TO: HONORABLE CITY COUNCIL
FROM: CITY MANAGER DEPARTMENT: ADMINISTRATIVE SERVICES
DATE: MARCH 5, 2007 CMR:155:07
SUBJECT: CITY OF PALO ALTO'S ENERGY RISK MANAGEMENT REPORT FOR THE SECOND QUARTER, FISCAL YEAR 2006-2007

This is an information report and no Council action is required.

OVERVIEW

Staff has continued to purchase electricity and gas in full compliance with the City’s Energy Risk Management Policies and Procedures. There are no exceptions to report. The total market value for all gas and electricity commodities for the next 12 months is $26.7 million. The City’s credit exposure in electricity is $9.3 million for electricity, down from $11.1 million at the end of last quarter. The City has no credit exposure in its gas transactions or wind contracts. The market values of the hydro contracts for the next 12 months with Western and NCPA are $21.5 million and zero dollars, respectively. The City’s risk exposure from the yet-to-be-purchased portion of its electric and gas portfolio, know as Value at Risk or VAR, are well within current guidelines. Electricity supply reserves are fully adequate for the current risk profile. The gas reserves are considered adequate for the current level of risks although additional reserve levels are recommended.

BACKGROUND

The purpose of this report is to inform the City Council of the status of the City’s energy portfolio and transactions executed with energy suppliers as of the end of the first quarter of Fiscal Year 2006-07. The City’s Energy Risk Management Policy requires that staff report on a quarterly basis to Council on: 1) the City’s energy portfolio, 2) the City’s credit and market risk profile, 3) portfolio performance, and 4) other key market and risk information.

Table 1 and Table 2 below summarize the current position and exposure of the City with the electricity and gas commodity portfolios, respectively. Table 1 summarizes the electric portfolio in terms of forward purchase volumes, headroom (volume limit less current purchases volumes), and mark to market value (current market price less purchase price). Table 2 summarizes the gas portfolio in terms of transaction volume, market value, mark to market value and limits.
Table 1. Summary of Forward Electricity Positions and Exposures

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>Limit (Volume)</th>
<th>FY Ending 07 (12 months)</th>
<th>FY Ending 08</th>
<th>FY Ending 09</th>
<th>FY Ending 10</th>
<th>FY Ending 11</th>
<th>FY Ending 12</th>
<th>FY Ending 13</th>
<th>Violation</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>500,000</td>
<td>46,080</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Coral Power</td>
<td>400,000</td>
<td>144,145</td>
<td>117,025</td>
<td>138,515</td>
<td>55,225</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sempra</td>
<td>300,000</td>
<td>157,855</td>
<td>85,860</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>348,080</td>
<td>202,885</td>
<td>138,515</td>
<td>55,225</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>Unit: MWh</th>
<th>FY Ending 07 (12 months)</th>
<th>FY Ending 08</th>
<th>FY Ending 09</th>
<th>FY Ending 10</th>
<th>FY Ending 11</th>
<th>FY Ending 12</th>
<th>FY Ending 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td></td>
<td>453,920</td>
<td>500,000</td>
<td>500,000</td>
<td>500,000</td>
<td>500,000</td>
<td>500,000</td>
<td>500,000</td>
</tr>
<tr>
<td>Coral Power</td>
<td></td>
<td>255,855</td>
<td>282,975</td>
<td>261,485</td>
<td>344,775</td>
<td>400,000</td>
<td>400,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Sempra</td>
<td></td>
<td>142,145</td>
<td>214,140</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>851,920</td>
<td>997,115</td>
<td>1,061,485</td>
<td>1,144,775</td>
<td>1,200,000</td>
<td>1,200,000</td>
<td>1,200,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>12 Month Fwd Credit Exposure Limit</th>
<th>12 Month Fwd Credit Exposure Limit</th>
<th>Rolling 12 Months M2M Starting in January-07</th>
<th>Violation</th>
<th>Headroom</th>
<th>Total Credit Exposure Limit</th>
<th>Total M2M of Open Transactions Starting in January-07</th>
<th>Violation</th>
<th>Headroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>$ 30,000,000</td>
<td>$ (189,800)</td>
<td>$ 30,189,800</td>
<td>Violation</td>
<td>Headroom</td>
<td>$ 60,000,000</td>
<td>$ (189,800)</td>
<td>Violation</td>
<td>Headroom</td>
</tr>
<tr>
<td>Coral Power</td>
<td>$ 25,000,000</td>
<td>$ 2,444,154</td>
<td>$ 22,555,846</td>
<td>$ 45,000,000</td>
<td>$ 10,005,128</td>
<td>$ 34,994,872</td>
<td>$ (34,994,872)</td>
<td>$ 30,435,926</td>
<td>$ 30,435,926</td>
</tr>
<tr>
<td>Sempra</td>
<td>$ 15,000,000</td>
<td>$ (306,739)</td>
<td>$ 15,306,739</td>
<td>$ 30,000,000</td>
<td>$ (435,926)</td>
<td>$ 9,379,401</td>
<td>$ (9,379,401)</td>
<td>$ 125,620,599</td>
<td>$ 125,620,599</td>
</tr>
<tr>
<td>Total</td>
<td>$ 1,947,614</td>
<td>-</td>
<td>$ 68,052,386</td>
<td>$ 9,379,401</td>
<td>$ 125,620,599</td>
<td>$ 9,379,401</td>
<td>-</td>
<td>$ 125,620,599</td>
<td>-</td>
</tr>
</tbody>
</table>
# Table 2. Summary of Forward Gas Positions and Exposures

## Gas Counterparty Credit Exposure

**Summary As of 12/27/2006**

<table>
<thead>
<tr>
<th>NO VIOLATION</th>
<th>Total Open Starting in January-07</th>
<th>Open FY Ending/07 (starts in January-07)</th>
<th>FY Ending 07 (July to June)</th>
<th>FY Ending 08</th>
<th>FY Ending 09</th>
<th>FY Ending 10</th>
<th>FY Ending 11</th>
<th>12 Month (from Jan-07 to Dec-07)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transaction Volume</strong></td>
<td>MMBtu</td>
<td>4,487,390</td>
<td>1,228,710</td>
<td>2,264,844</td>
<td>1,874,540</td>
<td>1,246,140</td>
<td>138,000</td>
<td>-</td>
</tr>
<tr>
<td><strong>Transaction Costs</strong></td>
<td>$</td>
<td>33,531,733</td>
<td>$ 8,033,981</td>
<td>$ 14,439,194</td>
<td>$ 14,143,041</td>
<td>$ 10,405,961</td>
<td>$ 948,750</td>
<td>-</td>
</tr>
<tr>
<td><strong>Transaction Market Value</strong></td>
<td>$</td>
<td>31,642,294</td>
<td>$ 7,425,100</td>
<td>$ 9,446,111</td>
<td>$ 13,714,768</td>
<td>$ 9,528,970</td>
<td>$ 973,748</td>
<td>-</td>
</tr>
<tr>
<td><strong>Mark to Market</strong></td>
<td>$</td>
<td>(1,889,440)</td>
<td>$ (608,881)</td>
<td>$ (721,547)</td>
<td>$ (428,564)</td>
<td>$ (876,992)</td>
<td>$ 24,998</td>
<td>-</td>
</tr>
</tbody>
</table>

| ConocoPhillips | MMBtu | 960,000 | 960,000 | 960,000 | 960,000 | 960,000 | 960,000 | 960,000 | 960,000 |
| **Violation?** | $ | 25,000,000 | - | - | - | - | - | - | - |

| BP | MMBtu | 333,070 | 333,070 | 572,170 | - | - | - | - | 333,070 |
| **Violation?** | $ | 2,005,161 | $ 2,005,161 | $ 2,210,071 | - | - | - | - | 2,005,161.78 |
| **Transaction Value** | $ | 2,005,161 | $ 2,005,161 | $ 2,210,071 | - | - | - | - | 2,005,161.78 |
| **Mark to Market** | $ | 417,552 | $ 417,552 | $ 464,052 | - | - | - | - | 417,552 |
| **Mark to Market Limit** | $ | 45,000,000 | - | - | - | - | - | - | - |

| Duke | MMBtu | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 | 800,000 |
| **Violation?** | $ | 20,000,000 | - | - | - | - | - | - | - |

| Sempra | MMBtu | 1,756,370 | 445,230 | 950,300 | 705,000 | 468,140 | 138,000 | - | 814,230 |
| **Violation?** | $ | 1,280,000 | $ 606,000 | $ 960,000 | $ 960,000 | $ 960,000 | $ 960,000 | - | - |
| **Transaction Value** | $ | 12,354,279 | $ 5,108,937 | $ 5,583,323 | $ 973,748 | - | - | - | 5,170,934 |
| **Mark to Market** | $ | (45,607) | $ 298,341 | $ 48,137 | (310,254) | 24,998 | - | - | 150,014 |
| **Mark to Market Limit** | $ | 25,000,000 | - | - | - | - | - | - | - |

| Coral Energy | MMBtu | 2,397,950 | 450,410 | 735,630 | 1,169,540 | 778,000 | - | - | 1,002,180 |
| **Violation?** | $ | 2,735,630 | $ 8,605,539 | $ 5,923,847 | - | - | - | - | 6,667,518 |
| **Transaction Value** | $ | 17,282,854 | $ 3,700,935 | $ 8,605,539 | $ 5,923,847 | - | - | - | 6,667,518 |
| **Mark to Market** | $ | (1,426,280) | $ (382,841) | $ (555,836) | $ (476,701) | $ (566,738) | - | - | (892,217) |
| **Mark to Market Limit** | $ | 35,000,000 | - | - | - | - | - | - | - |
DISCUSSION

The total current market value of all of the City’s electricity and gas contracts for the next 12 months is approximately $26.7 million:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Market Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electricity</strong></td>
<td></td>
</tr>
<tr>
<td>Long Term Contracts</td>
<td>$9,379,401</td>
</tr>
<tr>
<td>Seattle City Light Exchange</td>
<td>$-696,576</td>
</tr>
<tr>
<td>Wind Power</td>
<td>$190,116</td>
</tr>
<tr>
<td>Landfill Gas Power</td>
<td>$113,203</td>
</tr>
<tr>
<td>Calaveras Hydro Power</td>
<td>$- 1,899,935</td>
</tr>
<tr>
<td>Western Hydro Power</td>
<td>$21,522,649</td>
</tr>
<tr>
<td><strong>Natural Gas</strong></td>
<td></td>
</tr>
<tr>
<td>Long Term Contracts</td>
<td>$-1,889,440</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$26,719,418</td>
</tr>
</tbody>
</table>

Electricity. As of September 30, 2006, the electric portfolio of long term contracts consisted of 43 monthly deliveries through December 2009. These deliveries are contracted under 14 separate transactions. Figure 1 below illustrates the sources of electricity supplies by month for the next 36 months. The City currently has purchased supplies of electricity totaling 517,000 MWh for delivery between January 1, 2007 and December 31, 2009. The average price for all of the fixed-price purchases was $47.46 per MWh, down from $48.10 last quarter. The forward purchases have been transacted with three approved counterparties: Coral Energy, Sempra Energy, and British Petroleum. In Figure 1, the Seattle City Light (SCL) volumes represent an “exchange” whereby Palo Alto supplies power to Seattle City Light in the winter months and Seattle provides power to Palo Alto during the summer months.

The mark to market (MTM) value represents the difference in price between the current market value of the contracted supply and the original contracted price. A positive MTM value indicates an increase in the value of the purchase, which would be realized only if the transaction was liquidated. While a positive MTM value represents an increase in value to the City, it also represents the City’s credit exposure with the supplier. In other words, should a counterparty default on delivery of supply, the City would need to purchase replacement energy on the open market when prices could be higher. A negative MTM represents the supplier’s credit exposure with the City.
The distribution of purchases by month and by counterparty is presented in Figure 2.
The MTM value is based on the current forward prices, that is, the prices at the end of the quarter for deliveries in the future. As shown in Figure 3, prices for deliveries in forward calendar years ended either unchanged or moved slightly downward at the end of the quarter.

Note: NP15 refers to North Path 15 which serves as the key delivery and market point for Northern California. As such it represents an aggregated price for the region.
The MTM value of the City’s forward transactions dropped slightly during the quarter from $11.1 million to $9.4 million. Figure 4 presents the MTM positions for each supplier by month.

**Figure 4. Forward Electric Mark to Market**

<table>
<thead>
<tr>
<th>Month</th>
<th>Sempra</th>
<th>Coral Power</th>
<th>BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-07</td>
<td>$(400,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May-07</td>
<td>$(200,000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jun-07</td>
<td>$-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jul-07</td>
<td>$200,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug-07</td>
<td>$400,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sep-07</td>
<td>$600,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct-07</td>
<td>$800,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov-07</td>
<td>$1,000,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hydro Power.** Based on forecasts provided by Western and the Calaveras Project and forward market projections, staff has calculated values for CPAU’s hydro contracts. It should be noted that for both Western and Calaveras, values are based on the expected volumes of delivery for the next 12 months. These values will change as actual volumes will differ from those predicted at this moment in time. At present, the 12-month value for deliveries from Western through November 30, 2007 is $23.8 million, down from $29.0 million last quarter. For Calaveras, the 12-month value of deliveries is $8.8 million, down from the previous quarter results of $10.9 million. The 12-month costs of Western total $7.5 million and those of Calaveras are $10.7 million. Therefore the 12-month mark to market value of the Western contract is $16.3 million, and for Calaveras is negative $1.9 million.

**Seasonal Exchange Contracts.** The sole seasonal exchange transaction in which Palo Alto is engaged involves Seattle City Light. Under this contract, which was signed in 1992, Palo Alto receives 9 MW from November through March, and sends 10 MW from June through October. The 12-month MTM value of this contract is negative $696,576 which means the market value of the contract is lower than the contracted price.

**Wind Power.** The City has two long-term contracts with Pacificorp Power Marketing (PPM) for supplies of wind energy. Wind power has different characteristics from a normal power purchase because it is not volumetrically firm. The amount Palo Alto receives directly relates to how strongly the wind blows. Based on historic meteorological conditions, Palo Alto expects to
receive approximately 58,000 Megawatt hours per year from the High Winds project and 74,800 MWh from Shiloh project. The later project began deliveries in June 2006. Based on these data, the current MTM of the wind power contracts combined is $190,000. The positive MTM value indicates that the contract price for the wind power is slightly lower than the current forward price for wholesale power.

**Landfill Gas Power.** The City has entered into a 23 year landfill gas contract with Ameresco to produce electricity from the gas produced at landfills in Santa Cruz and Half Moon Bay. The first of these plants is now operational, and produces over 12,240 MWh per year. The current 12-month MTM value of this contract is $113,200, which means that the City is purchasing this renewable energy for less than the market cost of wholesale power.

**Natural Gas.** As of September 30, 2006 the gas portfolio consisted of 143 open monthly deliveries through December 2009 comprising 50 separate transactions. The City currently has purchased supplies of gas totaling 4.49 million MMBtu for delivery between January 1, 2007 and September 31, 2009. The average price for all of the fixed-price purchases was $7.47 per MMBtu, up from $7.27 last quarter. The forward purchases have been transacted with three approved counterparties: Coral Energy, Sempra Energy and British Petroleum. This data is presented in Figure 5.

![Figure 5. Gas Forward Delivery Volumes](image-url)
Forward prices for gas slightly increased during the quarter for delivery in Calendar Year 2007 (CY 07). Prices at the end of the quarter for Calendar Year 2008 were unchanged from the prices at the beginning of the quarter (Figure 6).

![Figure 6. Forward Gas Prices](image)

The current MTM value of gas transactions is negative $1.9 million, a decrease of $0.8 million from last quarter. The MTM value by month and by counterparty is presented in Figure 7.
Figure 7. Forward Mark to Market for Gas

Figure 8 below presents the pool purchases made for each month over the next three years compared to estimated pool load. It illustrates the gas laddering purchasing strategy in relation to the total estimated load, showing the volumes purchased (hedged volumes), the volume to be used by market rate customers, and the amount of the pool to be purchased on the short-term market (pool exposed to market). Under the laddering strategy, CPAU purchases up to 100% of forecasted load for the upcoming 18 months, up to 75% of load for 19 to 27 months out, and up to 50% of load for 28 to 36 months out. As a result, the amount of pool exposure to the market is low in the near term, but increases further out in the future.
Value at Risk
The “riskiness” of the energy portfolio is measured through the “value at risk” (or VaR). The VaR measures the risk that adverse market conditions could force CPAU to use reserves to cover costs on future purchases over what is reflected in current rates. Specifically, VaR measures how much projected 12-month net revenue could change in one week due to a potential adverse market change. Staff use the VaR as one of the key measures of market price risk to CPAU.

In compliance with the Risk Management Guidelines, the Utilities staff and the Energy Risk Manager monitor the VaR level relative to the projected end-of-year supply Rate Stabilization Reserve (RSR) levels for both electricity and gas. Currently, the VaR for the electricity portfolio is 0.02% of the RSR, an increase from 0.01% last quarter. The VaR for gas moved below the 10% benchmark value for the first time in over 12 months, decreasing from 13% to 7.5% at the end of last quarter. The historic levels of the VaR values for electricity and gas are presented in Figure 9.
**Credit Risk**

To manage credit risk, staff reports on major credit rating agency’s (S&P and Moody’s) scores, and, in addition, the “estimated default frequency” (EDF) using the Moody’s KMV CreditEdge© system. The EDF is an estimated probability that a counterparty will default in the next 12 months. For example, a 0.2 EDF indicates a chance of 2 in 1000 that the firm will be in default in the time period. Thus a higher EDF represents a higher credit risk for the City. While the current risk management practices do not set a specific EDF upper limit, any counterparty with a value over 0.50 warrants careful and regular monitoring of its financial condition and outlook.

**Electricity.** CPAU’s electric supplier counterparty credit exposure and the supplier credit ratings are presented below. CPAU’s largest exposure, in excess of $11.8 million, is with Coral, a company rated A- by Standard and Poor’s. Coral is a wholly owned subsidiary of Royal Dutch Shell which is rated AAA, the highest rating given.
Table 1. Electricity Suppliers – Credit Exposure and Credit Ratings as of September, 2006.

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>Credit Exposure</th>
<th>S&amp;P Ranking</th>
<th>Previous Quarter Expected Default Frequency</th>
<th>Current Expected Default Frequency</th>
<th>Expected “Loss”</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>$(189,900)</td>
<td>AA+</td>
<td>.02</td>
<td>.02</td>
<td>$ 0</td>
</tr>
<tr>
<td>Coral</td>
<td>$10,005,128</td>
<td>A-</td>
<td>.05(^3)</td>
<td>.05</td>
<td>$2,001</td>
</tr>
<tr>
<td>Sempra</td>
<td>$(435,926)</td>
<td>BBB+</td>
<td>.03</td>
<td>.02</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>$ 9,379,401</td>
<td></td>
<td></td>
<td></td>
<td>$2,001</td>
</tr>
</tbody>
</table>

1 Coral is wholly owned by Shell PLC.  
2 Expected loss represents the product of the default rate in the next 12 months and credit exposure. This is an estimate of the 12-month average risk being carried by CPAU as a result of its forward contracts.  
3 This estimate is based on the credit ratings, and not the KMV model results.

The City’s current exposure to Coral is a reflection of a 5-year contract for electricity supplies at a cost of $37 per MWh. The current long-term price trends continue to render this contract very valuable, and therefore a credit risk. For this reason, staff will continue to monitor Coral’s credit condition very closely on an on-going basis.

Renewable Electricity. Palo Alto’s contracts for renewable “green” energy include both wind contracts with Pacificorp Power Marketing (PPM), discussed above, as well as contracts to convert landfill gas to electricity with Ameresco, Inc. Neither PPM (owned by Scottish Power) nor Ameresco are publicly traded and therefore KMV Credit Edge does not include them in its default reporting. The Risk Manager has used financial information provided confidentially by each of the two counterparties to estimate an Expected Default Frequency, which is statistically comparable to the EDFs reported for the other counterparties. The credit exposure and EDF ratings for these counterparties are presented below.

Table 2. Green Energy Credit Exposure and Credit Ratings as of September 30, 2006.

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>Credit Exposure</th>
<th>Previous Quarter Calculated Expected Default Frequency</th>
<th>Current Calculated Expected Default Frequency</th>
<th>Expected “Loss”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ameresco, Inc.</td>
<td>$ 113,203</td>
<td>0.50</td>
<td>0.50</td>
<td>$ 556</td>
</tr>
<tr>
<td>Pacificorp Power Marketing</td>
<td>$ 190,116</td>
<td>0.03</td>
<td>0.02</td>
<td>$38</td>
</tr>
</tbody>
</table>
Natural Gas. As Table 3 shows, the City has exposure to five counterparties totaling negative $1.9 million over the next 36 months. As with electricity, this reduction in market exposure is the result of the slow decline in the forward energy prices. All contracts are currently negative, therefore the City has no default risk currently in gas. The Table 3 below calculates the loss which the City would suffer should one of its gas counterparties default. This loss is calculated as the product of Estimated Default Frequency and the MTM value.

**Table 3. Credit Exposure and Default Ratings of Natural Gas Suppliers (December 31, 2006)**

<table>
<thead>
<tr>
<th>Counterparty</th>
<th>Credit Exposure</th>
<th>S&amp;P Ranking</th>
<th>Previous Expected Default Frequency</th>
<th>Current Expected Default Frequency</th>
<th>Expected Loss²</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP</td>
<td>$(417,552)</td>
<td>AA+</td>
<td>.02</td>
<td>.02</td>
<td>$0</td>
</tr>
<tr>
<td>ConocoPhillips</td>
<td>0</td>
<td>A-</td>
<td>.03</td>
<td>.04</td>
<td>$0</td>
</tr>
<tr>
<td>Coral¹</td>
<td>$(1,426,280)</td>
<td>A-</td>
<td>.05³</td>
<td>.05³</td>
<td>$0</td>
</tr>
<tr>
<td>Sempra</td>
<td>$(45,607)</td>
<td>BBB+</td>
<td>.08</td>
<td>.03</td>
<td>$0</td>
</tr>
<tr>
<td>Total</td>
<td>$(1,889,440)</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
</tr>
</tbody>
</table>

1 Coral is wholly owned by Shell PLC.
2 Expected loss represents the product of the default rate in the next 12 months and credit exposure. It is an estimate of the 12-month average risk being carried by CPAU as a result of its forward contracts.
3 This estimate is based on financial analysis of confidential data, and not the KMV model results.
4 In the beginning of this quarter, the gas transactions with Duke were transferred to Coral under an “Assignment and Novation” agreement.

Credit Quality of Suppliers. Overall, the City’s suppliers have continued to improve their credit quality. Figure 10 shows how the expected default frequency of CPAU’s current suppliers has declined (i.e., improved credit) over the past three years. As mentioned previously, Pacificorp Power Marketers is privately held and therefore an EDF is not issued by Moody’s KMV. The firm’s sole owner, Scottish Power, is used as a surrogate EDF. Similarly, Coral is the wholly owned subsidiary of Shell. The Coral EDF is calculated manually on a quarterly basis based on confidential financial information provided by the company. The estimate is also adjusted after consultation with credit analysts at Standard and Poor’s and Moody’s Investor Services.
The staff-calculated EDF point estimates for Pacificorp Power Marketers, Coral and Ameresco are included on the Figure 10.

**Figure 10. Expected Default Frequencies for CPAU Counterparties over last 9 months**

<table>
<thead>
<tr>
<th>Credit Condition</th>
<th>Best</th>
<th>Value As Of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coral</td>
<td>Fa2</td>
<td>0.02 07-Feb-07</td>
</tr>
<tr>
<td>Pacificorp</td>
<td>Fa2</td>
<td>0.02 07-Feb-07</td>
</tr>
<tr>
<td>Ameresco</td>
<td>Fa2</td>
<td>0.02 07-Feb-07</td>
</tr>
</tbody>
</table>

Plot: Values
Period: Custom
From: January 1, 2006
To: January 1, 2007
Currency: U.S. DOLLAR[USD]
Reserve Adequacy

A key premise to the City’s risk management practices centers on the adequacy of supply reserves with respect to the risks undertaken as a result of purchases of gas and electricity commodities. Table 4 below summarizes the current and projected supply reserve levels for gas and electricity as of June 30, 2006. The current formulas for calculating maximum reserve balances are 103% and 75% of purchase costs for electric and gas respectively. The minimum reserve levels are 50% of the maximum levels for both gas and electricity.

Table 4. Supply Reserve Levels for Electricity and Gas ($ Millions)

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Beginning Reserve Balance as of 6/30/06</th>
<th>Budgeted Reserve Guideline Range for FY 06/07</th>
<th>Unaudited Actual Reserve Balance as of 06/30/07 FY (06-07)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>$ 64.5</td>
<td>$ 28.5</td>
<td>$ 56.9</td>
</tr>
<tr>
<td>Gas</td>
<td>$ 2.8</td>
<td>$ 10.0</td>
<td>$ 20.0</td>
</tr>
</tbody>
</table>

* Accounting activity figures to date reflect what has been booked into the City’s accounting system (SAP). These figures are preliminary until outside auditors have completed their review and the CAFR is produced. There could be significant changes to the RSR balances based on year end adjustments that have not as yet been booked. Those adjustments could include additional revenue or expense, the calculation of gain or loss on investment and the accrual of previously unrecognized liabilities for worker compensation, general liability and retiree medical benefits. The amount of these adjustments is unknown at the time of this report.

The current reserves for electricity are well above the minimum and well above credit, regulatory and other risks for the 12 months moving forward. Total risks associated with the electric supply reserve for the next 12 months include $5.0 million for credit reserves (using best practice of 50% of largest single exposure), $14.3 million for hydro risk, $0.4 million for market risk of the short positions in the next 12 months, and $4.4 million for possible regulatory and other risks. These risks total $24.1 million.

With regard to gas, the current projected reserve levels of $3.7 million are below the minimum level of $10.0 million as set by current policy. Reserve levels are adequate for the current risks they are intended to mitigate, especially in view of current price behavior. Total risks associated with the gas supply reserve include $0.4 million for credit reserves, $0.8 million for unhedged commodities in the next 12 months, and $0.5 million for possible regulatory and other risks, for a total of $1.7 million. However, market prices for gas could quickly increase, and credit risk would therefore increase rapidly. It should be noted that any draws on the Supply Reserve can not be supported by the Gas Distribution Fund, as the current end of year balance is currently projected to be negative $1.3 million. It should be noted that changing market dynamics,
international events and other factors outside the City’s control can have a significant and adverse impact on the adequacy of reserves for both gas and electricity over a short timeframe.

Perhaps more fundamentally, the manner in which the budgeted reserve ranges are calculated can be improved to meet industry best practices. Staff is reviewing alternatives for developing reserve range methodology which are more tightly aligned with the risks that those reserves need to cover.

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Director, Administrative Services

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ATTACHMENTS  
A) Consolidated Mark to Market Report of All Open Gas Transactions as of December 31, 2006
B) Consolidated Mark to Market Report of All Open Electric Transactions as of December 31, 2006