

MEMORANDUM

2

TO: UTILITIES ADVISORY COMMISSION

FROM: UTILITIES DEPARTMENT

DATE: FEBRUARY 7, 2007

SUBJECT: CHANGES TO LONG TERM ELECTRIC ACQUISITION PLAN (LEAP) OBJECTIVES AND GUIDELINES

REQUEST

Staff recommends that the UAC recommend that the Council approve changes to the Long Term Electric Acquisition Plan (LEAP) Objectives and Guidelines.

BACKGROUND

The 40-year electricity supply contract with Western Area Power Administration (Western) served more than 90% of City's electrical load until December 2004. In order to plan for the reduced supply under the new 2005 Western Base Resource contract and plan for ways to meet the electric supply needs with new sources of supply in a continually changing regulatory climate, Council provided policy direction by adopting four LEAP Objectives (November 2001, CMR: 425:01) and seven LEAP Guidelines (October 2002, CMR: 398:02) to guide staff. Within the LEAP Objectives and Guidelines framework, Council also adopted the first LEAP Implementation Plan in August 2003 (CMR:354:03).

Staff has kept the Council and the UAC apprised of the LEAP progress through periodic updates (CMR: 370:04 in August 2004, and CMR: 198:05 in April 2005, and CMR:169:06 in April 2006) and in UAC quarterly reports. The LEAP Implementation Plan was revised in the April 2006 update to reflect the progress and completion of many of the implementation tasks and to incorporate new legislative requirements, new policy directives, and the changing utility landscape.

Since 2001/2002, staff has maintained a supply cost advantage of the supply portfolio. Successful execution of the implementation plan within the framework of the LEAP Objectives and Guidelines has greatly transformed the electric supply portfolio make-up and portfolio management strategies. The major aspects of these developments are:

- Developed a flexible and competitive supply portfolio with focus on renewable supply
- Entered into new long term renewable resource contracts from wind and landfill gas resources projected to meet approximately 20% of the City's supply needs;
- Established robust supply contracts with private sector suppliers to purchase market price based energy supplies at competitive prices for the intermediate period;
- Implemented an enhanced energy risk management program;
- Gained experience in managing a volatile hydro supply portfolio that on an average year

could meet 50% of City's supply needs, but could vary by 20-25% of annual electric energy needs due to changes in hydrology;

- Positively influenced new regulations and legislation to increase reliability and to establish robust transmission and energy markets; and
- Completed the local generation feasibility study, ruling out a large local gas-fired power plant.

New legislation, regulations, and policies affecting electric energy procurement have been enacted that were not in place when the Objectives and Guidelines were approved. Numerous new rules and goals are now in place in arenas that include climate change and greenhouse gases, energy efficiency, renewable energy, market design, transmission planning, solar energy, risk management, and retail rate design. Legislation at the state level is exhibiting an ever-increasing encroachment on local control for publicly owned utilities, with associated increases in compliance and reporting activities.

New directions that affect electric energy procurement include:

1. City Policies and Community Actions
 - a. Utilities Strategic Plan (updated CMR:148:05)
 - b. Energy Risk Management Policies (updated CMR:128:06)
 - c. Interim Electric Utility Resource Adequacy Program (CMR:222:06)
 - d. National Action Plan for Energy Efficiency (NAPEE MOU) (CMR:316:06)
 - e. CMUA Greenhouse Gas Reduction Principles (CMR:315:06)
 - f. Ultra-clean Distributed Generation Incentive Program Guidelines (CMR:406:06)
 - g. ICLEI Cities for Climate Protection Campaign (CMR:426:06)
 - h. Mayor's Green Ribbon Task Force on Climate Protection (December 18, 2006)
2. State Policy
 - a. Integrated Energy Policy Reports (updated November 2006)
 - b. Governor's Executive Order: Climate Action Team (June 2005)
3. Legislative & Regulatory
 - a. SB 1037 (2005) – Loading Order
 - b. AB 2021 (2006) – Energy Efficiency
 - c. SB 1 (2006) – Million Solar Roofs
 - d. AB 32 (2006) – Global Warming Solutions Act
 - e. SB1368 (2006) – Greenhouse gas limits on long-term electricity baseload contracts
 - f. SB107 (2006) – Accelerated Renewable Portfolio Standards
 - g. Federal Energy Policy Act of 2005

Successful implementation of LEAP tasks, experience gained in operating the transformed portfolio over the past two years, and the need to keep up with changes in the industry environment, the legislative landscape, and new opportunities necessitate the need to update the four Objective and seven Guidelines.

DISCUSSION

Proposed Changes to LEAP Objectives

The high-level LEAP Objectives set by Council in November 2001 are still largely valid. The clarifying modifications proposed, as shown below, are mainly to emphasize Council oversight and local control. The proposed revisions are aimed at placing greater emphasis on environmental stewardship, ensuring compliance with new regulations, and bringing the Objectives more into line with approved implementation plans.

- Objective #1 has been combined with the previous Objective #4, with a small change in wording to enhance clarity.
- Objective #2 has been simplified.
- Objective #3 is unchanged.
- Objective #4 is new, highlighting the importance of local control by City Council in utility matters.

	Existing Objectives	Proposed New Objectives
Objective #1	Ensure low and stable electric supply rates for customers.	Provide competitive and predictable supply cost while balancing environmental, local reliability, rate and cost impacts.
Objective #2	Provide superior financial performance to customers and the City by maintaining a supply portfolio cost advantage compared to market cost and the retail supply rate advantage compared to PG&E.	Maintain a supply portfolio cost advantage compared to wholesale electricity market cost
Objective #3	Enhance supply reliability to meet City and customer needs by pursuing opportunities including transmission system upgrades and local generation.	Enhance supply reliability to meet City and customer needs by pursuing opportunities including transmission system upgrades and local generation.
Objective #4	Balance environment, local reliability, rates and cost impacts when considering renewable resource and energy efficiency investments.	Act to maintain the City Council's ability to exercise local control of decision making related to all aspects of serving customer energy needs.

Proposed Changes to LEAP Guidelines

The proposed modifications to the LEAP Guidelines, set by Council in October 2002, are described in detail in this section. The changes are intended to better reflect the revised Objectives, account for

initiatives that have been completed and new ones that are underway, eliminate portions of some Guidelines that are no longer applicable, and bring the Guidelines more into line with approved implementation plans and new priorities.

- Guideline #1 recognizes the legislatively-mandated resource priority hierarchy.
- Guideline #2 combines hydroelectric-related issues previously in separate guidelines into one.
- Guideline #3 has been updated to reflect the evolution of the City’s Energy Risk Management Policies and Guidelines.
- Guideline #4 delineates efforts in the areas of market design, transmission, and resource adequacy that have progressed significantly since 2002.
- Guideline #5 reflects Council’s decision (CMR:169:06) to emphasize small-scale local ultra-clean distributed generation.
- Guideline #6 accelerates and expands the City’s renewable energy targets.
- Guideline #7 reflects a renewed emphasis on cost-effective energy efficiency in keeping with Council priorities and legislative requirements.
- Guideline #8 is new (Climate Action Plan).

**Proposed Guideline #1: Resource Loading Order
(formerly Electric Portfolio Dependence on Western)**

With the transformation of the portfolio from a Western-centric supply prior to 2004 to a more diverse portfolio owned or contracted directly by the City, Guideline #1 is now out of date. The new guideline recognizes the legislatively-mandated resource priority order, or “loading order”, when acquiring resources to meet City loads. The City has followed this hierarchy. This loading order was first codified with legislation in SB 1037 (2005) and modified slightly in AB 2021 (2006). The new Guideline incorporates this language, and adds an additional priority to local ultra-clean distributed generation above conventional supply.

From SB 1037:

9615. (a) Each local publicly owned electric utility, in procuring energy, shall first acquire all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.

From AB2021:

9615. (a) Each local publicly owned electric utility, in procuring energy to serve the load of its retail end-use customers, shall first acquire all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.

Guideline #1	
Existing Guideline	Proposed New Guideline
<p>Electric Portfolio Dependence on Western</p> <p>While maintaining the flexibility to adopt favorable ‘custom products’ offered by Western, manage a supply portfolio independent of Western beyond the Base Resource Contract.</p>	<p>Resource Loading Order</p> <p>Manage a supply portfolio comprising locally selected and joint action cooperative purchases, with the following preference hierarchy for resource acquisition:</p> <ul style="list-style-type: none"> A. Efficiency B. Renewable Supply C. Local Ultra-Clean Distributed Generation D. Conventional Supply

Proposed Guideline #2: Hydro Resource Management (formerly Hydro Risk Management)

This guideline combines hydroelectric-related issues previously in separate guidelines into one, now addressing both the value proposition and the risk associated with hydroelectric power generation. Having gained experienced in successfully managing this volatile supply resource in 2005 and 2006, the guideline was expanded to recognize the value created by the City’s participation in various organizations and forums to maximize the value of City-owned Calaveras resource and the Central Valley Project hydro resources under the City’s Western contract.

Guideline #2	
Existing Guideline	Proposed New Guideline
<p>Hydro Risk Management</p> <p>Manage hydro production risk by:</p> <ul style="list-style-type: none"> A. Planning for an average hydro year on a long-term basis; B. Diversifying to renewable and/or fossil generation technologies; and C. Maintaining adequate supply rate stabilization reserve. 	<p>Hydro Resource Management</p> <p>Manage hydroelectric supply resources by:</p> <ul style="list-style-type: none"> A. Planning for an average hydro year on a long-term basis; B. Maintaining the flexibility to adopt hydro resource management products; C. Maximizing value of the Western and Calaveras resource; and D. Maintaining adequate supply rate stabilization reserves to manage hydro production volume uncertainty.

Proposed Guideline #3: Energy Risk Management (formerly Market Risk Management)

The risk management guideline requires updating to reflect the evolution of the City’s Energy Risk Management Policies and Guidelines, which now incorporate detailed and specific credit, contracting, and purchasing limits, Council’s decision to move away from large fossil fuel plant

investment commitment (CMR:169:06), and the increased commitment to renewable supply resources.

Guideline #3	
Existing Guideline	Proposed New Guideline
<p>Market Risk Management</p> <p>Manage market risk by adopting a portfolio strategy for electric supply procurement by:</p> <p>A. Diversifying energy purchases across commitment date, start-date, duration, suppliers, pricing terms and fuel sources;</p> <p>B. Targeting additional thermal plant ownership/investment commitment at ~25 MW but in no event more than 50 MW;</p> <p>C. Maintaining a prudent exposure to changing market prices by:</p> <ol style="list-style-type: none"> 1. Procuring resources at fixed price for at most 90% of expected load for 2 or more years out, assuming average hydro conditions; and 2. Procuring resources at fixed price for at most 75% of expected load for 5 or more years out, assuming average hydro conditions; and <p>D. Avoiding contract-based fixed price energy purchases (except for contracts for renewable resources) for durations greater than 10 years.</p>	<p>Energy Risk Management</p> <p>Manage supply cost uncertainty and risk by:</p> <p>A. Implementing the City’s Energy Risk Management Policies and Guidelines;</p> <p>B. Maintaining an adequate pool of credit-worthy suppliers;</p> <p>C. Diversifying supply purchases across commitment date, start date, duration, suppliers, pricing terms and fuel sources;</p> <p>D. Maintaining a prudent exposure to changing market prices; and</p> <p>E. Maintaining adequate supply rate stabilization reserves to manage market, credit, and other uncertainties.</p>

Proposed Guideline #4: Market Design, Transmission and Resource Adequacy (formerly Reliable and Cost Effective Transmission Services)

Since the implementation of the flawed California deregulation rules in 1998 that resulted in the energy market meltdown in 2000/2001, the state and federal agencies have taken several steps to prevent such a reoccurrence. Some of these changes, including compelling utilities to commit to long term supply and less reliance on the spot market, have stabilized the energy markets in California and have somewhat increased investment in generation plants to keep up with growing loads.

Palo Alto, along with other municipal utilities, has intervened jointly in the new transmission market design expected to be implemented in 2008 with mixed results; municipal utilities have been successful in maintaining a level playing field for municipal utilities, but on the other hand have not been successful in opposing the complexity being built into the transmission markets. Palo Alto’s

efforts to increase reliability of the transmission system have also produced favorable results. Staff expects to continue in these efforts in the coming years, including finding ways to better interconnect with the transmission grid. The new guideline better describes this Council agenda.

Guideline #4	
Existing Guideline	Proposed New Guideline
<p>Reliable and Cost Effective Transmission Services</p> <p>Ensure the reliability of supply at fair and reasonable transmission cost by:</p> <p>A. Supporting, through political and technical advocacy and/or direct investment, the upgrading of Bay Area transmission to improve reliability and relieve congestion;</p> <p>B. Participating in transmission market design to ensure that market design results in workable competitive markets and equitable cost allocation;</p> <p>C. Pursuing the option of forming and/or joining a Public Power Transmission Control Area to increase control over transmission operations and related costs; and</p> <p>D. Ensuring PG&E honors the Stanislaus Commitments by providing to us firm-transmission rights or equivalent.</p>	<p>Market Design, Transmission and Resource Adequacy</p> <p>Ensure the reliability of supply at fair and reasonable transmission and capacity costs by:</p> <p>A. Actively participating, as an individual entity and also through collaborative efforts with other entities, in local, regional, statewide and federal regulatory and legislative forums. Supporting, through legislative, regulatory and technical advocacy and/or direct investment, the upgrading of Northern California transmission to improve reliability and to relieve both congestion and local capacity costs;</p> <p>B. Participating in transmission and reliability market design forums to ensure that adopted market designs result in adequate reliability, workably competitive markets and equitable cost allocation;</p> <p>C. Implementing the City of Palo Alto Electric Utility Resource Adequacy Program;</p> <p>D. Participating in Joint Action Agencies to optimize value of City-owned transmission assets and ensure compliance with FERC regulations;</p> <p>E. Supporting, through legislative, regulatory and technical advocacy, the development and availability of long-term transmission rights to serve load; and</p> <p>F. Evaluating interconnection options to the City to increase service reliability and lower delivery costs.</p>

Proposed Guideline #5: Local Generation

The proposed new local generation guideline reflects Council’s decision (CMR:169:06) to emphasize small-scale local ultra-clean distributed generation, including solar and other renewable energy resources as well as low-emission technologies such as cogeneration or fuel cells, instead of larger local power plant alternatives. The Guideline explicitly highlights the role of customer-sited solar photovoltaic systems as a component of the integrated supply portfolio, in accordance with SB1 (2006), often referred to as “million solar roofs” or “California Solar Initiative”. SB1 requires

publicly-owned utilities to offer rebates for photovoltaic systems similar to those offered investor-owned utilities like PG&E, and to budget for their load-based share of the state total goal of 3000 MW over ten years. Palo Alto already offers incentives that exceed the legislated level, but the new law adds new restrictions, reporting requirements, and volumetric targets for the solar program. The impact of SB1 is that an additional \$1.1 million per year will need to be budgeted in order to facilitate compliance with SB1, with a rate impact of 0.1 ¢/kWh. The guideline also explicitly highlights the PLUG-In ultra-clean distributed generation incentive program, to be developed and implemented within the parameters approved by Council in November 2006 (CMR:406:06), which will be designed to impart no unfavorable rate impacts by recovering the initial costs over time through shared transmission cost savings. SB107(2006) requires a “local publicly owned utility to adopt certain strategies in a long-term procurement plan to achieve efficiency in the use of fossil fuels and to address carbon emissions”, which is supported by pursuing small-scale local cogeneration alternatives.

Key excerpts from SB1 (2006):

PUC 387.5

- (a) In order to further the state goal of encouraging the installation of 3,000 megawatts of photovoltaic solar energy in California within 10 years, the governing body of a local publicly owned electric utility, as defined in subdivision (d) of Section 9604, that sells electricity at retail, shall adopt, implement, and finance a solar initiative program, funded in accordance with subdivision (b), for the purpose of investing in, and encouraging the increased installation of, residential and commercial solar energy systems.
- (b) On or before January 1, 2008, a local publicly owned electric utility shall offer monetary incentives for the installation of solar energy systems of at least two dollars and eighty cents (\$2.80) per installed watt, or for the electricity produced by the solar energy system, measured in kilowatthours, as determined by the governing board of a local publicly owned electric utility, for photovoltaic solar energy systems. The incentive level shall decline each year thereafter at a rate of no less than an average of 7 percent per year.
- (f) In establishing the program required by this section, no moneys shall be diverted from any existing programs for low-income ratepayers, or from cost-effective energy efficiency or demand response programs.
- (g) The statewide expenditures for solar programs adopted, implemented, and financed by local publicly owned electric utilities shall be seven hundred eighty-four million dollars (\$784,000,000). The expenditure level for each local publicly owned electric utility shall be based on that utility’s percentage of the total statewide load served by all local publicly owned electric utilities. Expenditures by a local publicly owned electric utility may be less than the utility’s cap amount, provided that funding is adequate to provide the incentives required by subdivisions (a) and (b).

PUC 2851

- (e)(2) Programs adopted, implemented, and financed in the amount of seven hundred eighty-four million dollars (\$784,000,000), by charges collected by local publicly owned electric utilities pursuant to Section 387.5. Nothing in this subdivision shall give the commission power and jurisdiction with respect to a local publicly owned electric utility or its customers.

Guideline #5	
Existing Guideline	Proposed New Guideline
<p>Local Generation</p> <p>Monitor the potential of local generation options to meet customer needs, improve local reliability, minimize congestion and wheeling charges, and stabilize/reduce costs.</p>	<p>Local Generation</p> <p>A. Promote and facilitate deployment of renewable resource supplies by providing expertise, education, incentives and rates to support customer-owned solar power systems, and demonstrating renewable generation technologies.</p> <p>B. Promote ultra-clean distributed generation incentive program.</p>

Proposed Guideline #6: Renewable Energy Supply (formerly Renewable Portfolio Investments)

Since the 2002 Council adoption of renewable portfolio standards of 20% by 2015 with a retail rate impact not to exceed 0.5 ¢/kWh on average, the City has entered into five long-term contracts to encourage landfill and wind energy supply development. Due to higher fossil fuel energy prices, the City was fortunate to sign-up these renewable supplies and competitive rates with minimal or no adverse impact on retail customer rates. These five contracts are projected to provide 20% of total energy supply by 2008, of which 3-5% is meant for PaloAltoGreen, leaving 15-17% toward meeting the portfolio target. In July 2006 (CMR296:06) Council also approved a joint action initiative through the Northern California Power Agency Green Power Pool Project that could add an additional 13%, sufficient to bring the CPAU power mix up to 28-30% from eligible renewable resources. Along with the 50% hydro supply portfolio in an average hydro year, this increased target could make the supply portfolio 80% renewable in an average hydro year, or 83% including PaloAltoGreen.

CPAU Renewable Electric Energy Supply Contracts Summary						
Supplier	PPM	Ameresco	Ameresco	Ameresco	PPM	NCPA
Project Name	High Winds I	Santa Cruz	Half Moon Bay	Keller Canyon	Shiloh	NGPP
Contract Status	Executed	Executed	Executed	Executed	Executed	3rd Phase
Fuel Type	Wind	Landfill Gas	Landfill Gas	Landfill Gas	Wind	TBD
Product Type	Day-Ahead Firm	Unit Contingent Firm	Unit Contingent Firm	Unit Contingent Firm	Month-Ahead Firm	TBD
Location	Solano County	Watsonville	Half Moon Bay	Pittsburg	Solano County	TBD
Site Owner	FPL	County of Santa Cruz	BFI	BFI	PPM	TBD
Project Status	Operating	Operating	Permitting	Permitting	Operating	RFP Completed
Projected/Actual Start Date	Dec-04	Feb-06	Dec-07	Nov-07	Jun-06	TBD
Term Years	23-1/2 years	20 years	20 years	20 years	15 years	< 25 Years
Contract Amount (\$)	\$78.4 million	\$13.9 million	\$26.0-\$61.8 million	\$15.6-\$22.8 million	\$75 million	\$230 million
Price \$/MWh	\$57.60 fixed	\$51/MWh + 1.5%/year	\$52/MWh + 1.5%/year	\$59/MWh + 1.5%/year	\$62.95 fixed	~\$70/MWh + 2.41%/yr
Average Cost \$/year	\$3.3 million	\$0.7 million	\$3.1 million	\$1.1 million	\$5 million	\$9.2 million
Average Cost \$/MWh	\$57.60	\$58.97	\$60.12	\$68.21	\$62.95	TBD
Levelized Cost \$/MWh (2006)	\$57.60	\$54.95	\$53.45	\$66.65	\$62.95	\$70/MWh
Ultimate Facility Capacity	162 MW	3.2 MW	5.7-13.4 MW	2.8-4.1 MW	150 MW	79 aMW
Initial Facility Capacity	162 MW	3.2 MW	11 MW	3 MW	150 MW	TBD
Palo Alto Share	12.35%	50%	50%	50%	16.66%	18.75%
Palo Alto Capacity MW	20 MW	1.6 MW	5.5 MW	1.5 MW	25 MW	15 aMW
Palo Alto Energy MWh/year	58,000	11,800	43,000	12,000	74,800	131,400
% of CPAU Load	5.60%	1.10%	4.10%	1.10%	7.10%	12.50%
CMR	CMR:424:04	CMR:461:04	CMR:100:05	CMR:350:05	CMR:386:05	CMR:296:06
Council Date	8-Nov-04	8-Nov-04	18-Jan-05	8-Aug-05	11-Oct-05	17-Jul-06

Aggressive renewable portfolio standards state-wide have been evolving through legislation and state energy policy. The original goals for investor-owned utilities established by SB1078 (2002), were to increase the share of supply by 1% per year in order to achieve 20% of electric supply from eligible renewable resources by 2017. Publicly-owned utilities were “responsible for implementing and enforcing a renewables portfolio standard that recognizes the intent of the Legislature to encourage renewable resources, while taking into consideration the effect of the standard on rates, reliability, and financial resources and the goal of environmental improvement”, and to report certain information relative to renewable energy resources to its customers. Palo Alto’s existing RPS and reporting complies with SB 1078.

The state's Energy Action Plan and the California Energy Commission's Integrated Energy Policy Report expressed a state goal of accelerating the implementation of the RPS such that the 20% goal is met seven years early—by 2010. The Governor endorsed this accelerated schedule and has set a goal of achieving a 33% renewable energy share by 2020 for the state as a whole. SB107 (2006) accelerates the 20% goal for IOUs to 2010, with the same requirement for publicly-owned utilities as SB1078 (a program that meets the intent of the Legislature), with an additional recruitment to report progress to the CEC. The 33%-by-2020 goal remains a policy objective and has not been legislated.

Staff recommends increasing the new renewable resource target share of the portfolio to 30% by 2012 and 33% by 2015, but not increasing the overall rate impact cap of 0.5 ¢/kWh. The City would pursue these targets by either jointly investing in new projects or encouraging investments by contracting for renewable energy output from proposed or existing renewable energy generation plants. The supplies to meet the demand for the City’s PaloAltoGreen program, administered separately and driven by retail customers, are in addition to the targets for the renewable energy portfolio. Palo Alto uses the state Public Resources Code definition of eligible renewable energy supplies, which excludes large hydroelectric facilities. “New” refers to facilities built or repowered after adoption of Palo Alto’s first LEAP guidelines, October 2002.

The guideline continues to include the voluntary renewable energy retail rate program, PaloAltoGreen, which has achieved the number one ranking among all green power programs in the country by participation percentage. At present now over 16% of customers subscribe to PaloAltoGreen, and the recent addition of the City of Palo Alto as a customer of the program led to the City becoming the fourth city in the nation to achieve the US EPA’s Green Power Community milestone.

Guideline #6	
Existing Guideline	Proposed New Guideline
<p>Renewable Portfolio Investments</p> <p>The City shall continue to offer a renewable resource-based retail rate for all customers who want to voluntarily select an increased content of renewable energy. In addition to the voluntary program, the City shall invest in new renewable resources to meet the City’s sustainability goals while ensuring that the retail rate impact does not exceed 0.5 ¢/kWh on average. Pursue a target level of new renewable purchases of 10% of the expected portfolio load by 2008 and move to a 20% target by 2015, contingent on economic viability. The contracts for investment in renewable resources are not to exceed 30 years in term.</p>	<p>Renewable Energy Supply</p> <p>Reduce electric portfolio dependence on fossil fuels by meeting at least 80% of City’s long term energy needs from non-fossil and non-nuclear supply.</p> <p>A. Renewable Portfolio Standard: In addition to the voluntary program, the City shall invest in new renewable resources to meet the City’s sustainability goals while ensuring that the retail rate impact does not exceed 0.5 ¢/kWh on average.</p> <p>B. Pursue a target level of new renewable purchases of 20% of the expected portfolio load by 2008 and move to a 30% target by 2012 and 33% by 2015. The contracts for investment in renewable resources shall not exceed 30 years in term.</p> <p>C. Palo Alto Green: In addition to the renewable portfolio standard, the City shall continue to offer a renewable resource-based retail rate for all customers who want to voluntarily select an increased content of non-hydro renewable energy.</p>

Proposed Guideline #7: Electric Energy Efficiency and Demand Reduction (formerly Electric Energy Efficiency Investments)

Palo Alto has long been a leader in energy efficiency programs, and views efficiency as a critical long-term “supply” resource that plays a key role in long-term planning. The energy efficiency guideline has been revised to explicitly incorporate language from SB1037 (2005) and AB2021 (2006), much of which is already included in the LEAP implementation tasks (CMR:169:06), and to concentrate on cost-effective energy efficiency as it relates to long-term energy supply planning and procurement. The proposed guideline is also consistent with the National Action Plan for Energy Efficiency Memorandum of Understanding (NAPEE MOU) endorsed by the Council (CMR:316:06). The new revised guideline also facilitates addressing the federal Energy Policy Act of 2005, particularly Title 1 (Energy Efficiency). Energy efficiency efforts are also critical in achieving greenhouse gas reduction goals reflected in California Climate Action Team goals and AB32 (California Global Warming Solutions Act of 2006) and identified in the report to Council by the Mayor’s Green Ribbon Task Force. AB 2021 requires 10-year energy efficiency plans on a three-year cycle, the first being due by June 1, 2007.

From AB2021

PUC: 9615.

- (a) Each local publicly owned electric utility, in procuring energy to serve the load of its retail end-use customers, shall first acquire all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible.

(b)...A local publicly owned electric utility’s determination of potentially achievable cost-effective electricity efficiency savings shall be made without regard to previous minimum investments undertaken pursuant to Section 385.....A local publicly owned electric utility shall treat investments made to achieve energy efficiency savings and demand reduction targets as procurement investments.

CPAU has already completed evaluation of technical and economic potential for energy efficiency in work conducted with the Rocky Mountain Institute in 2005 (reported to UAC in November 2005 and included as an attachment in CMR:169:06). The RMI report contains numerous ideas and technical data that serve as a solid analytical foundation upon which staff has been developing the long-term efficiency portfolio plan, already included as a LEAP implementation task, which is forthcoming shortly. Staff anticipates roughly doubling energy efficiency funding, but with no net increase in average customer bills.

Staff recommends that economic impacts of energy efficiency programs focus on lowering average bills, as opposed to retail rates. Energy efficiency reduces sales, and therefore can increase the rate (¢/kWh) component associated with fix costs that are collected through a volumetric charge, even though the average bill (\$/month) is lower because of lower consumption. Staff also recommends that the efficiency program guideline aims to reach all customer sectors so that no one is precluded from participating.

Guideline #7	
Existing Guideline	Proposed New Guideline
<p>Electric Energy Efficiency Investments</p> <p>Offer quality Public Benefits programs, utilizing funds collected through the 2.85% Public Benefits charge embedded in electric retail rates, to meet the resource efficiency needs of customers. Additional funding for cost-effective programs will be recommended as appropriate. Pursue these investments by:</p> <p>A. Providing expertise, education and incentives to support cost-effective customer efficiency improvements;</p> <p>B. Demonstrating renewable and/or alternative generation technologies and new efficiency alternatives; and</p> <p>C. Providing rate assistance and efficiency programs to low-income customers.</p>	<p>Electric Energy Efficiency and Demand Reduction</p> <p>A. Fund innovative programs that promote and facilitate deployment of all cost-effective, reliable and feasible energy efficiency and demand reduction opportunities as high priority resources.</p> <p>B. Use a community-wide perspective in program evaluation criteria.</p> <p>C. Use a bill reduction (utility cost) perspective in program funding criteria.</p> <p>D. Promote equity by designing and making programs available to all customers</p>

Proposed Guideline #8: Climate Action Plan (new)

Climate change has emerged as a key global environmental challenge that impacts not only utilities, but all City operations, the community, and beyond. The City is actively involved in several

activities that either directly or indirectly seek to reduce greenhouse gas emissions, including utility programs to foster energy efficiency and renewable energy, the Zero Waste strategic plan, use of alternative fuels, commute programs, and encouraging green building. The City is an active participant in Sustainable Silicon Valley, is a Climate Action Leader with the California Climate Action Registry, and the Mayor has signed the U.S. Mayors' Climate Protection Agreement. The community at large has also been involved in developing approaches to address greenhouse gas emissions, through the Mayor's Green Ribbon Task Force that was created in March 2006 to "recommend tangible steps and local actions by all stakeholder groups, including the city, to reduce global warming and encourage sustainable practices", delivering a comprehensive report to Council in December 2006.

The same night, the City formally joined ICLEI's Cities for Climate Protection[®] Campaign (CMR:426:06), adopting the following five milestones:

- Conduct a greenhouse gas emissions inventory and forecast to determine the source and quantity of greenhouse gas emissions in the jurisdiction;
- Establish a greenhouse gas emissions reduction target;
- Develop an action plan with both existing and future actions which when implemented will meet the local greenhouse gas reduction target;
- Implement the action plan; and
- Monitor and report progress; and update plans.

The current LEAP implementation tasks already include the development of a Climate Action Plan (CAP) to address greenhouse gas issues relating to utility operations (CMR:169:06) and reinforced with Council's endorsement of the *California Publicly Owned Electric Utilities' Principles Addressing Greenhouse Reduction Goals* (CMR:315:06). As the provider of electricity and natural gas to all Palo Alto customers, CPAU is the logical entity to inventory and certify greenhouse gas emissions related to utility operations, and to communicate the energy use implications to customers. CPAU will also support City efforts to report greenhouse gas inventories for City government operations, as the data are needed to obtain an accurate accounting for the Utilities Department.

The proposed new LEAP guideline aims to incorporate and address recommendations and ideas that were developed and submitted by the Mayor's Green Ribbon Task Force (Dec 18, 2006), with the expectation that continued collaboration with the community through the Task Force or a similar group will help shape the CAP. The proposed guideline will also position Palo Alto to be able to comply with and forge ahead of new legislation such as AB 32 (California Global Warming Solutions Act of 2006) and SB1368 (greenhouse gas emissions limits on baseload electricity contracts), along with several other state policies and pending federal legislation. Utilities are at the forefront of legislative action to combat greenhouse gas emissions, and more is expected in the next few years.

The proposed guideline adds emphasis to the importance of these activities. The cost to develop a CAP is estimated to be \$50,000 to \$100,000, which is available in the proposed budget. The financial impact of the implementing such a CAP is not yet known. Staff expects to identify alternatives and their associated costs during the development of the CAP. CO₂ emissions associated with electricity delivered to Palo Alto residents in 2005 are estimated to be 145,000 metric tons for

sales of 996 million kWh. Annual total CO₂ emissions from electricity are expected to drop by 50% over the next several years from efficiency and renewable energy supply plans already in place.

If the City were to offset these emissions with tradable emission reduction credits, currently trading at \$4.10/metric ton on the Chicago Climate Exchange, the costs would be projected at approximately \$600,000 annually, equivalent to a rate increase of 0.06 ¢/kWh. Emissions associated with community-wide natural gas use in 2005 were 165,000 metric tons for sales of 31.4 million therms. The rate impact of a similar offset-based benchmark for natural gas would be \$675,000 (approximately 2 ¢/therm). Staff expects that a well-designed program can do much better than just buying offsets. Offset prices could easily rise in the future; at \$20/ton, the “offset benchmark” rate impact without any decrease in emissions would increase to \$2.9 million/year for electric sales to customers (0.3 ¢/kWh) and \$3.3 million/year for gas sales to customers (10 ¢/therm).

Guideline #8
Proposed New Guideline
<p>Climate Action Plan</p> <p>As part of the City’s commitment to develop and implement an action plan to reduce greenhouse gas emissions, develop and implement a Climate Action Plan relating to utility activities.</p> <ul style="list-style-type: none"> A. Consider all Mayor’s Green Ribbon Task Force utility-related recommendations. B. The plan shall be consistent with the California Municipal Utilities Association Greenhouse Gas Reduction Principles. C. Take actions to meet ICLEI Cities for Climate Protection Campaign milestones. D. Coordinate with and support Climate Action Plan efforts of other departments.

RESOURCE IMPACT

There is no direct resource impact as a result of the proposed changes to the LEAP Objectives and Guidelines. Implementation of various programs that meet the Objective and Guidelines will be brought to Council for approval and will have a resource impact at that time. Implementation plans to increase the renewable resource energy purchase target under Guideline #6 may increase retail rates, but will be within the parameters specified in the guideline, which has not increased from the existing rate impact limit of 0.5 ¢/kWh, equivalent to roughly \$3.35/month for an average residential bill. Mandated new solar program funding is projected to require an additional \$1.1 million per year for ten years, with an associated 0.1 ¢/kWh increase, or 65 ¢/month for an average residential bill. Increased efforts in cost-effective energy efficiency and local generation programs are expected to have no adverse impact on average electricity bills.

POLICY IMPLICATIONS

The proposed new LEAP Objectives and Guidelines support the Council-approved Utilities Strategic Plan, Energy Risk Management Policies, and Comprehensive Plan Goal N-9.

ATTACHMENT

- A. 2006 LEAP Implementation Tasks

- B. 2007 (New) LEAP Objectives & Guidelines.
- C. OLD LEAP Objectives & Guidelines

PREPARED BY: Karl E. Knapp, Senior Resource Planner, Utilities Department
Shiva Swaminathan, Senior Resource Planner, Utilities Department

APPROVED BY: _____
VALERIE O. FONG
DIRECTOR OF UTILITIES