THE CITY OF SAN DIEGO

MANAGER'S REPORT

Date ISSUED: July 5, 2001 REPORT NO. 01-137

ATTENTION: Committee on Rules, Finance and Intergovernmental Relations
Agenda of July 11, 2001

SUBJECT: Energy Conservation and Management Status Report No. 4

REFERENCE: Manager's Reports Nos.01-032, 01-062, 01-086, & 01-115

SUMMARY

THIS IS AN INFORMATIONAL REPORT. NO ACTION IS REQUIRED ON THE PART OF THE COMMITTEE OR THE CITY COUNCIL.

BACKGROUND

On January 17, 2001, Governor Gray Davis proclaimed that a State of Emergency existed in California due to a shortage of electrical energy. The Governor subsequently issued eight Executive Orders dealing with the energy emergency covering topics such as reducing energy consumption in retail businesses, initiating a statewide media awareness campaign, directing the California Energy Commission to expedite siting and permitting of new energy generation facilities, modifying power plant emissions rules, creating an energy conservation reward program and directing the California Independent System Operator (CAISO) to provide enhanced notice to the public before imposing rolling blackouts.

On March 22, 2001, CAISO issued its "2001 Summer Assessment" projecting that California would face significant energy supply shortages during June, July, August and September 2001. Those projections were based on a peak electrical energy demand requirement of 50,303 MW (peak load 47,703 MW, operating reserve 2.600 MW) during each of those months. For the same period, maximum energy supplies, including a factor for conservation measures were projected at 46, 656 MW in June (a deficit of 3,647 MW), 48,859 MW in July (a deficit of 1,444 MW), 49,055 MW in August (a deficit of 1,248 MW) and 49,637 MW in September (a deficit of 666 MW). CAISO projected that those levels of energy deficits could result in unscheduled power outages or rolling blackouts on up to 35 days for up to 260 hours during Summer 2001.

An initial report on the energy emergency and the status of the City's energy conservation and

management efforts was provided at the February 21, 2001 Rules Committee meeting. The Committee directed the Environmental Services Department to provide monthly status reports regarding the City's response to the energy emergency. This fourth status report is in response to those directions and also addresses specific questions raised during testimony at the Rules Committee meeting of June 6, 2001.

DISCUSSION

Summer Energy Outlook

During the month of June, peak energy demand levels were significantly below CAISO projections with statewide peak loads ranging from 30,000 MW to 38,000 MW rather than the 47,000 MW level projected in March. During June energy supplies were more consistent with CAISO's projections, with approximately 43,000 MW of generating capacity available on a daily basis. As a result, no Stage 3 Alerts or forced system outages occurred during June. The reduced demand levels were primarily attributed to cool weather and concerted conservation efforts by California residents, businesses and governmental agencies. Had those energy conservation efforts not been undertaken, and had peak energy usage increased by only 10%, there would have been a real potential for rolling blackouts.

An additional benefit of the reduced energy consumption in June was that California actually had surplus energy which the State was able to "wheel" to British Columbia in lieu of BC Hydro using its stored water resources to generate electricity for its needs. In exchange, California will receive hydroelectric power from British Columbia later this summer when warmer weather will increase our energy needs.

Three new major power plants, in Northern and Central California, will be coming on line by mid-July adding 1,379 MW to the State's generating capacity. A fourth plant, in Southern California, will begin operating in August adding 450 MW of generating capacity. Additionally, up to eight peaker plants, approved through the expedited energy emergency permitting process, will begin operating in July through September 2001 bringing to almost 4,000 MW the total of new power added this summer. As a result, more new electrical generating capacity will be brought on line this summer than had been brought on line in California in the prior 12 years.

Compared to the earlier predictions, the summer energy outlook is greatly improved. However, if because of this, the public believes the energy emergency is over and stops its highly effective energy conservation activities, and if temperatures in July and August are above average, or if one or more major power plants go off line due to breakdowns; then the potential for energy shortages and rolling blackouts will again be a very real threat. Conservation efforts are making a difference and need to continued for the remainder of the summer to insure rolling blackouts can be avoided or minimized.

New Energy Generation in the San Diego Region

The following table shows the status, as of May 25, 2001, of new electric energy generation projects in the San Diego region under the permitting authority of the California Energy

Commission (CEC). Projects not specifically named have been publically announced, but have not yet filed permit applications with the CEC. Projects that will add generation locally starting in July are RAMCO Phase I (49 MW) and Wildflower Larkspur (90 MW).

PROJECT NAME	STATUS	CAPACITY (MW)	LOCATION	ON-LINE
Otay Mesa Generating Facility	Financing	510	County San Diego, Otay Mesa	4/03
Wildflower Larkspur	Construction	90	City SD Otay Mesa	7/01
Calpeak Escondido	Financing	49	Escondido	9/01
Ramco Chula Vista	Construction	100	Chula Vista	9/01
Sempra Escondido	Permitting	500	Escondido	8/04
Calpeak Border	Permitting	49	City SD Otay Mesa	9/01
Padre Dam La Jolla	Permitting	50	East SD County	2/02
City Santee La Jolla	Permitting	50	City of Santee	3/02
Encino Replacement	Planned	500	SD County/Carlsbad	8/04
South Bay Replacement	Planned	500	SD County/ Not specified	8/04
Unnamed	Planned	170	SD County	4/02
Total Power		2,568		

Notification Process for Unscheduled Service Interruption (Rolling Blackouts)

San Diego experienced two unscheduled service interruptions in March 2001, which had an adverse impact on public safety and local businesses. In both instances, there was inadequate notice, less than 10 minutes, which did not allow public safety personnel to respond to intersections where traffic signals were inoperative or for businesses to shut down production processes in an orderly fashion. On May 22, 2001, in response to questions and concerns related to public safety during forced power outages, Council adopted a resolution urging Governor Gray Davis to issue an Executive Order directing the Independent System Operator to provide maximum notification of forced system outages to better protect public safety and to reduce the economic impact to local businesses.

On June 5, 2001, Governor Gray Davis issued Executive Order D-38-01 (Attachment 1) covering all of the areas of concern identified by the Council in its resolution of May 22, 2001. The Executive Order directs CAISO to: forecast to the public the potential for rolling blackouts 48 hours in advance and to update the forecast 24 hours in advance; provide frequent updates to the public during periods of forecasted electric emergency; and to notify utilities and public

safety agencies at least one hour in advance of any firm load curtailment.

Additionally, CAISO significantly improved the quality and usefulness of the information posted on its web site. Previously, the site showed only projected energy demand and actual energy usage that was updated at ten-minute intervals throughout the day. The site also showed the energy alert status, but only after the fact. The new Systems Conditions page shows projected energy demand for the current day, actual energy usage for the current day updated in ten minute intervals, projected demand for the next day and available energy resources for today. The page also includes the current energy alert status such as Warning, Stage 1, Stage 2, or Stage 3. This new format graphically displays the State's total energy status in a clear, concise and understandable manner. By simply looking to see if the supply and demand curves are projected to intersect, users can quickly determine if additional demand reduction efforts will be needed to prevent a rolling blackout or if they need to take action to prepare for a potential blackout at a specific time during the day.

City Energy Status and Actions

During the past month City staff in a number of departments have been proactive in reducing energy usage in City facilities through conservation and energy efficiency projects and in laying the groundwork for longer-term energy management initiatives in support of Goal 9 - Pursue Energy Independence. This discussion is not inclusive of all current City energy initiatives.

The Summer Energy Action Plan approved by Council on June 19, 2001 is being implemented City-wide. A brochure describing the Action Plan has been developed and was distributed to employees on July 6, 2001. An advanced distribution of the brochure was made to Mayor, Council, Manager and Department/Division heads and labor organizations before the brochure was widely distribution.

Transportation Department's Streets Division completed the conversion of 15,567 green and 504 red traffic signal bulbs from incandescent lamps to LED lamps on June 1, 2001. This one conservation measure is expected to reduce energy usage by 6.8 million kWh per year and reduce City energy costs by approximately $452,000 per year. The City received a $1,436,580 grant from the CEC to facilitate this project. On June 24, 2001, the Purchasing Department received three bids for power backup systems at 114 priority intersections. As approved by Council on May 15, 2001, Street Division will award a contract to the low responsive bidder, US Traffic IDC-Meyers. The project to be completed within 60 days of the award of the contract

In a joint project between the Park and Recreation Department and the Facilities Maintenance Division, the ten advanced technology skylights donated by So-Luminaire Daylighting Systems were installed at Golden Hill Recreation Center Gymnasium over weekend of June 30 - July 1, 2001. These skylights are projected to reduce electrical consumption, at this facility, by approximately 27,500 kWh per year.

Starting in mid-July, the circa 1963 lighting system on the 11th floor of CAB will be updated to provide better and more efficient lighting with energy conservation measures such as individual office light switches and occupancy sensors.

In CAB, the Facilities Maintenance Division is disabling 10 - 20% of the lighting fixtures in the building, starting in the lobby, to reduce energy consumption. Fixtures to be disabled are being carefully selected in coordination with the occupants of each floor to ensure public and employee safety and productivity are not impacted.

In the Ridgehaven Green Building, the City's most energy efficient office structure, department staff completed an evaluation of all lighting fixtures and targeted 80 fixtures to be disabled, which will reduce energy consumption by an estimated 3,000 kWh over the remainder of the summer.

On June 27, 2001, the City and County and San Diego Regional Energy Office jointly sponsored a San Diego Region Solar Exchange workshop on distributed electrical generation using photovoltaic arrays that attracted over 175 attendees. The workshop provided an overview of current incentive and financing programs for the installation of large and small -scale photovoltaic energy generation systems. Additionally, seven major photovoltaic panel manufactures and system integrators provided technical case studies and displays of equipment.

The Environmental Services Department is completing design and engineering for a 60 KW photovoltaic energy system for its new Miramar Place Operations Station and is scheduled to issue a Request for Proposal for this initial PV system by mid-July.

The Metropolitan Wastewater Department was awarded a $468,000 by the California Energy Commission to provide computer controls for ten emergency backup generators to allow them to be remotely turned on from Metro's control center in the event of a Stage 3 energy emergency. By activating these generators on demand from CEC, 2.2 MW of load can be reduced from the grid in minutes through additional generation and removing Metro pump stations from the grid. The new SCADA (Supervisory Control and Data Acquisition) replaces a variety of notification methods such as radio, fiber optics and phone calls to operators at the generation sites and greatly reduce time required to activate the generators. These types of arrangements, on a statewide basis, are one element in the CAISO's overall plans to avoid rolling blackouts this summer.

Public Education and Outreach

At the June 6, 2001 Rules Committee meeting, staff presented its conceptual approach to an energy education and awareness campaign consisting of a broad outreach to the public, internal information programs for City employees and a focus on small businesses and their unique needs. During June, substantial progress was made to take the outreach effort from concept to reality and, as a result of contacts related to those efforts, additional opportunities have arisen to further expand the City's outreach efforts. Some highlights of those efforts and opportunities are summarized below.

- The Senior Public Information Officer for energy, Marion Moss-Hubbard, started work with the City on Monday, July 2, 2001 and substantially enhanced the programs public outreach and education capabilities. The Energy Conservation and Management Division

is now fully staffed.

- An enhanced and expanded energy section is in production for the Environmental Services Department's display booth and will be completed in time for Summerfest on July 14.

- Development of content material for the demonstration energy portal site continues. The City has been invited to show the model at the Independent Contract Cities Conference at the Rancho Bernardo Inn on July 13 & 14 as an example of how technology can enhance public education and outreach programs.

- Through an invitation from SDG&E, the City will be able to send up to 20 City employees, directly involved in building operations and management, to a "Building Operators Certification Course." This national program focuses on learning how to operate equipment at peak efficiency and developing energy efficiency strategies. The course has received accolades and City staff will participate in its first San Diego offering.

- In collaboration with the County's Cool Zones Program, staff from the Library, Park and Recreation and Environmental Services departments are working to establish "Summer Safety Zones" for seniors in city libraries and park and recreation centers.

- City staff has developed a menu of 25 informational and educational energy tips that are currently being aired on City Access Channel 17.

- A printable signage kit on energy conservation will be available to City departments after July 9. The kit contains reminder stickers that encourage employees to use the energy saver feature on copiers at all times, turn off lights when leaving a room, set room thermostats at 78 degrees, turn off computer monitors when going to meetings and to turn computers completely off at the end of each work day, etc.

- In partnership with SDG&E, a special event (!PowerPaLooza! Taking Charge of the Energy Crunch!) is being proposed for late July. The event would be held at the Ridgehaven Green Building with a target attendance of 2,000 people. The goal of the many booths and activities would be to inspire and encourage energy conservation and efficiency, as well as to raise overall environmental awareness.

- A series of energy conservation posters are being developed for use in City facilities with distribution scheduled within the next 60 days. These posters will be designed to encourage long-term energy conservation practices by City employees.

- A video highlighting the Environmental Services Department's pilot Green Schools Program is in its final stages of production for airing on the City's cable access channel. This high school level program teaches students about energy conservation and management and the relationship of energy production to the environment. ESD is investigating the potential to expand the Green Schools Program to additional high

schools through public/private partnerships and grant funding.

- A video focusing on the energy conservation module of the Environmental Services Department's "Earth Camp" education program for elementary school children is in production for the City's cable access channel and as a tool to gain grant funding to expand the program so more children can participate.

Referrals

Jim Bell Proposal for Energy Self Sufficiency

At the June 6, 2001 Rules Committee meeting, Mr. Jim Bell presented his concept for developing and implementing a distributed energy generation system that would displace SDG&E as the primary energy supplier in the City of San Diego. The Committee directed staff to return with a report on the viability of the proposal in thirty days.

Mr. Bell's concept entails a multi-year, four-step process to be funded by the issuance of up to $4 billion in bonds by the City of San Diego. The bond proceeds would finance the development and installation of renewable energy systems such as photovoltaic generation systems on all residences, businesses and governmental facilities in San Diego. Through the use of net metering, energy bills would be reduced and those monies used to make the annual bond payments. After 15 years, when the bonds are paid off, residents and businesses would no longer have energy bills and SDG&E, or a competitively bid company, would be paid a small fee to maintain the grid and provide standby power.

Mr. Bell's concept for achieving regional energy independence is certainly visionary and entails many environmentally desirable features. It represents a total paradigm shift from the current energy production and distribution system and therefore should be extensively researched and evaluated before a City position to support such a concept could even be considered.

An initial review of the viability of the concept is not so favorable and raises a number of threshold questions that should be addressed before committing staff time to a technical review of the proposal. Those issues include:

1. Would this entail a loan of public funds for private purposes and would that be consistent with the City Charter?
2. What process would be required to approve issuing such a bond?
3. Would there be a guaranteed revenue stream for the annual bond payment over the life of the bonds? The concept is premised on net metering reducing or eliminating energy bills, yet the current legislative authority for net meeting has a 2003 sunset clause.

There are also some broad conceptual questions regarding how the system would operate that are important to the viability of the concept. The first one related to net metering implies that someone is available to purchase the excess energy produced by the individual distributed generation systems If the entire region consists of net metering customers producing more energy than they consume for portions of the year and consuming more than they produce during

the remainder of the year, who would be the purchaser of the surplus energy and the provider of the needed energy and how would payment for the energy work?

In the short term, it does not seem practical to assign staff resources to further evaluate the viability of this proposal, which would divert those resources from pursuing current energy conservation and efficiency projects. As a portion of the City's long-term energy strategy, doing an evaluation of a pilot or limited project that could be funded with other than City General Obligation bonds should be considered. In which case, I would recommend the next follow up report on this concept be scheduled for not less 120 days.

Ms. Pepper Coffey Request for City Participation in Energy Facility Permitting Cases

Ms. Coffey requested that the City respond as intervener in permitting of all new generation sites in the County and not just those within the City. She also wants the APCD to do cumulative impacts analysis of new generating facilities and to require Best Available Control Technology (BACT) on new facilities.

The Development Services Director has requested the CEC to notify the City of all power plants being located in the County so the City can have an opportunity to comment. While the limitations of the 21 day emergency permitting process provides a challenge in formulating comments and/or concerns regarding projects seeking permits, the City has commented as an intervener for the Larkspur and CalPeak projects. Additionally, the APCD did a cumulative emissions impacts of the RAMCO facility in Chula Vista (including both the 49MW existing facility and the 62 MW expansion), the Wildflower Larkspur facility (90 MW), the proposed CalPeak facility (49 MW) and the Otay Mesa facility (510 MW). The existing San Diego South Bay Power Plant was not included in this analysis since the background data used in the model includes the impacts of the South Bay Power Plant's operations. Based on the modeling results, the APCD concluded that the cumulative impacts of all plants in South Bay do not result in a violation of air quality standards.

City staff will comment on all future energy generation facility-siting cases in the region and will advocate for the use of BACT as a minimum standard for approval of a new facility.

Next Steps

With the adoption of the Summer Energy Action Plan, the next steps in the energy program will be to assist departments in implementing the plan and reducing energy consumption through the next three months and to transition from short term energy conservation projects to planning and implementing mid-term energy efficiency and renewable resource generation projects.

Specifically the focus will shift to reviewing new facility plans for energy efficiency consistent with Council Policy 900-14, evaluating existing facilities for cost effective energy efficiency upgrades to reduce energy consumption and seeking opportunities for grant financing to upgrade General Fund facilities.

During the first week of August, the Energy Committee of PTI's Urban Consortium will conduct

a three-day workshop in San Diego. The workshop participants will include the energy program managers from Seattle, Portland, San Antonio and Phoenix and will share in detail how their successful energy programs are funded and organized.

Finally, at its meeting on June 28, the County Water Authority Board of Directors considered a request from Mayor Dick Murphy to develop a 50 MW gas fired electricity generation facility. The Board directed their staff to return with a recommendation at the next Board meeting and to meet with representatives from major governmental agencies to explore development of a long-term energy strategy for the San Diego region. Agencies invited to participate in the discussion include the City, County, SANDAG, Navy and the San Diego Regional Energy Office. The initial meeting is scheduled from 2:00 PM to 4:00 PM on Wednesday, July 11, 2001.

Respectfully submitted,

Robert A. Epler
Interim Energy Management Administrator

Approved: George I. Loveland
Senior Deputy City Manager

HAYS/RAE

Attachment: Executive Order D 38 01

Attachment 1

EXECUTIVE ORDER D 38 01
by the
Governor of the State of California

WHEREAS, on January 17, 2001, I proclaimed a State of Emergency to exist due to the energy shortage in the State of California; and

WHEREAS, there is a high probability that the shortage of electricity will continue to cause blackouts throughout California, endangering public health and safety; and

WHEREAS, the threat of frequent and widespread blackouts requires a system to assure early and effective notice to the public and public safety agencies so that appropriate preparations may be taken to protect public health and safety, minimize economic disruptions and prevent harm to property and the environment;

NOW, THEREFORE, I, GRAY DAVIS, Governor of the State of California, by virtue of the power and authority vested in me by the Constitution and statutes of the State of California, do hereby issue this order to become effective immediately:

IT IS ORDERED that the California Independent System Operator shall, no later than June 15, 2001:

* forecast to the general public the potential for rolling blackouts 48 hours in advance and updated 24 hours in advance, based upon such factors as weather, outages, supply and demand;

* provide frequent updates to the public during periods of forecasted electricity emergencies; and

* notify utilities and public safety agencies at least one hour in advance of any firm load curtailment.

IT IS FURTHER ORDERED that each utility (the term "utility" includes investor owned utilities, municipally owned utilities and municipal utility districts) required to reduce its electricity output to customers shall notify the California Office of Emergency Services, the public, media and public safety agencies within its jurisdiction no less than one hour in advance as to the time and location where the anticipated blackout will occur, providing common geographical boundaries, grid or block numbers, maps or similar identifying information so as to be readily understood by the public and affected customers;

IT IS FURTHER ORDERED that each utility subject to the curtailment of electricity output to its customers shall maintain an updated listing available to the public, media, and its customers identifying all service areas designated for, or likely to experience, future blackouts, providing where possible the order in which future blackouts will occur;

IT IS FURTHER ORDERED that each utility subject to the curtailment of electrical power output to its customers shall provide each public safety agency within its jurisdiction, upon request, such information regarding the utility's service areas, grid and infrastructure as the public safety agency deems necessary to plan its responses to blackouts;

IT IS FURTHER ORDERED that the Office of Emergency Services, in consultation with the Public Utilities Commission, utilities, state and local public safety agencies, local governmental entities, and the media, shall develop a plan no later than June 15, 2001, providing specific direction for implementation of this Executive Order, including, but not limited to:

* specifying the information that the utilities are to provide to public safety agencies, the media and the public, and the form and procedures for providing such information;

* identifying and assuring the safety of utility customers who are particularly vulnerable to blackouts, such as hospitals, nursing homes, schools, buildings in excess of 80 feet in height, daycare centers; persons on life support and water pumping stations;

* providing public safety agencies with the identity and location of facilities exempted from blackouts;

* utilizing the State's emergency public information systems to provide timely and widespread notification to the public of imminent and potential future blackouts; and

* assuring the confidentiality of customer and business records.

The activities herein are authorized to be carried out pursuant to the Emergency Services Act, Government Code section 8550 et seq., as necessary to mitigate the effects of the emergency.

I FURTHER DIRECT that as soon as hereafter possible, this order be filed in the Office of the Secretary of State and that widespread publicity and notice be given to this order.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this the fifth day of June 2001.

/s/ Gray Davis
Governor of California