standard (RPS) level is now projected to be 36.5%—which exceeds the 33% target in the City’s Long-term Electric Acquisition Plan (LEAP). The three remaining large-scale solar PV projects that are under contract with the City are all expected to come online by the end of 2016.

2. Palo Alto CLEAN Program

On January 8, the City received its first application for the Palo Alto Clean Local Energy Accessible Now (CLEAN) Program, a program to purchase locally generated renewable electricity within City boundaries. Through CLEAN, the City will purchase all energy and output from eligible solar photovoltaic (PV) generating systems for 16.5 ¢ per kilowatt hour (kWh) for either a 20- or 25-year contract term, up to a maximum program capacity of 3 MW. This first application is for a 113 kW solar carport installation at the Unitarian Universalist Church of Palo Alto for a 25-year contract term.

3. Georgetown University Energy Prize Competition

Georgetown University released the latest rankings of top performing cities and counties participating in the Energy Prize Competition. After the first quarter of the energy-saving challenge - 6 months of the total competition timeframe of 24 months - Palo Alto ranked in the top third! The City is stepping up its efforts to increase energy savings through programs like the new Home Efficiency Genie audit, while encouraging customers to help with renewables

generation and climate protection goals through participating in local solar and PaloAlto**Green Gas** programs.

4. City to Pilot Heat Pump Water Heater Program as Part of Electrification Initiative

In early 2016, CPAU is launching a pilot program to encourage residential customers to replace gas water heaters with electric Heat Pump Water Heaters. These appliances are more efficient and help reduce greenhouse gas emissions since the City's electric supplies are carbon neutral. The program is being developed as part of the City's evaluation of electrification opportunities and is a task in the Council-approved electrification work plan. The initial pilot will target 20 homes. The program hopes to address the barriers to adoption that may surround the technology and gather customer feedback on the retrofit process and appliance performance.

5. Drought Continues

Palo Alto is well on the way to meeting its 24% water use reduction target, but staff continues to communicate that drought regulations are in effect through at least the end of February and water conservation must continue. State regulators will likely extend water use restrictions past February if drought conditions persist and are also discussing adopting permanent water conservation regulations.

Interim Director Shikada also mentioned that there has been heavy activity by the Utilities operations crews in the field recently and through the holiday season fixing and maintaining various parts of the distribution systems.

With respect to the report on the heat pump water heater pilot, Chair Foster asked how participants will be selected. Assistant Director Jane Ratchye said that the design of the pilot is at the beginning stages so the details have not yet been worked out.

COMMISSIONER COMMENTS

Commissioner Eglash discussed the issue of dewatering requirements when a basement is constructed. He noted that the Council will discuss the topic at its January 25 meeting and is already very engaged in the issue. Commissioner Eglash said that he plans to attend the meeting. He advised that one of the outcomes from the meeting could potentially be Council direction that the UAC get involved in the issue.

Commissioner Schwartz would like to understand how to share information with the rest of the commission and the public, noting that since she's been on the commission, she has experienced several ways including her reading a draft colleagues memo into the record at one meeting and another commissioner made a technical presentation at a meeting. She indicated that she would like to share some information such as an article, potentially with commentary, with the rest of the commission.

Interim Director Shikada said that information typically comes through the Director. Regarding providing things to the Council, any citizen can forward anything to the Council and it becomes part of their meeting packets. He suggested that staff and the UAC engage in some

experimentation to determine what works and the role of staff. He noted that there is the route of using a Colleagues memo to the Council.

Chair Foster said that sending articles to the Director and requesting the Director send them to the rest of the commission as has been past practice works and can continue.

Commissioner Schwartz noted that Commissioner Ballantine made a presentation to answer a question that arose at a meeting about the function of solar PV inverters.

Senior Deputy Assistant City Attorney Jessica Mullin said that it may a good idea to agendize the topic about commission communication for a future meeting.

Chair Foster said that one of the problems with commissioner requests to agendize is that the agenda is set by the Director based on staff resources and priorities and this has led to irritation on the part of the commission.

Interim Director Shikada noted that under New Business agenda Item 5 (Selection of Potential Topics for Discussion at Future UAC meeting), the commission could come back to this topic and confirm that it will be agendized for the next Commission meeting.

UNFINISHED BUSINESS

None.

NEW BUSINESS

ITEM 1: DISCUSSION: Update Regarding Staff Work Plan for Fiber-to-the-Premises and Wireless Network and Ongoing Discussion with Google & AT&T

Senior Management Analyst Jim Fleming provided an update about staff's Council-approved work plan for fiber-to-the-premises and wireless, in addition to the status of discussions with Google Fiber and AT&T. His statement is as follows:

“At the September 28, 2015 Council meeting, Council approved a Motion directing staff to pursue several tasks simultaneously related to fiber and wireless initiatives. These tasks include:

- Establishing a Work Plan related to the Fiber-to-the-Premises Master Plan and Wireless Network Plan prepared by the City's consultant, CTC Technology & Energy. This additional work required amending the contracts with CTC to provide additional consulting services to complete the various fiber and wireless tasks included in the Council's Motion;
- In addition to the City's current fiber and wireless evaluations related to the FTTP Master Plan and Wireless Network Plan, Council also directed staff to initiate discussions with third-party broadband service providers, which involves pursuing discussions with Google Fiber and AT&T to explore so-called 'co-build' opportunities for fiber-to-the-premises.

Also, in anticipation of the large volume of work related to these various fiber and wireless initiatives, at the November 30, 2015 Council meeting, the Council approved a staff recommendation to hire a temporary Fiber and Wireless Program Manager.”

“The tasks in the fiber-to-the-premises Work Plan and target completion dates are as follows:

- First, with the assistance of CTC, staff is reviewing outside plant cost estimates in the FTTP Master Plan with the Citizen Advisory Committee and will document any disagreements between the committee’s estimates and CTC’s estimates. The target date for completion of this task is mid-February and the specific disagreements will be reported to the Council as directed in their September 28, 2015 Motion.
- Second, as previously mentioned, staff was directed to initiate co-build discussions with Google Fiber and AT&T. These discussions are proceeding with Google; staff contact with AT&T has been initiated, but discussions with AT&T have not yet occurred.
- The third task is to develop a “Dig Once” Ordinance to advance the expansion of broadband in Palo Alto. The City Attorney’s office is responsible for this task. Many Cities have adopted some form of “dig-once” policy that opens streets and rights-of-way to utility construction when related projects are underway. Such policies protect roads and sidewalks and minimize traffic and other disruptions related to utility construction — but also create a more uniform and efficient means of constructing network infrastructure by giving multiple entities, including the City itself, the opportunity to place fiber or conduit inexpensively. The target completion date for the ordinance is the end of March.
- Fourth, with the assistance of CTC, develop and issue a request for information (RFI) to explore municipally-owned and public-private partnership models for fiber-to-the-premises. Work on the RFI is underway and once a draft is ready, staff will review it with the Citizen Advisory Committee and request their feedback. The target date to issue the RFI is the end of March. Evaluation of the RFI responses will occur between June and September 2016.

“The Council directed tasks for the Wireless Network Plan and the completion dates are as follows:

- The first task is to update the citywide wireless network scenarios in the plan with 20-year forecasts. Task completed and provided to the Council on November 30, 2015 (Reference CMR ID #6301).
- With the assistance of CTC, the second task is to develop fiber backhaul information and cost estimates to expand Wi-Fi access in unserved City facilities and high-traffic retail areas such as California Avenue and University Avenue. The target completion date to complete the development of this information is mid-February. Once this task is completed, CTC will work with staff to develop an RFP with a plan to issue the RFP by the end of March.
- Third, with the assistance of CTC, issue a separate RFP for dedicated wireless communications for Public Safety and Utilities, also by the end of March.

- Evaluation of the RFP responses will occur between June and September of this year. CTC will assist staff in this effort. Public Safety staff is working with IT and Utilities staff in developing the RFP and will be involved in the evaluation of the responses.”

“Separate from the current co-build discussions with Google, there is ongoing work to develop various agreements for a citywide fiber-to-the-premises network build-out by Google Fiber. This work and agreements include:

- Evaluating Google’s draft Project Description, including construction methods, related to required environmental review of the project under the California Environmental Quality Act. At a very high-level, Google’s proposed network deployment would be largely limited to the public rights-of-way, both underground and on utility poles. Google is proposing to construct an FTTP infrastructure that would facilitate offering gigabit Internet and video service throughout the City.
- This review of the project description also includes developing a Master Encroachment Agreement for the proposed project, in addition to a Master License Agreement for the attachment of fiber network facilities on utility poles jointly-owned by the City and AT&T.
 - Due to the significant amount of City resources required for the Google Fiber project, staff is also working with the City Attorney’s office to develop a Cost Recovery Agreement so Google can reimburse the City for the cost of using these resources. This anticipated large volume of work for City staff includes the processing of applications required to attach fiber-optic infrastructure to approximately 6,000 utility poles, which will require coordinating with Google, AT&T and Comcast to perform: field investigations, utility pole load calculations, utility pole make-ready work, pole replacements, mapping, inspections, traffic control plans and tree trimming coordination.”

“In addition to Public Works processing various permits to do aerial and underground construction work in the public rights-of-way, temporary staff will need to be added for this work. Staff anticipates bringing these agreements to Council in the next 30-45 days.”

“Timeline: from the point Google begins its construction, completion of the network would take 24-36 months. Regarding potential co-build opportunities, City Manager Keene and CIO Reichental have met with Google Fiber officials to explore what a ‘co-build model’ for fiber-to-the-premises would look like at a conceptual level. The key objective of these discussions is to explore the possibility of the City collaborating with Google as they build-out their network to install a parallel City dark fiber network in areas currently not passed by the existing backbone, particularly in residential neighborhoods. The intent of the discussions at this time is to form the basis for a set of principles to pursue a model that would need to obtain an initial vetting by the legal counsel of both organizations. The City and Google will meet again during the week of January 18 to continue these discussions. If there are co-build opportunities, a timeline is not known at this time; however, Google has stated that predictability and speed are key cornerstones of their network build-out.”

“Regarding AT&T GigaPower:

- GigaPower is an AT&T initiative that is expected to deliver an ultra-fast fiber network, with broadband speeds up to 1 Gigabit per second, to 100 candidate cities in AT&T’s operating territories throughout the country; Palo Alto is one of those cities.
- In Palo Alto, AT&T plans to install approximately 27 cabinets in about half of the City. We understand that most of these cabinets will be located next to existing cabinets already in place for AT&T’s U-verse service. If AT&T gains a sufficient take-rate for GigaPower service, the remainder of the City would be built-out.
- AT&T is in the process of initiating permits to use the rights-of-way to install these cabinets for GigaPower service with a timetable to begin construction this year.”

“The current staffing for the current fiber and wireless initiatives is 1.75 FTEs from the IT and Utilities departments. Based on the anticipated staffing needed for the City’s fiber and wireless initiatives, in addition to the anticipated high volume of work due to Google’s and AT&T’s plans, the amount of staff and necessary skill-sets is not currently in place; as a result, at the November 30, 2015 Council meeting, the Council approved a staff recommendation to hire a temporary *Fiber and Wireless Senior Program Manager* position for up to three years at an annual cost of \$228,000. Staff also plans to bring a recommendation to Council next month to issue an RFP for a contractor to supplement City staff to handle the volume of work for a citywide build-out by Google. The cost for this will be reimbursed by Google under the Cost Recovery Agreement. The job description for this temporary program manager position is currently under development and recruitment is expected to begin soon. This position will work across city departments and with third party providers. The preferred candidate should have a background in fiber network design, engineering and construction, in addition to an ability to navigate City processes for a large-scale construction project. The candidate for this position will also be expected to communicate effectively with the City Council, Utility Advisory Commission, staff and the community about the various fiber and wireless related initiatives.”

Commissioner Hall: Google had a process in place to select cities for roll out of its FTTP and what’s the status of this now. Fleming replied that Palo Alto is still in the running and is working through the many issues with Google Fiber representatives.

Commissioner Hall: I understand that the co-build model is in process, but how could this be structured while the City itself has a proposal to expand its own fiber system. Fleming said that Council directed staff to issue an RFI. It is an awkward time with lots of activity.

Commissioner Danaher: City only laying backbone conduit, not to the premises. Jonathan said that the discussion still ongoing with Google and we don’t want to limit the options at this stage. Google’s plan is to have fiber throughout the city.

Commissioner Schwartz: Are any other cities asking to do a co-build? Fleming replied no. Commissioner Schwartz: Is that likely to make Google less interested in Palo Alto? Reichental replied no, they are ready to proceed. Google is interested in speed and that may be an issue if the City takes too long.

Commissioner Schwartz: Why is the City doing this? We need to take a step back and finding out the objectives and how will it be used, what's it for. This has not been addressed in any document so far. Fleming noted that the project cost is high and there are ways to mitigate the risk by evaluating public-private partnership opportunities in the RFI process.

Chair Foster replied that the goal is high speed Internet. Commissioner Schwartz said that what people can do with this new fiber service that can't be done now needs to be fleshed out. Reichental commented that a business case does need to be developed – economic outcomes, enables smart grid. City is already a high speed broadband city, but the world is headed to greater connectivity, big data, tele-medicine, the Internet of Things (“IoT”), etc. The community feels strongly that there is a need for this in the community. To enable high speed access, you need all the different aspects working, not just the last bit of fiber to the home. It is not a guarantee of better service, but it will be very fast and, as other parts of the entire system improve, it will be a piece of future. Fleming said that new applications requiring substantial amounts of bandwidth are emerging and the world is changing fast. Commissioner Schwartz noted that these benefits need to be added to the reports on the subject and they haven't been described in prior reports.

Vice Chair Cook said that the next topic on undergrounding relates to this issue since many areas of the city are not undergrounded and won't be for many years. What about putting a requirement that, when the area is converted from overhead to underground, that the fiber provider must contribute to the cost of conversion.

ITEM 2. DISCUSSION: Report on Current Status of the Electric Overhead to Underground Conversion Program

Electric Engineering Manager Tom Ting reviewed the written report, noting that the last time the UAC discussed this topic, it recommended Council establish a citizen advisory committee to study the program. However, the Council did not approve this recommendation so the program has continued as planned. Staff is also working with AT&T to determine other areas which meet the requirements for AT&T contributing to the cost of the project.

Commissioner Schwartz asked how fiber will be addressed. Ting said that when an undergrounding district is completed, all services (fiber, electric, telephone, CATV) are undergrounded. Google, or any other third party lease of pole space from of CPA or AT&T, would need to remove their lines as the poles will be removed. They could participate in a joint trench and share of the cost of undergrounding.

Assistant Director Dean Batchelor stated that it costs about \$20,000 per house to underground services, but AT&T only pays \$2,000. The total cost to underground the 14,000 homes that are not currently undergrounded is about \$280 million and AT&T's share of the cost is \$28,000,000.

Commissioner Hall asked who determines which services would be undergrounded. Ting said that once an undergrounding district is defined, all the utilities must be undergrounded. Commissioner Hall asked about the process for deciding to proceed with an underground district and if there some sort of threshold of support by homeowners in an area. Ting replied that there is no threshold. Staff surveys impacted property owners and the survey information presented to Council which makes the final decision on establishment of undergrounding district.

Commissioner Hall asked what the limiting factors are to moving quickly to underground the entire city. Ting replied that the factors are generally cost, time and effort since these projects take a lot of work and it may take up to 3 years to complete one undergrounding district project, from start of the administrative process till end of construction.

Commissioner Schwartz stated the having an overhead system could be an advantage for getting Google to provide service.

Commissioner Ballantine asked what the benefits are, including cost savings, and reliability. Ting said that new districts are more reliable in the beginning, but as equipment ages they can experience outages that are more difficult to troubleshoot and take longer to repair. Underground utilities are also more costly to maintain and the equipment has a shorter life, with submersible transformers having an expected life of 15 years while padmount transformer are expected to last at least 30 years.

Commissioner Ballantine asks if undergrounding is an opportunity to make upgrades in capacity. Ting said that every undergrounding plan is reviewed and designs are brought up to current standards to improve reliability and meet future capacity needs.

Batchelor said as we underground residential neighborhoods due to limitations of space and probable objections for homeowners, transformers will most likely be placed below ground as homeowners will not want a padmount transformer on the lawn or visible from the front window.

Vice Chair Cook asked how much does the AT&T participation really saves. The report seems to indicate that AT&T's participation saves just 10%. Batchelor replied we estimate AT&T's contribution of project cost at 10%, or \$28,000,000 for undergrounding the remaining overhead lines.

Vice Chair Cook said that undergrounding hasn't been done in a way that benefits all neighborhoods. He said that undergrounding is an improvement in people's quality of life and the community has shown a willingness to spend money to improve the quality of life. He noted that the program should continue to make progress.

Commissioner Eglash said that Vice Chair Cook made a good point and sees that the difference in contribution from AT&T is not substantial enough to stop the program. He asked why the

pace can't be increased. Ting said that the pace can be increased but how it is paid for needs to be determined. Commissioner Eglash asked if staff can review the costs and identify policy alternatives to increase the pace. With the analysis, the Council can make a decision about the appropriate level of expenditure.

Commissioner Hall agreed with Commissioner Eglash's remarks that the undergrounding timeframe should be re-examined. The staff should prepare an analysis for the UAC to provide details on what it would take and how long to underground the remaining overhead lines in the city.

Commissioner Eglash said that this is not the normal way that the UAC contributes to the discussions since it usually reacts to staff's operations including areas such as rate design. However, he feels that this is an area that a fact-based recommendation could be developed.

Commissioner Ballantine said that undergrounding can't be done for aesthetics at the cost of reliability. Perhaps more money could be spent to improve the electronics in the distribution system so that outages in the underground systems can be repaired more quickly. Ting later commented that there is a separate initiative looking at smart grid and advanced meters. This would include automation of the distribution system and sensing to help troubleshoot during outages.

Commissioner Danaher said that property owners should pay more since it does increase a home's value. Perhaps it could be financed with a vote of the people. Ting said that the objective of the citizen's advisory committee that was recommended to council in 2013 was to come up with various methods of financing the added cost of the undergrounding program.

Commissioner Hall asked if the UAC should have a more in depth discussion in the future to identify alternatives going forward given the changing circumstances (e.g. smart grid, fiber, etc.).

Public Comment

Herb Borock said that the cost sharing arrangement for undergrounding projects has changed over time. The UAC should see the total costs that would be paid by all parties – other service providers, ratepayers, property owners. Is it necessary to spend the 2% budgeted on both new underground districts as well as existing underground district rebuilds.

ITEM 3. ACTION: Staff Recommendation that the Utilities Advisory Commission Recommend that the City Council Adopt a Resolution Approving a Power Purchase Agreement with Hecate Energy Palo Alto LLC for up to 75,000 Megawatt-hours Per Year of Energy over a Term of up to 40 years for a Total Not to Exceed Amount of \$101 Million

Senior Resource Planner Jim Stack summarized the written report. He explained that staff issued a request for proposals (RFP) last spring in order to replace the energy provided by an old wind energy contract that is set to expire in 2021, and also because the 30% federal investment tax credit (ITC) was scheduled to fall to 10% at the end of 2016. He said that 41 project proposals were received in the spring 2015 RFP.

Commissioner Hall asked why staff decided to reject the other RFP proposals, and whether it was for any reason other than cost. Stack explained that the evaluation criteria staff used included price and value as well as project viability.

Stack described the Wilsona Solar Power Purchase Agreement (PPA) as having a capacity of 26 megawatts (MW), which would generate 7.5% of the City's annual electric supply and would have an online date of June 1, 2021. The levelized price is \$36.76 per megawatt-hour (MWh) over term of the PPA, which could range from 25 years to 40 years, and the project is located in Los Angeles County near Palmdale. He noted that the City can request that Hecate build an energy storage facility at the project site at any time, and that Hecate has some experience developing such facilities. Stack discussed the risks of the proposed PPA and the risk mitigation measures that are part of the contract, which include having the project developer post development and performance assurance deposits in amounts that are significantly greater than those that have been posted for all of the other renewable energy PPAs the City has executed.

Stack stated that the proposed PPA could deliver more energy than the City needs in 2021 through 2028 in the event that all the other solar projects that the City has contracted with are completed and the hydroelectric generation is average or better. He noted that in 2028, earlier renewable PPAs expire creating the need for more renewable energy.

Stack said that the electric portfolio is highly affected by hydro conditions and that, in wet hydro conditions, surplus renewable energy would be sold in the market, but that the RECs could be banked to meet Renewable Portfolio Standard (RPS) goals as well to maintain carbon neutrality.

Stack explained that the green premium for the Wilsona project is estimated at -\$1.1 million per year, and that this commitment would bring the City's total committed green premium level for all renewable energy projects down to \$1.2 million per year, which is equal to a rate impact of about 0.12 cents/kWh.

Stack stated that in late December Congress passed a multi-year extension of the 30% federal ITC, which, along with the passage of the state's 50% RPS law last summer, changed the landscape for renewable energy in California. He noted that the ITC extension undermined one of the main drivers for issuing the RFP in 2015, and that if the City rejected the proposed PPA staff could still issue another RFP in 2018 or 2019 and execute a PPA for a project that would still be able to capture the 30% federal ITC.

Commissioner Schwartz asked what happens if there is too much solar being generated in the area where this project is located and it gets curtailed, and what mitigation measures we have to reduce congestion. Stack explained that there are typically no physical constraints on the project delivering energy to the grid, but rather that at times when there is too much energy being generated or too little demand for the energy the market price of the energy from the project can go negative. In those situations the City would likely want to curtail the project's

energy in order to avoid those negative prices, and the proposed PPA includes a provision allowing the City to avoid paying the developer for the first 50 hours per year of curtailment that it requests. This provision is different from the City's other PPAs, which all require that the City pay for all of energy that gets curtailed at its own request.

Commissioner Ballantine noted that there could actually be scenarios where there is too much energy being generated in southern California and not enough demand for it, such that the electricity actually does need to physically flow from southern California to northern California. Compliance Manager Debbie Lloyd added that this issue of grid congestion and over-generation is largely a California Independent System Operator (CAISO) market design issue. She explained that for all of the energy consumed in Palo Alto, the City has to pay the CAISO a northern California load price; and all of the City's generating resources get paid by the CAISO a price that's specific to their locations on the grid. So congestion problems manifest themselves as price differentials between the price the City pays for its load and the price it gets paid by the CAISO for the energy generated by its resources.

Nicholas Bullinger, Chief Operating Officer of Hecate Energy, was in attendance at the meeting, and Chair Foster invited him to speak. Bullinger described his company's background, noting that it focuses on the development of a range of different energy technologies, although it started out focusing on natural gas-powered generation. He described the financing that the company plans to use for the project and stated that they have partnered with other cities in the past. He explained that they have large solar projects with the City of Los Angeles.

Commissioner Hall asked Bullinger about the fact that permitting and CEQA review for the project have not been completed yet, and whether there may be any issues with protected species at the project site. Bullinger stated that the project site is on disturbed agricultural land so it will not have any issues with protected species, and that the site has many advantages including being located close to high voltage transmission facilities.

Commissioner Eglash asked why the City sought this contract in 2015 since it wouldn't be online for many years. Stack said that the primary factor that led staff to issue the RFP in 2015 was the fact that at the time the RFP was issued the 30% federal ITC was slated to drop to 10% at the end of 2016, and that staff was concerned that renewable energy prices would increase significantly after that time.

Commissioner Eglash said it was worth taking a moment to review the success of the City's RPS program and the carbon neutral portfolio. He also appreciated the fact that staff included a section in the report and presentation explaining the alternative to approving the project. He noted that the price appears to be so low as to make the project unbuildable, but that he was happy with the risk mitigation measures included in the PPA, particularly the large development security that the developer is required to provide.

Vice Chair Cook congratulated staff on this contract. He asked if there were any provisions included in the PPA to adjust the contract price in the event that the project's development costs turn out to be much higher than expected. Stack said that there are no price adjustment

mechanisms included in the PPA, and that the developer holds all of the price risk related to development costs. He added that there are off-ramps included in the contract allowing the City to terminate the PPA in the event the developer experiences problems getting the project built and fails to meet the contractual deadline for starting construction.

ACTION:

Chair Foster made a motion that the UAC recommend that the City Council adopt a resolution to:

1. Approve a Power Purchase Agreement (PPA) with Hecate Energy Palo Alto LLC (HEPA), a Delaware limited liability company, for the acquisition of up to 75,000 Megawatt-hours (MWh) per year of energy from the Wilsona solar project (Wilsona) over a maximum of forty years at a total cost not to exceed \$101 million; and
2. Waive the application of the investment-grade credit rating requirement of Section 2.30.340(d) of the Palo Alto Municipal Code, which applies to energy companies that do business with the City, as HEPA will provide a \$5.2 million letter of credit as a development assurance deposit, and a subsequent \$2.6 million letter of credit as a performance assurance deposit.
3. Delegate to the City Manager or his designee, the authority to execute on behalf of the City the PPA with HEPA, the three contract term extension options available to the City under the PPA, and any documents necessary to administer the agreements that are consistent with the Palo Alto Municipal Code and City Council approved policies.
4. Waive the application of the anti-speculation requirement of Section D.1 of the City's Energy Risk Management Policy as it may apply to surplus electricity purchases resulting from the City's participation in the Wilsona PPA, due to the variability of the City's hydroelectric resources.

Commissioner Danaher seconded the motion. The motion carried unanimously (7-0) with Chair Foster, Vice Chair Cook, and Commissioners Ballantine, Danaher, Eglash, Hall, and Schwartz voting yes.

ITEM 4. DISCUSSION: Solar Hot Water Heating Program

Assistant Director Jane Ratchye stated that this item, which was provided as an informational item last month was requested to be put on the agenda for discussion by the Commission.

Chair Foster said that solar hot water heating systems have been successful in many parts of the world, but have not been successful here. He suspects low gas prices and high installation costs. He noted the success of the Peninsula SunShares group/discount buy program for solar PV. He wondered if a collective buying program could drive down the price so that more customers would participate.

Commissioner Schwartz asked if the 43 customers who have participated are happy with these systems. Ratchye responded that an expert on the program could be available to answer detailed questions if requested by the Commission, but that this is not on the staff work plan.

She noted that the City did have a successful group-buy solar hot water heater program in the early-1980s, but that the technology was much simpler and installation was relatively cheap.

Commissioner Schwartz asked if she could put someone from Columbia who has a successful solar hot water heating program in touch with staff to discuss their programs. Commissioner Eglash said that he wanted to be sensitive to requests for staff time and work plan. He is concerned about asking staff to spend time to meet with vendors and asked what the UAC's objective is in this request.

Commissioner Ballantine said that he wanted to talk about the high level physics and the best way to capture solar energy. He said that the best efficiency for PV is about 20%, but the efficiency for solar thermal is much higher. The Department of Energy's (DOE's) website said that the best way to reduce CO2 emissions is thermal solar. The National Renewable Energy Lab (NREL) produced a paper that highlights the advantages of thermal solar. He said that if we want to attack climate change, we need to do something drastic and thermal solar is much more efficient than solar PV. If we have a strategy towards electrification, then we'll have problems with finding local solar energy to power the new loads and with outages, etc. It may be better to meet the thermal loads (building and water heating) with thermal solar systems, rather than with electricity, even if renewable. It will be impossible to put enough solar PV panels on your roof to meet all of your loads, if all the appliances are all electric. I am looking for the DOE's expert on solar thermal systems.

Commissioner Schwartz noted that solar thermal energy systems are consistent with the passive solar movement that the City is supportive of. She said that, in response to Commissioner Eglash's concern regarding staff resources, considering solar thermal systems is consistent with the overall City work plan.

Commissioner Eglash said that if the UAC wants to expand the discussion to climate change and electrification options, there is a very broad context for this discussion. He said that separately, they are discussing using electrification and how to deal with natural gas and that this is a large part of the future discussion. He said that the early 1980's systems had issues with leaks and weight of the systems as well as the difficulty with replacing roofing materials. He said that the discussion could be broad enough to discuss water heating in general with a comprehensive evaluation of electric water heaters, heat pump water heaters, natural gas water heaters, and solar thermal water heating systems.

Commissioner Danaher said after the heat pump water heater pilot project is complete could be the optimal time for such a broad discussion after getting feedback from pilot participants.

Ratchye commented that the City does have a program and do offer rebates to encourage solar hot water heating systems, but the program has not been very successful since the systems are not cost-effective and, therefore, are difficult to convince customers to purchase. If there are other solutions and systems that would be cost-effective, then those vendors have the opportunity to sell them in California since all utilities are required to have a program to offer rebates for solar hot water heating systems.

Commissioner Eglash said that the some people have installed these solar hot water systems with natural gas water heaters used as a backup.

Interim Director Shikada asked how best to tackle the topic given the work plan. He said that the issue of how topics are brought forward for discussion should be examined. This can be discussed together with staff. Staff's work plan is developed in the context of the budget and, currently, the Sustainability and Climate Action Plan, which has many activities. He sees a need for some organizing around the development of topics to be brought forward to the UAC.

Chair Foster said that the community has long been very committed to climate protection, renewable energy, and green energy in general. The voluntary PaloAltoGreen program was the top ranked program in the country demonstrating a willingness to pay extra for sustainability-related efforts. Thus, the UAC reflects that commitment to these efforts and likes to push the envelope on these programs. This, however, bounces up against the limits of staff resources, but would like to discuss how to think about solar hot water heating can be successful. Perhaps, the UAC can do some work on this.

Commissioner Eglash said that, despite the community's interest in these topics, rates are also a very big issue. There has been big push-back whenever a new staff position is proposed to work on these areas. At least once a year, the UAC scrutinizes CPAU's rates and compares them to PG&E and nearby municipal utilities. We then take pains to explain whenever we are not the lowest rates, without even mentioning reliability and safety. It's only because CPAU has done a good job controlling costs and achieving high reliability and safety that we can even have these discussions.

Chair Foster agreed with what Commissioner Eglash said and said that the UAC has never suggested that a staff person be hired to respond to UAC input. However, CPAU has hired people over the years to run the various programs and would like to have a discussion of staff resource availability.

Commissioner Eglash remarked that the Office of Sustainability (OOS) may have resources that could be utilized for these activities. The UAC has often have bumped up against CPAU's work plan and priorities, but the Chief Sustainability Officer may have resources available. He said that he wished that the UAC had some jurisdiction over the OOS since many of the things such as this topic discussed by the UAC could be a better use of time than other things being done from that office.

Interim Director Shikada reminded the UAC to attend the Sustainability Summit on Sunday, January 24.

Commissioner Hall said that he was interested in learning about topics such as this and asked that if other commissioners had items of interest to them, he would appreciate it if they could be forwarded to the rest of the commissioners.

Commissioner Ballantine indicated that he would send a link to the NREL paper to Interim Director Shikada so it could be sent out to the commission.

Chair Foster added that this technique of a commissioner sending items of interest to the rest of the commission through the Director has worked well in the past and that practice should continue.

ITEM 5. ACTION: Selection of Potential Topic(s) for Discussion at Future UAC Meeting

Chair Foster asked that the process to agendaize topics be put on the agenda for discussion. Interim Director Shikada agreed.

Commissioner Hall asked that undergrounding topic be added in the future. Vice Chair Cook suggested that he and Commissioner Hall meet with staff and determine the next steps and report out to the commission at a future meeting.

ACTION:

None.

Commissioner Hall left the meeting at 10:03 pm after the conclusion of item #5.

ITEM 6. ACTION: Staff Recommendation that the Utilities Advisory Commission Recommend that the City Council Adopt a Resolution Approving the Amended City of Palo Alto Utilities Legislative Policy Guidelines

Compliance Manager Debbie Lloyd introduced Senior Resource Planner Heather Dauler who is taking over the management of the Utilities' legislative and regulatory program.

Lloyd and Dauler presented a summary of the written report including a brief review of legislative activity in 2015, expected legislative activities in 2016, and the proposed changes to the Utilities legislative policy guidelines.

Chair Foster asked why the City would advocate for privacy concerns with respect to AB 802, the building benchmarking bill, and that he was in favor of energy use disclosure, Commissioner Schwartz agreed. Commissioner Danaher stated that he may have a different opinion since he was aware that certain commercial customers, such as server farms, were sensitive that their energy profile could provide competitors with insight on their operations. Commissioner Schwartz said that aggregated customer information would not disclose any useful/sensitive information. Commissioner Eglash said he understood customer privacy concerns. Chair Foster asked that staff acknowledge that there were different opinions on the issue of energy and water use disclosure.

Commissioner Eglash asked what we are advocating for with respect to a Net Energy Metering (NEM) successor program. Lloyd replied that the goal is for local agencies such as Palo Alto to have the ability to develop and design their own programs that make sense for their customers.

The commissioners discussed the proposed changes to “All Utilities” Goals 1 and 3 and recommended the original language be retained as the reference to environmental goals carried more weight in goal #1.

Chair Foster said that the new overall guideline #8 with respect to customer data security should still allow that anonymized customer data. He said that there is a balance and that there are companies that can use usage data for good reasons, including those that lead to energy efficiency and climate protective improvements. Lloyd stated that guideline #8 addresses security of data such as personal credit card info, etc. Commissioner Eglash noted that there is clearly a diversity of opinions on the matter of customer use data.

Commissioner Schwartz noted that the issue of privacy is being worked by many bodies and no one is advocating releasing personal customer data. She suggested that the City’s legislative guidelines will not influence this debate.

ACTION:

Vice Chair Cook made a motion that the UAC recommend that the City Council approve the revised guidelines after discarding the proposed changes to “All Utilities” Goals 1 and 3. Commissioner Danaher seconded the motion. The motion carried unanimously (6-0) with Chair Foster, Vice Chair Cook, and Commissioners Ballantine, Danaher, Eglash, and Schwartz voting yes and Commissioner Hall absent.

ITEM 7: DISCUSSION: Update and Discussion on Impacts of Statewide Drought no Water and Hydroelectric Supplies

Ratchye provided an update on the ongoing drought. She said that the City used 28% less water in 2015 than in 2013. She added that for the water savings compliance period starting June 1, 2015 to date, the City has saved 32.8% and will very likely meet the 24% savings target for the period, which ends at the end of February 2016. The service area of the San Francisco Public Utilities Commission has also exceeded its savings target for 2015, which will lead to a higher than expected wholesale water rate increase for fiscal year (FY) 2017.

Commissioner Schwartz noted that rate increases need careful communication.

Ratchye closed by showing the impact of the drought on the electric utility, which normally gets about half its supplies from hydroelectric resources. The drought is expected to increase FY 2016 costs by over \$9 million.

Meeting adjourned at 10:46 p.m.

Respectfully submitted,
Marites Ward
City of Palo Alto Utilities