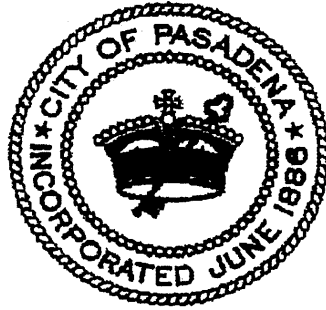


Attachment E:

PASADENA WATER & POWER



**RISK MANAGEMENT POLICIES, PROCEDURES
AND CONTROLS
FOR PARTICIPATION IN THE CAISO MARKET**

Approved on: 04/26/2012

By:

Energy & Credit Risk Management Committee

Signed:

Phyllis Currie

Phyllis Currie, PWP General Manager / Chairperson

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I. Overview:

The purpose of this document is to provide the risk management policies, procedures and controls for all Pasadena Water and Power's (PWP's) market activities with the California Independent System Operator (CAISO).

In compliance with the Federal Energy Regulatory Commission (FERC) Order 741, credit reforms in the organized wholesale electric market, CAISO has required all Market Participants that transact and/or provide services within CAISO to document their risk policies, procedures and controls that clearly state the range of risks to which the Market Participant is exposed by their participation in the CAISO Market. PWP is a "Market Participant" and it participates in the CAISO Market for energy, transmission and ancillary services. PWP is also a Participating Transmission Owner (PTO) in the CAISO control area and has transferred to the CAISO's operational control of various transmission facilities and Entitlements. In addition, PWP is a Scheduling Coordinator under the CAISO Tariff and a load serving entity in the CAISO Market.

II. Compliance

1. Risk Policies

PWP has and maintains an Energy and Credit Risk Management Policy ("Risk Policy") approved by the City Council. The Risk Policy provides the governing principles for PWP's energy risk and credit management program. PWP is committed to meeting CAISO's minimum participating criteria for market participation and will ensure that it meets the minimum participation requirements set forth in the CAISO Tariff and the Business Practice Manual ("BPM") for Credit Management. PWP will only engage in market activities with the CAISO that are within its financial capability. PWP risk policy clearly identifies and documents the range of risk to which PWP can be exposed through its participation in the CAISO market. Upon request and within five (5) business days, PWP will make available to CAISO its risk management policies, procedures, and controls, including, but not limited to information and documents relating to the liquidity of its financial resources and settlement procedures.

PWP employees and agents are only approved to transact within PWP's trading authority policy, and PWP has credit and trading control procedures in place to monitor its credit and market risks with respect to activities with CAISO. PWP's General Manager has the authority from the City Council to execute energy transactions including power, natural gas and associated products and services to meet PWP's load requirements, and to enter into agreements for purchases, sales and exchanges. In addition, the General Manager has the authority to certify and attest to PWP's compliance as it relates to its market activities with the CAISO, participate in auctions of Congestion Revenue Rights (CRRs), and enter into agreements including, but not limited to, the CRR Entity Agreements.

2. Congestion Revenue Rights Market

CRRs are financial instruments created by the CAISO to provide market participants a vehicle to mitigate the market price risk associated with transmission congestion costs in the CAISO's Locational Marginal Pricing (LMP) energy structure. Each CRR is for a transmission path defined by a source-sink (beginning – end) pair, a megawatt quantity, and a term consisting of a season or a month and a time-of-use (on-peak or off-peak). CRRs are settled as the product of the megawatt quantity times the marginal cost of congestion at the sink location minus the marginal cost of congestion at the source location in the day-ahead market. Only the LMP congestion component from the day-ahead market is used to determine the settlement of CRRs. Allocated CRRs, create an obligation which can have a positive or negative value and must be selected carefully. CRRs entitles the holder to receive (or pay) the value of transmission congestion between specific nodes, acting as an economic hedge against transmission congestion charges. CRRs, like physical transmission, provide protection against unexpected cost increases due to volatile market prices at different locations. CRRs are a form of insurance and they may ultimately cost more, or less, than the uncertain cost exposure that is being covered or "hedged".

All CRRs transactions are subject to PWP's Energy Risk Management Policy that limits purchases to the amount needed to deliver PWP's resources to load, and limits sales to disposition of excess CRRs capacity. CRRs transactions are limited to those necessary to hedge PWP's load and resources. No speculative purchases or sales are allowed.

2-1. CRRs Allocation Process

The CAISO allocates CRRs through an annual and monthly allocation process to Load-Serving Entities (LSE) including PWP at no cost based on historical and forecasted retail customer load requirements and distributed on a pro rata basis. The CAISO also makes CRRs available for purchase through an annual and monthly auction at close bid price.

Annual Allocation:

The Annual CRR process is conducted once a year for the following calendar year. The process typically takes place in the August through November timeframe. The CAISO conducts an annual CRR allocation: (i) once a year for the entire year for seasonal CRRs; and (ii) once a year for the ten-year term of long term CRRs. The annual CRR allocation releases seasonal CRRs and long term CRRs for four seasonal periods. The annual process also includes a long-term tier in which LSE nominations are for long-term contracts held for terms of 10 years. Within each annual CRR allocation process the CAISO performs distinct allocation processes for each on-peak and off-peak time-of-use specification. The CAISO constructs Load duration curves by season and time-of-use periods for the annual CRR allocation process for each LSE based on the LSE's submission to the CAISO of its historical hourly Load data for the prior year, for each Load Aggregation Point (LAP) within which the LSE serves Load.

Under the annual allocation process, CRRs are allocated in three tiers. In Tier 1, an LSE may nominate in the Priority Nomination Process (PNP) a maximum of fifty percent of its

Adjusted Load Metric, minus any previously allocated Long Term CRRs that are valid for the term of the CRRs being nominated. Under the Tier Long Term, an LSE may nominate long term CRRs from any of the seasonal CRRs allocated in the PNP up to the maximum of fifty percent of its Adjusted Load metric, minus the quantity of previously allocated long term CRRs that are valid for that year. Eligible entities may, in the final year of a long term CRR nominate the identical CRRs source, CRRs sink, and megawatt terms of the expiring long term CRRs in the PNP conducted that year.

In Tier 2 of the annual CRRs Allocation, the CAISO will allocate seasonal CRRs to each LSE up to two-thirds (2/3) of its seasonal CRR eligible quantity for each season, time-of-use period and CRR sink, minus the quantity of: (i) CRRs allocated to that LSE in Tier 1, and (ii) long term CRRs previously allocated to it that are valid for the CRR term currently being allocated. In Tier-3 of the annual CRRs Allocation, the CAISO will allocate seasonal CRRs to each LSE up to one hundred percent (100%) of its seasonal CRR eligible quantity for each season, time-of-use period and CRR sink, minus the quantity of: (i) CRRs allocated to that LSE in Tiers 1 and 2, and (ii) long term CRRs previously allocated to that eligible entity that are valid for the CRRs term currently being allocated.

Monthly Allocation:

The monthly CRR Allocation consists of two tiers of allocations for each time-of use-period (on-peak and off-peak). The monthly CRR Allocation distributes monthly CRRs and allows an LSE to nominate CRRs up to one hundred percent (100%) of its monthly CRR eligible quantity. Each month, LSEs will submit hourly Load forecast data for the relevant month. Each month the CAISO will use the LSE's submitted hourly Load forecast data for the relevant month to calculate two Load duration curves (one on-peak and one off-peak Load duration curve for the applicable month) to form the basis for monthly allocations for each CRR sink in which the LSE serves Load.

In Tier 1, each LSE may nominate monthly CRRs up to one-hundred percent of the difference between its monthly CRRs eligible quantity and the total of any Seasonal CRRs allocated in the annual CRRs allocation and any holdings of long term CRRs that are valid for the month and time-of-use of the CRRs being nominated. In Tier 2, each LSE may nominate monthly CRRs up to one hundred percent of the difference between its monthly CRR eligible quantity and the total of any Seasonal CRRs allocated in the annual CRR allocation and any holdings of long term CRRs that are valid for the month and time-of-use of the CRRs being nominated, minus the quantity of CRRs allocated to that LSE in Tier 1 of the current monthly CRR allocation.

PWP's Allocation:

The CAISO has allocated to PWP annual and monthly CRRs and long-term CRRs related to PWP's load and long-term resource entitlements. PWP will nominate, receive, and utilize CRRs offered by the CAISO to help mitigate the variability of transmission congestion costs. In the event that CRRs are not available on the predetermined paths, alternate points will be nominated which have similar characteristics in order to hedge the Congestion costs of PWP's resources serving Load.

PWP Power Supply Group is responsible for preparing PWP for the annual and monthly allocation process, reviewing current and future resource contracts and identifying needed transmission paths. The Power Supply Group is also responsible for updating and posting the Adjusted Load Metric and all CRRs held by PWP on the Power Supply Group's shared

directory. In addition, the Power Supply Group is responsible for scheduling PWP's resources in a manner that will utilize available CRRs to create an effective hedge and minimize its exposure to variability in transmission congestion costs between the delivery points for the long term resources relative to its load aggregation point.

2-2. CRRs Auction Process

The CAISO conducts a CRRs Auction on an annual and monthly basis corresponding to and subsequent to the completion of each CRRs Allocation process, and prior to the start of the period to which the auctioned CRRs will apply. The CRR Auction will release only those CRRs that are feasible given the results of the corresponding CRR Allocation. CRRs released in a CRR Auction will be indistinguishable from CRRs released in the corresponding CRR Allocation for purposes of settlement and secondary trading.

PWP is authorized to participate in CRRs auctions or purchase CRRs through other means to the extent they are needed to hedge the congestion risk related to its physical transactions as a load serving entity. PWP may bid to purchase CRRs Obligations, and may sell CRRs, through the CAISO's annual and monthly CRRs Auctions. PWP will continue to ensure that its CRRs positions, considering both the level and pathways, are proportionate to and appropriate for hedging its physical transactions as a load serving entity.

Presently, PWP is not planning to participate in the CRRs auction. Should PWP find it necessary and economical to participate in the CRRs auction, PWP will post the required collateral in the form of cash, letter of credit or surety bonds. The collateral for monthly CRRs action is currently \$100,000 and \$500,000 for annual auction. The process for posting collateral will be as follows:

1. The Assistant General Manager Power Supply will determine the need for participation in the CRRs auction and request for the required collateral.
2. The request for collateral will be reviewed by the Energy Risk and Credit Management Committee and/or General Manager.
3. Approved requests will be submitted to the City Treasurer and Finance Director for posting of collateral with the CAISO.

2-3. CRRs Valuation

PWP has adopted the Governmental Accounting Standards Board (GASB) Statement No. 53, Accounting and Financial Reporting for Derivative Instruments (GASB 53). Under this Statement, CRRs may be considered a derivative if it does not meet the normal purchase and normal sales exception. PWP has determined that its participation in the CRRs market meets the normal purchase and normal sales exception. As such, PWP policy is to apply the normal purchase and normal sales exception as appropriate.

PWP has the ability to periodically value its CRRs positions and will ensure that its energy portfolio is performing adequately to hedge congestion related risks. PWP will review and value all CRRs in its energy portfolio on a quarterly basis. The valuation exercise will be conducted by PWP or its agents. PWP will mark-to-market its Congestion Revenue Rights

positions based on data from the most recent CRR auction. The mark-to-market is dependent on pricing availability. The profit/loss is the market value minus the cost. The cost of allocated CRRS is the auction value at the time of allocation. The market value is dictated by the forward prices as available from the CAISO web site. If forward pricing is not available, CRRs will be marked at cost. The mark-to-market function will be performed by PWP Middle Office which is independent of the Front Office.

III. Minimum Capitalization

PWP has more than \$1 million in tangible net worth or \$10 million in total assets that is required for market participation in the CAISO, and is committed to maintaining and preserving its financial condition to meet CAISO financial requirements as may be required for market participation from time to time. PWP latest audited financial reports are available on its website and PWP will continue to post its annual audited financial reports on its website.

IV. Settlements Procedures

In compliance with FERC Order 741, CAISO settlement time frames, and billing and payment cycle have been shortened to better mitigate credit risks. Initial settlement statements are published on trade date (T+3B), based on estimated settlement quality meter data. The following invoice is published on a weekly basis on every Wednesday. To the extent the CAISO is a holiday, invoices are published on the next business day. Payment is due no later than the 4th Business day following the invoice before 10 am. Failure to make payment on timely basis may result in financial penalties, sanctions to market participation or both. At T+12B the first recalculation statement are published with the opportunity to submit disputes with a deadline of T + 26B. Late disputes are not be accepted. Disputes after T +26B may only dispute incremental change on the T + 55B recalculation statement. PWP and its agents have implemented systems and processes to comply with the reduced timeframes. Invoices are downloaded using the ISO web portal, processed and approved with the correct accounting codes and sent to City Finance for payment and wire transfer by City Treasury. Reminders are sent out weekly to ensure timely payment. PWP will continue to validate invoices and make timely payments as required and keep abreast of CAISO settlement procedures.

V. CAISO Tariff – Training

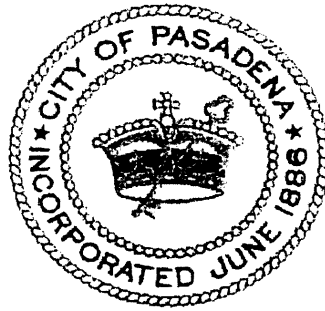
PW's staff and agents engaged in market activities with CAISO on behalf of PWP have received appropriate training on CAISO Tariff and are authorized to transact on behalf of PWP as documented in PWP's trading authority policy. PWP will stay abreast of CAISO training requirements as specified in CAISO Tariff and ensure that its staff and agents engaged in market activities with CAISO on its behalf have satisfied all applicable training requirements as specified in CAISO Tariff.

VI. Annual Attestation

PWP's General Manager has the full authority to represent PWP on all market activities with CAISO and is responsible for completing and submitting CAISO's "Officer Certification Form" on an annual basis or as may be required. A copy of the current CAISO Officer Certification Form is provided in Appendix A.

Appendix A - CAISO Officer Certification Form

PASADENA WATER & POWER



**COUNTERPARTY CREDIT
EVALUATION AND PROCEDURES
MANUAL**

Approved on: 2/27/2014

By: 
Phyllis Currie, General Manager

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I. Objective:

This Counterparty Credit Evaluation and Procedures Manual is designed to facilitate the approval and monitoring of counterparties with which Pasadena Water & Power (PWP) transacts with in the wholesale energy market. PWP has been authorized by the City Council to operate in the wholesale energy market in order to:

1. Assure reliable power to PWP customers;
2. Provide access to potentially more economically efficient power and gas resources,
3. Provide flexibility to optimize PWP's operating assets.

PWP is only authorized to participate in the wholesale energy market with counterparties deemed creditworthy and to limit counterparty credit risk to acceptable levels as established by PWP's Energy and Credit Risk Management Policy (Policy).

The Energy Risk Manager is responsible for conducting the counterparty credit evaluation process described herein, culminating in the assignment of an internal credit rating for the subject counterparty. The Energy Risk Manager shall ensure that each credit review process is objective and independent.

II. Counterparty Approval Process

1. Existing Counterparties

The current list of approved counterparties and their respective credit limits is provided in Attachment A. These counterparties are approved to transact with PWP in the wholesale energy market, subject to the continuous monitoring process described herein.

The approved counterparty list shall be provided to transacting personnel and authorized agents, added to PWP's Energy Trading and Risk Management (ETRM) system and updated on an as needed basis.

2. New Counterparties

It is the responsibility of the Power Supply Business Unit (PSBU) to provide to the Energy Risk Manager written recommendations for all new counterparties. It is also the PSBU responsibility to collect relevant information detailed in **Attachment B** from potential counterparties and submit the required information along with its recommendation to the Energy Risk Manager for review and evaluation.

Before PWP transacts with any new counterparty, the Energy Risk Manager shall determine the creditworthiness of the subject counterparty utilizing the evaluation process outlined herein. During a system emergency, the General Manager may execute a limited number of short-term transactions with non-approved counterparties within the Policy guidelines. The General Manager may also authorize a transaction with a non-approved counterparty, provided that the counterparty has

adequate credit quality or has provided credit enhancements instruments required as a result of the evaluation process.

3. PWP Grading System

All existing and new counterparties will be evaluated using PWP's proprietary grading system. This grading system evaluates counterparties, assigns grades ranging from 0 to 100 points, and ranks counterparties on a scale of 1 to 4. The grading system is designed to maintain and/or provide a consistent and equitable internal rating process, as well as a basis for counterparty credit limit setting. Counterparties will be evaluated and assigned points in the areas of qualitative analysis, rating analysis and financial statement analysis as outlined below. To be deemed eligible to transact with PWP in the wholesale energy market, counterparties must obtain at least 71 points.

- Qualitative Analysis: 30 points
- Rating Analysis: 30 points
- Financial Statements Analysis: 40 points
- Total 100 points

3-1. Qualitative Analysis (30 points)

The Energy Risk Manager will conduct a strategic assessment of each counterparty through an analysis of the counterparty's business model, its exposure to its customers, suppliers, strategic and competitive positioning in its main markets, and the state of rivalry within those markets. In addition, the Energy Risk Manager will evaluate the counterparty's risk management practices, policies and procedures to determine the effectiveness of its risk mitigations programs.

In addition, the Energy Risk Manager will perform a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis to determine the sustainability of the counterparty's business model and its ability to maintain ongoing viable business operations. The Energy Risk Manager will also conduct a thorough analysis of the counterparty suppliers' payments history to assess the subject the counterparty's performance in honoring its obligations when they become due.

The Dun & Bradstreet "Comprehensive Report Reference Guide" or "Credit Risk Monitor" or "SNL" and/or an equivalent financial and risk management source/system will be used as a basic source of information to perform the analyses.

Under this section, the counterparties will be evaluated in the following areas and assigned points up to a maximum of 30 points as detailed below:

- **Quality and Reputation of the Management** **5 points**
The counterparty's management team will be evaluated in the following areas: Depth and experience of key management staff, regularity of strategic and financial plan development, solid grasp of the industry issues and a clear long-term vision, adherence to specific financial goals, and extensive knowledge and understanding of customers' needs and competitors.
- **Soundness and sustainability of business model:** **5 points**

The Energy Risk Manager will evaluate the strategy that the management has set forth in order to sustain its competitive position within the industry.

- **Trading and payment history of the counterparty:** **5 points**
Using the payment history provided by Dun & Bradstreet Report or Credit Risk Monitor or equivalent sources, the Energy Risk Manager will determine the counterparty's ability to fulfill its obligations with respect to its suppliers and customers.
- **Soundness of risk management practices and policies:** **5 points**
Based on the information available on the counterparty from Standard & Poor's , Fitch , Moody's, Credit Risk Monitor Report or equivalent sources, the Energy Risk Manager will evaluate the soundness of the risk management practices and policies of the counterparty to determine their appropriateness.
- **Sources of volatility of Cash Flows:** **5 points**
The Energy Risk Manager will analyze the stability and sustainability of the sources of cash flows and determine the impacts of the counterparty business cycle on those sources. The objective is to estimate the counterparty's ability to sustain difficult business periods without failing to honor its obligations.
- **Availability of capital resources that may be used to absorb losses:** **5 points**
The Energy Risk Manager will ensure that the counterparty has adequate reserve to honor its financial obligations for at least two years in case it falls short in operating cash flows.

3-2. Rating Analysis (30 points)

Under this section, counterparties will be evaluated and assigned points up to a maximum of 30 points based on their ratings as follows:

- AAA rating counterparty: 30 points
- AA rating counterparty: 25 points
- A rating counterparty: 20 points
- BBB rating counterparty: 15 points

In addition to the required information in **Attachment B**, steps will be taken to collect information pertaining to the counterparty's trade and vendor references including contact names, addresses, and telephone for evaluation. Also, the counterparty's actual and historical ratings, probabilities of default, industry and market information as it relates to the counterparty's current activities, strengths and/or weaknesses, and major lending and vendor relationships will be evaluated.

Each counterparty will be requested to provide at least two ratings from at least two nationally recognized rating agencies, and meet at least an investment grade rating of BBB-. If counterparty is not a publicly traded company but is a subsidiary of a publicly traded company, the counterparty will be required to furnish the parent company's rating information along with documents obligating the parent company such as parent or corporate guaranty.

For counterparties without publicly traded debt, the ratings used shall be those of their bank loans. The Energy Risk Manager, in this case, will collect information on the ratings assigned to the counterparty's bank loans or compute an implied rating based on the counterparty's financial information. The Energy Risk Manager shall ensure that approved counterparties have a minimum credit rating of BBB⁺. In any case, counterparties with a rating below the BBB⁺ threshold shall be eliminated on the grounds of insufficient creditworthiness. The ratings provided by the counterparties will be checked against those reported by Standard & Poor's rating publications, Credit Risk Monitor reports, and counterparties' banks.

3-3. Financial Statements Analysis (40 points)

The objective of the financial statements analysis is to provide an in-depth analysis of the financial performance of the counterparty and to determine the long-term viability of the counterparty in terms of its ability to honor its future obligations with respect to PWP. This analysis uses quantitative measures to convey the short and long-term financial picture of the counterparty.

Under this section, counterparties will be evaluated using the criteria detailed in the table below and assigned points up to a maximum of 40 points.

	Ratios and Formulas	Score	Gas Industry Ratios	Power Industry Ratios
Short-term liquidity (20 points)	$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$	7	0.76	0.57
	$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$	8	0.98	1.04
	$\text{Collection Period} = \frac{\text{Account Receivable}}{\text{Credit Sale per day}}$	5	45 days	45 days
Profitability (10 points)	$\text{Net margin} = \frac{\text{Net Income}}{\text{Sales}}$	3	0.11	0.07
	$\text{Operating margin} = \frac{\text{Operating Income}}{\text{Sales}}$	4	0.17	0.15
	$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Equity}}$	3	0.109	0.109
Leverage (10 points)	$\text{Leverage} = \frac{\text{Total Liabilities}}{\text{Equity}}$	3	1.84	2.65
	$\text{Capital structure} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$	3	0.37	0.39
	$\text{Interest coverage} = \frac{\text{Operating Income}}{\text{Interest Expenses}}$	4	2.80	4.26

Definitions of the terms used:

- **Short-term liquidity:** The counterparty’s ability to meet its short-term obligations without preventing it from financing its ongoing operations working capital needs.
- **Profitability:** The ability of the counterparty to manage effectively its operating assets to achieve a return on invested capital.
- **Leverage:** The ability of the counterparty to manage its debt. A higher debt ratio is synonymous with a riskier counterparty. As such, some credit enhancements may be required.

3-4. PWP Internal Ranking

Counterparties shall be ranked based on their total score from the analyses performed under Sections 3-1, 3-2 and 3-3 above, and classified using PWP’s ranking scale presented below:

PWP Ranking Scale	Score Range	Creditworthiness
1	91 – 100	Premium
2	81 – 90	High
3	71 – 80	Appropriate
4	60 – 70	Marginal

Counterparties with PWP’s ranking scale of 1 to 3 shall be approved to transact with PWP in the wholesale energy market.

Counterparties with PWP’s ranking scale of 4 shall be required to provide the appropriate credit enhancements in order to be upgraded to at least a ranking scale of 3. In this case, the Energy Risk Manager shall request for the appropriate credit enhancements such as cash collateral or guarantee and surety bonds and/or a letter of credit from a reputable financial institution to minimize PWP counterparty credit exposure.

Within five (5) business days of receiving a written request from the Power Supply Business Unit to evaluate a potential counterparty, the Energy Risk Manager will evaluate the potential counterparty. Upon completion of the evaluation process, the Energy Risk Manager will prepare a report for the General Manager indicating the results of the detailed assessment and make a recommendation to the General Manager to approve or not approve the subject counterparty based on the assigned ranking derived using the evaluation methodology outlined herein.

III. Authorized Credit Limit Determination Process

Once the counterparty’s creditworthiness has been established, a credit amount will be given to the counterparty based on the counterparty’s tangible worth. The maximum credit amount that can be given to the counterparty will be equal to or less than 5% of the counterparty’s tangible net worth (Assets - liabilities-all intangibles). If the counterparty is a municipal or public organization, the maximum credit amount that can be given to the counterparty will be equal to 5% of the counterparty’s average free cash flow for the prior two/three years. In any event, the maximum credit amount that can be given to any counterparty for transactions with PWP cannot be greater than

\$3,000,000 for power and/or natural gas. The counterparty credit amount is the sum of net account receivables plus mark-to-market plus counterparty credit at risk plus applicable collateral.

In addition, PWP’s total aggregate counterparty credit exposure to all counterparties will not be more than \$10,000,000. The total aggregate counterparty credit exposure is defined as the sum of net account receivables plus mark-to-market plus counterparty credit at risk plus applicable collateral for the energy portfolio taking into consideration the correlation between the associated energy products such as power and natural gas.

Both the counterparty credit amount and the aggregate counterparty credit exposure are subject to change by the General Manager/Risk Management Committee.

The maximum credit limit for counterparties for power and gas shall be driven by their respective assigned rating as shown below. The maximum credit limit is the total exposure to any counterparty during normal operating conditions. These limits may be exceeded as necessary to meet retail load, minimum take, and/or energy, capacity and fuel scheduling obligations during system emergency pursuant to Section 4.2 of the Policy.

Rating Scale	Limit as % of Maximum Credit Limit	Maximum Credit Limit (\$) (Power)	Maximum Credit Limit (\$) (Gas)
1	90 – 100	3,000,000	3,000,000
2	75 – 90	2,000,000	2,000,000
3	60 – 75	1,000,000	1,000,000
4	0	0	0

The credit limits above shall be set only for transactions with terms less than or equal to one year.

For transactions with a term longer than one year, the formal authorization of the City Council is required in addition to that of the General Manager.

IV. Financial Risk Monitoring

The Energy Risk Manager has the responsibility to collect on a regular basis market and financial information regarding all approved counterparties with which PWP is authorized to transact. The information shall help assure that all counterparties are in good standing in terms of their ability to honor their obligations with respect to PWP.

To ensure that PWP’s approved counterparties are in good standing, marketing trends and information will also be collected.

1. Rating and Special Event Monitoring

The Energy Risk manager will monitor the counterparties for events that may have positive or negative impacts on their credit standings, and report to management any event that has a significant impact on the future and the ongoing operations of the counterparties. An analysis of the implications

that may result from such events shall be provided. The Energy Risk Manager will be responsible to update PWP's ETRM system to reflect counterparties status and approved credit amounts for power and/or natural gas, and provide transacting personnel and authorized agents with updated Authorized Counterparty List indicating approval and trading status on an as needed basis.

The following are considered adverse events and will result in the suspension of trading with any counterparty. No new business will be transacted if:

- The credit exposure exceeds the counterparty's credit limit. In addition, further actions that may be taken include, (i) a request for additional credit enhancements, (ii) the use of approved options to cover the transaction, (iii) closing the position
- An account is sixty (60) days past due,
- Upon notification of downgrade until appropriate credit enhancement is in place.
- Upon notification of bankruptcy

The Energy Risk Manager will immediately notify the PSBU transacting personnel of any suspension of trading with any counterparty.

2. Credit Enhancement Authorized

In order to protect PWP against any potential loss due to a counterparty's default and/or to allow a counterparty to be upgraded, the following credit enhancements may be required after the evaluation of the creditworthiness of the counterparty or after an adverse event that changes the rating agencies' views about the outlook of the counterparty:

1. Letter of credit from a reputable financial institution
2. Prepayment before the transaction is executed
3. Reduction of collection period or the credit limit
4. Surety bonds as collateral

The Energy Risk Manager will evaluate the appropriate credit enhancement tools to be used on a case-by-case basis. A report will be issued to the management providing the reasons that support the selection of a specific tool.

3. Adverse Event Management

In the event of an adverse condition that may be detrimental to PWP credit exposure, the Energy Risk Manager will report the event, analyze that condition, assess its impacts on PWP, and determine the opportunity to halt all transactions with the concerned counterparty. The Energy Risk Manager will also make recommendations on whether some guaranties provisions with respect to the transactions already entered into shall be activated.

When a counterparty is deemed less than creditworthy, all future transactions will be halted until the situation is improved or an adequate credit facility is in place.

In addition, a detailed report that describes how PWP exposure has changed due to the event and a mitigation action plan shall be prepared no later than three business days after the occurrence of the event.

V. Measurement and Reporting

The Energy Risk Manager has the responsibility to prepare on a regular basis a credit risk report and distribute the report to the following:

- General Manager
- Assistant General Manager and Chief Deputy
- Assistant General Manager - Power Supply
- Assistant General Manager Finance, Administration and Customer Service
- Wholesale Operations Manager / Energy Trading Manager
- Wholesale Operations Manager / Energy Settlements Manager
- Power Resources Planning Manager

The report will have the following format:

Counterparty As of – Date-	PWP Rating	Net A/R (\$) A	M-t-M (\$) B	C-VaR (\$) C	Collateral (\$) D	Total Credit Exposure (\$)	Limit Authorized (\$)	Status
PWP Portfolio								

Net A/R: Net Account Receivable for counterparty

M-t-M: Mark to Market, equal to the difference between the spot price and the forward price of the commodity (gas or power)

C-VaR: Credit value at Risk

Collateral: Amount posted as collateral by the counterparty if applicable

Total Exposure: equal to Net A/R + M-t-M + C-VaR – Collateral
= A + B + C - D

Limit Authorized: Maximum limit set for the counterparty

The Energy Risk Manager shall provide on a regular basis reports that explain where PWP stands in terms of total credit exposure.

VI. Counterparty Management

Whenever possible, PWP will utilize master agreements when entering into contractual relationships with counterparties. The following master agreements are recommended for transactions with counterparties:

1. The Western Systems Power Pool (WSPP) Agreement in effect should be used as a master agreement for short-term physical power transaction with WSPP members unless all the parties opt for another master agreement. In that case, the approval of the Energy Risk Manager and the City Attorney is expressly required.

2. The Edison Electric Institute (EEI) Agreement, or its equivalent may be used as the master agreement for financial firm power transactions in lieu of the WSPP Agreement for such transactions with non-WSPP members
3. The Master Netting Agreements may be incorporated into all counterparty agreements and transactions.
4. The North American Energy Standard Board (NAESB) master agreement should be used in all gas transactions

It is PWP's preference to utilize the Western System power Pool (WSPP) master agreement, whenever practical.

VII. ATTACHMENT A – LIST OF APPROVED COUNTERPARTIES**POWER TRANSACTIONS**

	COUNTERPARTY	RATING	CREDIT LIMIT (US \$)	STATUS
1	Anaheim Public Utilities	1	1,000,000	OPEN
2	Arizona Public Service (APS)	2	1,500,000	OPEN
3	Avista Corporation	3	500,000	OPEN
4	Bonneville Power Administration	1	2,700,000	OPEN
5	Cargill Power Markets	2	2,000,000	OPEN
6	City of Azusa	1	250,000	OPEN
7	City of Burbank Water & Power	1	400,000	OPEN
8	City of Colton	1	450,000	OPEN
9	City of Riverside Public Utilities	1	900,000	OPEN
10	City of Seattle	1	675,000	OPEN
11	City of Vernon	1	250,000	OPEN
12	Conocophillips	2	2,700,000	OPEN
13	EDF Trading Limited / EDF Trading N.A.	3	1,000,000	OPEN
14	Shell Energy North America (Coral Energy)	1	3,000,000	OPEN
15	Glendale Public Service Department	1	250,000	OPEN
16	Iberdrola Renewables, Inc. / Formerly PPM Energy	3	2,000,000	OPEN
17	Imperial Irrigation District	1	1,000,000	OPEN
18	Los Angeles Department of Water & Power (LADWP)	1	2,700,000	OPEN
19	Morgan Stanley	4	750,000	OPEN
20	Northern California Power Agency	1	1,800,000	OPEN
21	Pacific Corp	1	2,700,000	OPEN
22	Pinnacle West	2	1,500,000	OPEN
23	Powerex (Canada – British Columbia)	1	2,700,000	OPEN
24	Public Service of Colorado	2	1,500,000	OPEN
25	Sacramento Municipal Utility District	1	1,800,000	OPEN
26	Salt River Project (SRP)	1	1,800,000	OPEN
27	Sempra Energy	3	3,000,000	OPEN
28	Snohomish County PUD	1	900,000	OPEN
29	Southern California Edison	2	1,500,000	OPEN
30	Tenaska Energy Inc.	2	2,000,000	OPEN

31	The Energy Authority (TEA Inc)	2	1,500,000	OPEN
32	Turlock Irrigation District	1	300,000	OPEN
33	Utah Municipal Power Agency (UMPA)	1	200,000	OPEN
34	Western Area Power Administration	1	1,000,000	OPEN

AS OF 2/27/2014

PWP - AUTHORIZED COUNTERPARTY LIST

NATURAL GAS TRANSACTIONS

	COUNTERPARTY	RATING	CREDIT LIMIT (US \$)	STATUS
1	Conocophillips	2	2,700,000	OPEN
2	Shell Energy North America (Coral Energy)	1	3,000,000	OPEN
3	Occidental Energy Marketing	3	2,000,000	OPEN
4	Iberdrola Renewables, Inc. / Formerly PPM Energy	3	2,000,000	OPEN
5	City of Riverside Public Utilities	1	900,000	OPEN
6	Waste Management Inc.	3	1,000,000	OPEN
7	EDF Trading Limited / EDF Trading N.A.	3	1,000,000	OPEN
8	AGL Resources / Sequent Energy	3	1,000,000	OPEN
9	Tenaska Energy Inc.	2	2,000,000	OPEN

AS OF 2/27/2014

TOTAL (CVaR) LIMIT - POWER & NATURAL GAS**\$10,000,000**

VIII. ATTACHMENT B - LIST OF DOCUMENTS TO BE SUBMITTED BY A NEW COUNTERPARTY.

1. Legal identity of the counterparty including parent affiliations and structural issues
2. Complete audited financial statements for the past three (3) years, including but not limited to, the balance sheet, income statement, and statement of cash flows along with analysis of auditors and/or accompanying "Notes to Financial Statements".
3. Current and past three (3) years counterparty rating,
4. Copy of the annual report for the past three years,
5. Trade and banking references. References should be from major lending and trading relationships
6. Reference and contacts of the ten (10) most important energy trading counterparties
7. List of transactions and any existing relationships between the counterparty / parent company and the City of Pasadena / PWP. The list shall include the description of the transaction details and/or relationships between the parties for the last five years.

Attachment G

Pasadena Water and Power Trading Authority Delegation to Alliance for Cooperative Energy Services Power Marketing LLC

9-9-2014

Statement of objective

In compliance with Pasadena Water and Power ("PWP") Energy and Credit Risk Management Policy, this memorandum outlines trading authority delegation to Alliance for Cooperative Energy Services Power Marketing LLC ("ACES") in its market operations on behalf of PWP. From time to time, PWP may instruct ACES to execute transactions beyond the authorities set forth in this document via written request signed by a PWP designated representative.

Bilateral Authority Matrix Table

Transaction Type	Product	Per Transaction Limits				Per Day Limits	
		Term	Lead Time(1)	MW Size	\$/MWh	Total MWH	Total \$
Purchase energy to meet load	WSPP Schedule C energy	≤ 1 Day	Same Day, 24 Hour or DA	Capacity shortfall	NA	NA	Counterparty available credit
Purchase energy to replace higher cost resources or limited energy/hydro	WSPP Schedule C energy	≤ 1 Day	Same Day, 24 Hour or DA	The lesser of 75 MW or PWP dispatchable capacity(2)	\$250/MWh	1,800	Counterparty available credit
Purchase of Schedule B energy to meet load, or replace higher cost resources	WSPP Schedule B energy	≤ 1 Day	Same Day, 24 Hour or DA	25 MW or Less	\$150/MWh	250 Per contingency	\$25,000
Purchase for Resale	WSPP Schedule B & C energy	≤ 1 Day	Same Day, 24 Hour or DA	25 MW or Less	\$150/MWh	1,200	\$180,000
Sale of excess energy	WSPP Schedule B & C energy	≤ 1 Day	Same Day, 24 Hour or DA	Available excess capacity	NA	NA	Counterparty available credit

Bilateral Authority Matrix Explanations

- Per Transaction Limits represent the MW volume per hour and dollars/MWH for each

- transaction executed.
- The intent of transactions shall be to reduce PWP portfolio costs, including expected costs of energy, fuel, congestion, transmission losses, CAISO charges, and any other applicable charges, less revenues from energy and Ancillary Service sales. The intent of the purchase and sale transactions shall also be to manage market price volatility in the real time and day ahead markets. In the event PWP experiences an unplanned resource outage and is exposed to CaISO market prices, bilateral market purchases may be executed up to the capacity amount of the resource for the remaining term of the expected outage.
 - Per Day Limits represent the total MWH volume and dollars for all transactions executed in a trading day.
 - Daily limits are applied to gross amounts transacted in total for the trading day, and not to purchases and sells netted together.
 - Lead time represents the time period from the time a trade is executed to the time of delivery.
 - Authorized products include physical electric power and transmission. Transmission transactions are authorized if required to deliver the transacted energy. The term, lead time and volume limits for transmission transactions are the same as for each type of corresponding energy transactions. Dollar limits do not apply.
 - Transaction type is limited to purchases to meet load or replace a higher cost resource, purchases for resale and sales of excess energy to optimize PWP resources.
 - Control limits specified in the above table do not apply to sale of imported must-take energy due to transmission constraints, in which case, ACES will make the necessary sale at the best available market price.
- (1) Same Day, 24 Hour or DA means up to the close of the next CaISO Market Operating Day. For example, if IPP trips off line on a Saturday night at 6:00 pm, the ACES trader will have authority to transact the balance of Saturday (6 hours) and the full 24 hour period on Sunday. This authority also includes the ability to transact for Monday, the next available CaISO DA market.
 - (2) Dispatchable Capacity is defined as resources, including both local and contract generation, with the flexibility to change schedule, and/or be committed to service or taken offline.

CAISO Authority Matrix Table

Product	CAISO Per Transaction Limits				CAISO Per Day Limits
	Delivery Lead Time	Term	MW Size	\$/MWh	Total MWh
Generation Awards	As Required by CAISO	Same Day, 24 hour or DA	65	CAISO Price Cap	None
Demand Awards	As Required by CAISO	DA	350	CAISO Price Cap	None
Inter SC Transactions (A)	As Required by CAISO	Same Day, 24 hour or DA	100	CAISO Price Cap	2,400
Inter SC Transactions (B)		Same Day, 24 Hour	50		1,200
Inter SC Transactions (C)		DA	50		1,200
Imports/Exports		Same Day, 24 Hour or DA	108		None
Ancillary Services		50	None		

CAISO Trading Authority Matrix Explanations

- Generation Award Limits are per generating unit. Generation Award is defined as the amount of energy a market participant is required to generate within the market after submitting a generation offer for the supply of Energy and/or Ancillary Services, including Self-Schedules, submitted by Scheduling Coordinators for generating resources, conveyed through a three part offer to either the DA or RT CAISO Markets.
- Demand Award Limits are per each load location. Demand Award is defined as the energy awarded to a market participant according to the amount submitted in the DA market via a demand bid that indicates the MWh of Energy the Scheduling Coordinator is willing to purchase, the price at which it is willing to purchase the specified Energy, and the applicable Trading Hours for which the energy will be purchased.
- Imports, Exports, self schedules, bids, and awards are by location and are each monitored separately. Imports are defined as energy located outside the ISO Controlled Grid that is imported in to the CAISO Controlled Grid via an energy award and electronic tag. Exports are defined as energy located within the ISO Controlled Grid that is exported out of the CAISO Controlled Grid via an energy award and electronic tag.
- Inter SC Transactions are each monitored separately. Inter SC Transactions are defined as transactions occurring between two bilateral counterparties to provide for contractual delivery of energy under bilateral contracts within the CaISO MRTU market construct.
- (A) Inter SC transactions are approved for purchases and sales in the event of a planned/unplanned resource/transmission outage or return to service.

- (B) Inter SC transactions are approved for purchases and sales to cover a short or long position due to a variance between committed resources and the RT load forecast.
- (C) Inter SC transactions are approved for purchases and sales to cover a short or long position due to a variance between committed resources and the DA load forecast based upon ACES' revised DA load forecast for weekends, holidays or as requested by PWP for emergencies.
- Limits for Ancillary Service Awards apply to the Regulation and Operating (Spinning and Non-Spinning) Reserve Market. Ancillary Services are defined as Regulation, Spinning Reserve, Non-Spinning Reserve, Replacement Reserve, Voltage Support and Black Start together with such other interconnected operation services as the ISO may develop in cooperation with Market Participants to support the transmission of Energy from Generation resources to Loads while maintaining reliable operation of the ISO Controlled Grid in accordance with Good Utility Practice.
- Term applies to either the calendar year or planning year.

Execution Authority

Execution Authority is outlined in the above authority matrices. All column limits in the matrices are applied independently of one another, and no individual column limit may be exceeded without prior authorization.

Any request by PWP for ACES to execute on its behalf a transaction for a product not identified above or a transaction that exceeds ACES' limits must be documented in writing via a transaction request form or email by one of the following personnel: PWP General Manager, Director of Power Supply or Wholesale Operations Manager. Authorizations may be obtained by telephone outside of normal business hours.

Contract Requirements

Trading with counterparties shall only be permitted if PWP has either:

- An active, valid, and executed agreement enabling such trading activity with that counterparty.
- Written approval by the PWP Energy Risk Manager enabling such trading activity with that counterparty via a long form confirmation.

Credit Requirements

Credit limits for each counterparty shall not be exceeded. Entering into transactions with a counterparty that is not included on PWP's approved counterparty list is not allowed unless approved in writing prior to trade execution by the PWP Energy Risk Manager.

Regulatory Requirements

All transactions and bids must comply with applicable FERC, WECC, and/or CAISO policies and procedures for trading, scheduling, and reporting.

Sleeving

ACES is prohibited from placing Pasadena in a middleman role for contract or credit purposes. Credit sleeving is an arrangement where a more financially reputable entity acts as a middleman for a smaller undercapitalized entity in the execution of a transaction. Contract sleeving is an arrangement where an entity acts as a middleman between two entities to bridge a contract gap that exists between the two entities. Substituting a third party intermediary, from the approved counterparty list, between PWP and the intended counterparty for credit or contract purposes is authorized.

Firmness

The product firmness of all trades must be provided for in an executed agreement between PWP and the appropriate counterparty. Sales commitments must never be more firm than the supply source.

Delivery Locations

The only authorized delivery locations are:

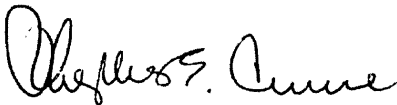
- SP 15 EZ Gen Hub
- SCE DLAP, GONDER, MONA (Intermountain Power Project energy sold at GONDER and MONA cannot flow back onto Southern California. It must be delivered at GONDER and MONA or beyond), MEAD 230, MEAD 500, MARKETPLACE, NOB, PV Gen (sales only), and WESTWING.

Open Positions/Speculation

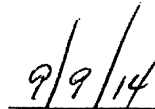
No speculative trading activities shall be permitted.

Clear Authority

Finally, any situation where authority is in question from a "clearly authorized" standpoint should be reviewed and authorized by written signature prior to execution by the PWP General Manager.



Phyllis E. Currie
General Manager
Pasadena Water and Power



Date