Energy Risk Management Policy

July 1, 2021

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Section 1: ENERGY RISK MANAGEMENT POLICY OVERVIEW

1.1 Background and Purpose

The Clean Power Alliance of Southern California (CPA) is a Joint Powers Authority (JPA) administering a Community Choice Aggregation (CCA) program in Southern California. CPA service territory currently includes 32 jurisdictions – 30 cities and the unincorporated parts of Los Angeles and Ventura Counties. CPA members presently include the following:

<u>Counties:</u>

Los Angeles

Ventura

<u>Cities:</u>

Agoura Hills	Hawaiian Gardens	Santa Monica
Alhambra	Hawthorne	Sierra Madre
Arcadia	Manhattan Beach	Simi Valley
Beverly Hills	Malibu	South Pasadena
Calabasas	Moorpark	Temple City
Camarillo	Ojai	Thousand Oaks
Carson	Oxnard	Ventura
Claremont	Paramount	West Hollywood
Culver City	Redondo Beach	Westlake Village
Downey	Rolling Hills Estates	Whittier

CCA, authorized in California under AB 117 and SB 790, allows local governments, including counties and cities, to purchase wholesale power supplies for resale to their residents and businesses as an alternative to electricity provided by an Investor Owned Utility (IOU). For CPA members, that IOU is Southern California Edison (SCE). Electricity procured by CPA to serve customers is delivered over SCE's transmission and distribution system.

CPA exists to serve its local government members, and the residences and businesses located within their respective communities. CPA's specific objectives are to provide its customers with a reliable supply of electricity, at competitive electric rates, sourced from a generation portfolio with lower greenhouse gas (GHG) emissions and higher renewable content than the incumbent utility, SCE. CPA also has goals to be a catalyst for local economic development and give its member agencies greater choice in the energy procured for their residents.

To meet these commitments, CPA must procure electric power supplies and operate in the wholesale energy market which exposes CPA, and ultimately the customers that it serves, to various risks. The intent of the Energy Risk Management Policy (ERMP) is to provide CPA, and by extension its customers, with a framework to identify, monitor and manage risks associated with procuring power supplies and operating in wholesale energy markets.

The Energy Risk Management Policy (ERMP), including its appendices, establishes CPA's Energy Risk Program.

1.2 Scope

Unless otherwise explicitly stated in the ERMP or other policies approved by the CPA Board of Directors (Board), the ERMP applies to all power procurement and related business activities that may impact the risk profile of CPA. The ERMP documents the framework by which CPA staff and consultants will:

- Identify and quantify risk
- Develop and execute procurement strategies
- Develop controls and oversight
- Monitor, measure and report on the effectiveness of the ERMP

To ensure its successful operation, CPA has partnered with experienced consultants to provide power supply services. Specific to power procurement, CPA has partnered with a third-party Scheduling Coordinator that augments CPA's internal Front (scheduling), Middle (monitoring) and Back (settlement) Office related activities as discussed at Section 4.3. The Scheduling Coordinator supporting CPA's power procurement activities will adhere to and be governed by the ERMP in providing these services to CPA. In addition, the Scheduling Coordinator's activities executed on CPA's behalf will be governed by its own risk management policies and procedures, and prudent industry practices.

1.3 Energy Risk Management Objective

The objective of the ERMP is to provide a framework for conducting procurement activities that maximize the probability of CPA meeting the goals listed in Section 2.1.

Pursuant to the ERMP, CPA will identify and measure the magnitude of the risks to which it is exposed and that contribute to the potential for not meeting identified goals.

1.4 ERMP Administration

The ERMP has been reviewed and approved by the Board. The Executive Director in consultation with the Risk Management Team (collectively, the "RMT"), as defined in Section 4.2, and the Board must approve amendments to the ERMP, except for appendices D, E, and F, which may be amended with approval of the Executive Director, in consultation with the RMT. The Executive Director must give notice to the Board of any amendment it makes to an appendix or a reference policy or procedure document.

Section 2: GOALS AND RISK EXPOSURES

2.1 ERMP Goals

To help ensure its long-term success, CPA has outlined the following goals:

- Build a portfolio of resources with lower GHG emissions and higher renewable content than SCE;
- Meet reliability requirements established by the State of California, and operate in a manner consistent with Prudent Utility Practice (defined as the practices generally accepted in the utility industry to ensure safe, reliable, compliant and expeditious operations);
- Maintain competitive retail rates with SCE after adjusting for exit fees (currently the Power Charge Indifference Adjustment or PCIA) and Franchise Fees paid by CPA customers;
- Emphasize during the initial years of operation the funding of financial reserves to meet the following long-term business objectives:
  - Stabilize rates by dampening year-to-year variability in power supply costs;
  - Establish an investment-grade credit rating to maximize the ability of CPA to engage in long-term acquisition or development of generation supplies consistent with ERMP goals; and
  - Provide a source of equity capital for investment in generation.

The goals outlined above are incorporated into the financial models and metrics that are used to monitor and measure risk and ERMP success. It is important to note that the goals listed above are not intended to be a comprehensive list of goals for CPA. Rather, the above reflect the overarching goals critical to CPA's long-term financial success and that will guide the ERMP.

2.2 Risk Exposures

For the purpose of the ERMP, risk exposure is assessed on all transactions (energy, environmental attributes, and capacity) as well as the risk exposure of open positions and the impacts of these uncertainties on CPA's load obligations.

CPA faces a range of risks during launch and ongoing operation including:

- Customer opt-out risk
- Market risk
- Regulatory risk
- Volumetric risk
- Model risk
- Operational risk
- Counterparty credit risk
- Reputation risk

2.2.1 Customer Opt-Out Risk

Customer opt-out risk may be realized by any condition or event that creates uncertainty within, or a diminution of, CPA's customer base. Customer opt-out risk is manifested in two separate ways.

First, the ability of customers to return to bundled service from SCE creates uncertainty in CPA's revenue stream, which is critical for funding ERMP goals and achieving the investment grade credit rating needed to successfully operate over the long-term.

Second, customer opt-out risk can potentially challenge the ability of CPA to prudently plan for, and cost-effectively implement, long-term resource commitments made on behalf of its member communities and the customers it serves.

CPA will manage customer opt-out risk through the following means:

- Implement a key accounts program and maintain strong relationships with the local community including elected leaders, stakeholders and all of the customers CPA serves;
- Actively monitor and advocate for the interests of CPA and its customers in SCE ratemaking proceedings, California Public Utilities Commission (CPUC) proceedings that potentially affect exit fees paid by CPA customers, as well as all regulatory and legislative proceedings where an adverse outcome may challenge the ability of CPA to deliver on customer commitments;
- Regularly monitor and report actual and projected financial results including probability-based and stress-tested financial results assuming a range of possible future outcomes with respect to:
  - Future SCE generation and PCIA rates;
  - Future market costs for energy, environmental attributes and capacity; and
  - Anticipated or threatened regulatory actions, when appropriate.
- Adopt, implement and update, as needed, a formal Energy Risk Hedging Strategy (Appendix B) describing the strategy that CPA will follow for engaging in procurement activities; and
- Evaluate expansion of CPA's customers base through incorporation of other eligible communities into the CCA.

2.2.2 Market Risk

Market risk is the uncertainty of CPA's financial performance due to variable commodity market prices (market price risk) and uncertain price relationships (basis risk). Variability in market prices creates uncertainty in CPA's procurement costs, which has a direct impact on customer rates. CPA will manage market risk through:

- Regular measurement;
- Execution of approved procurement;
- Hedging and Congestion Revenue Right strategies; and
- Use of the Limit Structure set forth in the ERMP (see limits in Section 5.1.2 and Appendix B).

2.2.3 Regulatory and Legislative Risk

CPA and other CCAs are subject to an evolving legal and regulatory landscape. Additionally, CCAs are in direct competition with California's IOUs in supplying retail electricity and the IOUs face the risk of stranded investments in generating assets and power purchase agreements procured in the past to serve now departing CCA loads. The manner in which such stranded costs of these legacy power supplies are allocated to departing CCA loads is subject to change based on various proceedings at the CPUC. The outcome of such proceedings will directly affect the cost of power for CPA's customers, as well as impact the rate competitiveness of CPA.

In addition to exit fees, potential regulatory and/or legislative changes could affect the ability of CPA to exercise local control over the manner and means of procuring power supplies to serve its customers.

CPA will manage regulatory and legislative risks by:

- Regularly monitor and analyze legislative and regulatory proceedings impacting CCAs; and
- Actively participate in, and advocate for, the interests of CPA and its customers during regulatory and legislative proceedings.

2.2.4 Volumetric Risk

Volumetric risk reflects the potential uncertainty in the quantity of different power supply products (e.g., renewable energy, Carbon Free Energy and capacity) required to meet the needs of CPA customers. This uncertainty can lead to adverse financial outcomes, as well as create potential for CPA to fail to meet reliability or renewable energy compliance requirements established by the State of California and/or the CPA Board. Customer load is subject to fluctuation due to customer opt-outs or departures, temperature deviation from normal, unforeseen changes in the growth of behind the meter generation by CPA customers, unanticipated energy efficiency gains, new or improved technologies, as well as local, state and national economic conditions. CPA will manage volumetric risk by taking steps to:

- Implement robust short- and long-term load and generation supply forecast methodologies, including regular monitoring of forecast accuracy through time and refining such forecasts, including by incorporating CPA's actual load data into forecasts as such data becomes available;
- Account for volumetric uncertainty in load and/or generation supply in in the Energy Risk Hedging Strategy;
- Monitor trends in customer onsite generation, economic shifts, and other factors that affect electricity customer consumption and composition; and
- Proactively engage with customers in developing distributed energy resources and behind-the-meter generation and energy efficiency programs so as to better forecast changes in load.

2.2.5 Model Risk

Model risk has potential for an inaccurate or incomplete representation of CPA's actual or forecast financial performance due to deficiencies in models and/or information systems used to capture all transactions. CPA will manage model risk by:

- RMT ratification of models used to forecast financial performance, net positions and/or measure risk;
- Ongoing review of model outputs;
- A requirement to record all procurement transactions in a single trade capture system; and
- Ongoing update and improvement of models as additional information and expertise is acquired and industry best practices evolve.

2.2.6 Operational Risk

Operational risk is the uncertainty of CPA's financial performance due to weaknesses in the quality, scope, content, or execution of human resources, technical resources, and/or operating procedures within CPA. Operational risk can also be exacerbated by fraudulent actions by employees or third parties or inadequate or ineffective controls. CPA will manage operational risk through:

- The controls set forth in the ERMP;
- RMT oversight of procurement activity;
- Timely and effective reporting to the Executive Director in consultation with the RMT, and the Board;
- Implementation of a compliance training program for CPA staff;
- Ongoing CPA and Scheduling Coordinator staff education/training and participation in industry forums; and
- Annual audits to test compliance with the ERMP.

2.2.7 Counterparty Credit Risk

Counterparty credit risk is the potential that a counterparty will fail to perform or meet its obligations in accordance with terms agreed to under contract. CPA's exposure to counterparty credit risk is controlled by the limit controls set forth in the Credit Policy described in Section 6.

2.2.8 Reputation Risk

Reputation risk is the potential that CPA's reputation is harmed, causing customers to opt-out of CPA service and migrate back to SCE. Reputational risk is also the potential that energy market participants view CPA as an untrustworthy business partner, thus reducing the pool of potential counterparties and/or having counterparties apply a CPA-specific risk premium to pricing. Reputational risk is managed through:

- Implementation of and adherence to the ERMP;
- Engaging in ethical, transparent and honest business practices during trading activities; and
- Establishment and adherence to industry best practices including both those adopted by other CCAs, as well as those adopted by traditional municipal electric utilities.

Section 3: BUSINESS PRACTICES

3.1 General Conduct

It is the policy of CPA that all Board members, staff, and consultants (collectively referred to "CPA Representatives"), adhere to standards of integrity, ethics, conflicts of interest, compliance with statutory law and regulations and other applicable CPA standards of personal conduct while employed by or affiliated with CPA. Towards this end, all persons performing marketing and trading functions on behalf of CPA shall be subject to, read, understand, and abide by the provisions contained in the CPA Code of Marketing and Trading Practices (see Appendix F).

3.2 Trading for Personal Accounts

All CPA Representatives participating in any transaction or activity within the coverage of the ERMP are required to comply with the CPA Conflict of Interest Code approved by the Fair Political Practices Commission and are obligated to give notice in writing to CPA of any legal, financial or personal interest such person has in any counterparty that seeks to do business with CPA, and to identify any real or potential conflict of interest such person has or may have with regard to any existing or potential contract or transaction with CPA, within 48-hours of becoming aware of the conflict of interest. Written notice should be submitted to the Executive Director substantially in the form of the letter notification shown in Appendix E. This written notice obligation shall be in addition to the regulations or requirements of the Fair Political Practices Commission (e.g., Statement of Economic Interests, Form 700) and any policy adopted by the CPA Board of Directors, including but not limited to the Vendor Communication Policy No. 2019-10.

Further, all persons are prohibited from personally participating in any transaction or similar activity that is within the coverage of the ERMP, or prohibited by California Government Code Section 1090, and that is directly or indirectly related to the trading of electricity and/or environmental attributes as a commodity.

If there is any doubt as to whether a prohibited condition exists, then it is the CPA Representative's responsibility to discuss the possible prohibited condition with CPA General Counsel.

3.3 Adherence to Statutory Requirements

All CPA Representatives are required to comply with rules promulgated by the State of California, CPUC, California Energy Commission, Federal Energy Regulatory Commission (FERC), Commodity Futures Trading Commission (CFTC), and other regulatory agencies.

Congress, FERC and CFTC have enacted laws and regulations that prohibit, among other things, any action or course of conduct that actually or potentially operates as a fraud or deceit upon any person in connection with the purchase or sale of electric energy or transmission services. These laws also prohibit any person or entity from making any untrue statement of fact or omitting a material fact where the omission would make a statement misleading. Violation of these laws can lead to both civil and criminal actions against the individual involved, as well as CPA. The ERMP is intended to comply with these laws, regulations and rules and to avoid improper conduct on the part of anyone employed by CPA. These procedures may be modified from time to time based on legal requirements, auditor recommendations, and other considerations.

In the event of an investigation or inquiry by a regulatory agency, CPA will provide legal counsel to employees provided the subject of the investigation is within the employee's course and scope of employment. However, CPA reserves the right to refrain from providing legal counsel if it reasonably appears to the CPA General Counsel and Executive Director that the employee was either not acting in good faith or was acting outside the course and scope of his or her employment.

CPA employees are prohibited from working for another power supplier, CCA or utility while they are simultaneously employed by CPA unless an exception is authorized by the Board.

3.4 Transaction Type

Authorized transaction types are listed in Appendix C. Each approved transaction type that is listed is included to either meet a mandatory procurement obligation required of all Load Serving Entities (LSE) serving retail loads in California; and/or alternatively, the approved product is needed for CPA to meet an identified ERMP goal. Major transaction types include:

- Resource Adequacy Capacity is a mandatory procurement obligation that ensures adequate generation supplies are available on a planning basis to reliably meet the requirements of electric consumers in the California Independent System Operator (CAISO) balance authority;
- Portfolio Content Category 1 (PCC1) and Portfolio Content Category 2 (PCC2) renewable energy must be procured by CPA to comply with the state of California's Renewable Portfolio Standard, as required by SB 350. CPA has made a voluntary decision to purchase incremental quantities of PCC1 and/or PCC2 renewable energy to exceed the renewable portfolio content of the incumbent utility;
- Carbon Free Energy is a voluntary purchase of specified source energy from large hydroelectric generation than enables CPA to provide its customers with electricity sourced from generators producing low GHG emissions so that member agencies can meet their climate action plans and CPA can contribute to combatting climate change;
- Physical Energy products are a voluntary purchase made by CPA to provide cost certainty and rate stability for customers; and
- The CAISO is the largest grid operator in the state of California and CPA members lie within its balancing area. CAISO operates Day-Ahead, Fifteen Minute and Real-Time Markets and other ancillary markets necessary for reliable operation of the grid. CPA is required to participate in CAISO markets. Acquisition of the CAISO products listed in Appendix C either result from mandatory participation in CAISO's markets, or are useful for managing short-term market risks associated with CAISO's markets.

The strategy for using and procuring the approved products is described in further detail in the Energy Risk Hedging Strategy.

3.4.1 Exceptions

New transaction types may provide CPA with additional flexibility and opportunity but may also introduce new risks. Therefore, transaction types not included in Appendix C must be approved by the RMT and the Board prior to execution using the process defined below.

When seeking approval for a new transaction type, a New Transaction Type Approval Form, as shown in Appendix D, is to be drafted describing all significant elements of the proposed transaction. The proposal write-up will, at a minimum, include:

- A description of the benefit to CPA, including the purpose, function and expected impact on costs (i.e.; decrease costs, manage volatility, control variances, etc.);
- Identification of the in-house and/or external expertise that will manage and support the new or non-standard transaction type;
- Assessment of the transaction's risks, including any material legal, tax or regulatory issues;
- How the exposures to the risks above will be managed by the Limit Structure;
- Proposed valuation methodology (including pricing model, where appropriate);
- Proposed reporting requirements, including any changes to existing procedures and system requirements necessary to support the new transaction type;
- Proposed accounting methodology; and
- Proposed work flows/methodology (including systems).

It is the responsibility of the Middle Office to ensure that relevant departments have reviewed the proposed transaction type and that material issues are resolved prior to submittal to the Board for approval. If the transaction type is approved, Appendix C to the ERMP will be updated to reflect its addition.

3.5 Counterparty Suitability

All counterparties with whom CPA transacts must be reviewed for creditworthiness and assigned a Credit Limit as described in Section 6.

3.6 System of Record

Since information systems play a vital role for CPA's trading and risk management abilities, CPA shall maintain and secure a System of Record. CPA's transaction and contract data are also stored in its Scheduling Coordinator's energy trading and risk management system.

CPA's Technology and Data and Systems group supports the security, integrity, and recoverability of the System of Record. The Scheduling Coordinator has assigned a Database Administrator (DBA) that is charged with database security and maintenance for the Scheduling Coordinator's transaction database. For data recoverability, transaction data stored in the System of Record is replicated daily to ensure data redundancy and is backed-up via cloud-based applications.

All transaction records will be maintained in US dollars and will be separately recorded and categorized by type of transaction and other characteristics, in line with standard industry practice. This System of Record shall be auditable and audited as appropriate.

3.7 Transaction Valuation

Transaction valuation and mark-to-market (valuing of an asset based on its current market price) reporting of positions shall be based on independent, publicly available, market-observed prices (replacement costs) whenever possible. In the event there are not market-observed prices, the value of CPA's transactions shall follow a notional value calculation (the total nominal dollar value of a transaction over its full duration) or other methodology approved as part of the new product approval process.

All transactions and open positions will be valued daily.

3.8 Stress Testing

In addition to limiting and measuring risk using the methods described herein, stress testing shall also be used to examine performance of the CPA portfolio under potential adverse conditions. Stress testing is used to understand the potential variability in CPA's projected procurement costs and resulting impacts on customer rates and CPA's competitive positioning associated with low probability events. The Middle Office will perform stress-testing of the portfolio as directed by the RMT.

3.9 Trading Practices

As previously noted, CPA exists to serve its customers. The scope of its wholesale market operations is limited to that which is required to meet the power supply obligations of its customers consistent with ERMP goals. It is the expressed intent of the ERMP to prohibit wholesale market activities that result in procurement of any power supply product beyond that which is required to meet an identifiable need of CPA customers. The purchase or sale of any power supply product beyond what is reasonably anticipated to be needed to meet the requirements of CPA customers is a speculative transaction and is prohibited.

In the course of developing operating plans and conducting procurement activities, CPA recognizes that staff must employ reasonable expertise and judgment, and it is not the intent of the ERMP to restrain the legitimate application of analysis and market expertise in executing procurement strategies intended to minimize costs or maximize the value of generation within the constraints of the ERMP. If any questions arise as to whether a proposed transaction(s) constitutes speculation, the RMT shall review the transaction(s) to determine whether the transaction(s) would constitute speculation and shall document its findings. As used here, "speculation" means the act of trading an asset with the expectation of realizing financial gain resulting from a change in price in the asset being transacted.

Staff and consultants engaged in procurement activities will also observe the following practices:

- Persons shall conduct business in good faith and in accordance with all applicable laws, regulations, tariffs and rules;
- Persons shall not arrange or execute wash trades (i.e., offsetting transactions where no financial risk is taken);
- Persons shall not disseminate known false or misleading information or engage in transactions to exploit such information;
- Persons shall not game or otherwise interfere with the operation of a well-functioning competitive market;
- Persons shall not collude with other market participants; and
- Persons shall immediately report any known or suspected violation of the ERMP.

3.10 Training

CPA recognizes the importance of ongoing education to manage risk and to contribute to ERMP success. Towards this end, CPA will observe the following practices:

- All employees executing procurement transactions on behalf of CPA must receive appropriate training in the attributes of each product type that they transact, how the product furthers the portfolio objectives of CPA, and how the risk profile of CPA is impacted by procurement of each product;
- All employees executing procurement activities shall complete required and available energy market compliance training as determined by the Chief Operating Officer once per calendar year and acknowledge receipt of said training in writing;
- The Human Resources Department shall maintain records of each employee's training status.

Section 4: ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

4.1 Board of Directors Responsibilities

The Board has the responsibility to review and approve the ERMP. With this approval, the Board acknowledges responsibility for understanding the risks CPA is exposed to through its CCA activity and how the policies outlined in the ERMP help CPA manage the associated risks. The Board is also responsible to:

- Provide strategic direction to CPA;
- Consider transactions beyond authorities delegated to the Executive Director in consultation with the RMT;
- Consider changes to the Energy Risk Hedging Strategy (see Appendix B); and
- Consider new transaction types not currently listed in the ERMP (see Appendix C).

4.2 Risk Management Team

The RMT is responsible for implementing, maintaining and overseeing compliance with the ERMP and for maintaining the Energy Risk Hedging Strategy. At a minimum, the members of the RMT shall include the Executive Director and at least two additional CPA staff members with experience in energy markets selected at the sole discretion of the Executive Director.

The primary goal of the RMT is to ensure that the procurement activities of CPA are executed within the guidelines of the ERMP and are consistent with Board directives. The RMT shall consider and propose changes to the ERMP when conditions dictate.

Pursuant to direction and delegation from the Board of Directors and the limitations specified by this ERMP, the Executive Director, in consultation with the RMT, maintains authority over procurement activities for CPA. This authority includes, but is not limited to, taking any or all actions necessary to ensure compliance with the ERMP.

The RMT responsibilities may include, but are not limited to:

- Maintain the Energy Risk Hedging Strategy and ensure that all procurement strategies and related protocols are consistent with the ERMP;
- Review financial and risk models and subsequent changes;
- Establish counterparty Credit Limits;
- Review initial counterparty credit review models and methods for setting and monitoring Credit Limits and subsequent changes;
- Review reports as described in the ERMP;
- Meet to review actual and projected financial results and potential risks;
- Keep apprised of any change in the environment in which CPA operates that has a material effect upon the risk profile of CPA;
- Review summaries of limit violations and recommend corrective actions, if necessary; and

- Review the effectiveness of CPA's energy risk measurement methods.

4.3 Segregation of Duties

CPA shall work to maintain a segregation of duties, also referred to as "separation of function," to help manage and control the risks outlined in the ERMP. Individuals responsible for legally binding CPA to a transaction will not also perform confirmation or settlement functions without supplemental, transparent, and auditable controls. CPA also will leverage the organizational structure of the Scheduling Coordinator's Middle and Back offices to help maintain a segregation of duties. The Front, Middle and Back Office responsibilities for CPA are described below.

4.3.1 Front Office

The Front Office is headed by the Director of Power Planning & Procurement. The Front Office has overall responsibility for (1) managing all activities related to procuring and delivering resources needed to serve CPA load, (2) analyzing fundamentals affecting load and supply factors that determine CPA's net position, and (3) transacting within the limits of the ERMP and associated policies to balance loads and resources and maximize the value of CPA assets through the exercise of approved optimization strategies. Other duties associated with these responsibilities include:

- Assist in the development and analysis of risk management hedging products and strategies, and bring recommendations to the RMT;
- Prepare a monthly operating plan for the prompt month (the month following the current month) that gives direction to the Day-Ahead and Real-Time Market trading and scheduling staff regarding the bidding and scheduling of CPA's resource portfolio in the CAISO market;
- Calculate and maintain the net forward positions (a forecast of the anticipated electric demands compared to existing resource commitments) of CPA for all power products (energy, renewable energy, Carbon Free Energy and Resource Adequacy Capacity);
- Develop, price and negotiate hedging products;
- Oversee scheduling of load and resources into CAISO;
- Keep accurate records of all executed transactions;
- Manage and facilitate the transaction execution process for power supply transactions through coordination of the following activities:
    - Notify Front Office personnel of any anticipated unique physical delivery or scheduling issues;
    - Work with Middle Office personnel and legal counsel to establish a contract, evaluate counterparty creditworthiness and secure additional credit from the counterparty, if necessary;
    - Work with Middle Office, as needed, to perform an analysis of the potential transaction to evaluate the effect on CPA's portfolio risks;
    - Notify Back Office of terms and conditions affecting settlement to ensure that the necessary settlement procedures are in place.

4.3.2 Middle Office

The Middle Office functions will be the responsibility of the Chief Financial Officer. The Middle Office provides market and credit risk oversight, has responsibility for development of risk management policies and procedures, monitors compliance with the same, and keeps management and the Board informed on risk management issues. CPA will maintain its Middle Office functions independent from the front and back office functions.

Middle Office responsibilities include the following:

- Create and ensure compliance with policies outlining standard procedures for conducting business;
- Oversee short-term and long-term load forecasting;
- Estimate and publish daily forward monthly power and natural gas price curves for a minimum of the balance of the current year through the next calendar year;
- Verify the net forward positions of CPA for all power products;
- Ensure that CPA adheres to all risk policies and procedures;
- Implement and enforce credit policies and limits;
- Confirm all transactions conform to commercial terms and alert Front Office to discrepancies;
- Ensure all trades have been entered into the System of Record as well as the Scheduling Coordinator's transaction data management system;
- Ensure that all CAISO Day-Ahead, Fifteen Minute and Real-Time Market delivery volumes and prices are entered into a transaction database;
- Review models and methodologies and recommend RMT approval, as needed;
- Mark unrealized and realized gains and losses associated with CPA hedge activity.
- Development and maintain financial and energy risk management models as directed by the RMT
- Develop and maintain load forecasting models and perform long term load forecasts as directed by RMT

4.3.3 Back Office

The Back Office functions will be the responsibility of the Chief Financial Officer. It provides support with a wide range of administrative activities necessary to execute and settle transactions and to support the risk control efforts (e.g., transaction entry and/or checking, data collection, billing, etc.) consistent with the ERMP. Through its partnership with the Scheduling Coordinator, CPA will maintain its Back Office functions independent from the Front and Middle Office functions.

Back Office responsibilities include the following:

- Ensuring timely and accurate financial reporting;
- Maintaining a system of financial controls and business processes that control financial risk;
- Maintaining the overall financial security of transactions undertaken on behalf of CPA;

- Carrying out month-end checkout of all transactions each month; and
- Validation and prompt payment of energy related invoices payable by CPA and resolving disputes with counterparties;
- Generation and prompt collection of energy related invoices payable by counterparties

Section 5: DELEGATION OF AUTHORITY

5.1 Risk Limits

The following limits apply to all CPA procurement activities. These limits are Board-approved and define the limits that CPA must operate within. The metrics and management of risk within these limits is further described in the Energy Risk Hedging Strategy.

5.1.2 Delegation Authority

Through its approval of the ERMP, the Board has delegated operations and oversight to the Executive Director, in consultation with the RMT, as outlined through the ERMP. Specifically, to facilitate daily operations of the CCA, the Board has delegated transaction execution authorities shown in the table below.

Position	*Term Limit**	*Counterparty Limit*	*Notional Value Limit (per transaction)*	*Notional Value Limit (annual)*
Executive Director in consultation with the RMT	5 years	Pursuant to Credit Policy	Board-approved limits set in the Energy Risk Hedging Strategy	
Executive Director	1 year	Pursuant to Credit Policy	$10m	$80m[1]

*Term is the total duration of the contract, defined as the number of days between the beginning flow date and the ending flow date, inclusive.

For operational flexibility, the Executive Director will have the authority to delegate transaction execution authority to either the Chief Operating Officer or Director of Power Planning & Procurement, as needed. Any delegation will be documented in writing and contain any limitations or exclusions that the Executive Director deems necessary.

For a transaction to be valid, it must conform to each of the four limits specified in the above table.

These limits will be applied to wholesale power procurement outside of transactions directly executed with the CAISO. These limits provide CPA the needed authority to manage risks as they arise. Transactions falling outside the delegations above require Board approval prior to execution.

Transactions with CAISO and CAISO administrative fees are excluded from this table. CAISO transactions are limited to those required for scheduling contracts in the CAISO market and for balancing CPA's load and resources.

[1] Annual limits intended to reflect approximately 10% of annual power supply costs.

5.1.3 Long-Term Procurement

Long-term procurement, defined as contract terms greater than 5 years will be subject to Board approval. Long-term contracts are procured through solicitations, bilateral negotiations, or regulatory proceedings, with oversight including shortlist approvals or procurement recommendations, provided by the Energy Resources & Planning Committee of the Board.

All long-term contracts are evaluated using standard evaluation criteria, including economic value over the life of the contract and any additional evaluation criteria established by the Energy Resources & Planning Committee and consistent with Board policy directives. Proposals received in solicitations, including all pricing and other confidential submission information, are reviewed by an RFO Review Team comprised of the Executive Director, additional Staff members as determined by the Executive Director, and a subset of Board members serving on the Energy Resources and Planning Committee, unless otherwise determined appropriate by the Executive Director and General Counsel in consultation with the Board Chair and Chair of the Energy Resources and Planning Committee. Proposals, either from solicitations, bilateral negotiations, or regulatory proceedings, are evaluated by the Energy Resources & Planning Committee and approved for contract negotiations. Final awards are then presented for Board consideration in accordance with applicable law.[2]

Any amendments to a Board-approved long-term contract that make material changes to the terms of the contract including, but not limited to, changes to price, volume, project size, commercial operation date, counterparty security requirements, or other amendments that impact the evaluation criteria upon which a project was approved must be also approved the Board.

Minor, non-core amendments, or additional agreements that are administrative in nature or arising from the counterparties effectuating their obligations related to the project under normal course of business (e.g., implementing project financing, consent to collateral assignment, assignments, changes to progress reporting forms, insurance obligations, or termination), may be approved by the Executive Director.

All procurement executed under the delegation above must align with CPA's underlying risk exposure (i.e., load requirements, locational and temporal) that is being hedged consistent with the Energy Risk Hedging Strategy. The RMT will consider risks associated with executed or planned long-term procurement within its evaluation of overall portfolio risk and procurement decision-making.

5.1.4 Volume Limits

Transactions should not be executed that exceed CPA's energy, capacity, or renewable or Carbon Free Energy requirements. If there is an adjustment to CPA requirements resulting in the volume of existing transactions exceeding CPA's requirements, the RMT will determine the most favorable strategy to appropriately rebalance the portfolio.

An exception to the above limits may be made by the RMT if executing a transaction exceeding load will minimize costs or is necessary to ensure compliance. For example, procuring RA for the entire year could cause CPA to hold excess RA in certain months. Such a transaction would be acceptable if a lower cost alternative transaction or set of transactions that more closely matches monthly needs is unavailable.

[2] Awards will be presented without market sensitive information (i.e., pricing or other sensitive commercial terms) for Board consideration in accordance with applicable law.

5.1.5 Locational Limits

The delivery location for all transactions must support the requirements of CPA's source or sink locations.

5.1.6 CAISO Submission Limits

CPA shall bid at least 80% of its forecast load requirements in the Day-Ahead Market and bids shall not exceed 100% of forecast load requirements.

CPA shall offer no more than 100% of the forecasted generation capability in the Day-Ahead Market. CPA shall follow CAISO protocols for all activity within CAISO.

5.2 Monitoring, Reporting and Instances of Exceeding Risk Limits

The Middle Office is responsible for monitoring and reporting compliance with all limits within the ERMP. If a limit or control is violated, the Middle Office will send notification to the trader responsible for the violation and the RMT. The RMT will discuss the cause and potential remediation of the exceedance to determine next steps for curing the exceedance.

Section 6: CREDIT POLICY AND COUNTERPARTY SUITABILITY

Prior to execution of any transaction, the Front Office will verify that CPA has executed a master agreement with the counterparty, that the counterparty has been evaluated for creditworthiness, and that an approved Credit Limit has been established. No transactions may be executed without first ensuring the transaction falls within the unutilized Credit Limit for the counterparty or has been approved on an exception basis by the RMT.

6.1 Master Enabling Agreements and Confirmations

Transactions are governed by master agreements, the forms of which must be prepared by CPA General Counsel and approved by the Board. No transactions may be executed without a fully executed master agreement being on file. Written confirmations of each transaction will contain standard commercial terms and provisions. Material modifications or additions to standard commercial terms in confirmations require approval by legal counsel.

It is CPA's policy to confirm all transactions in writing. All confirmations received from counterparties will be matched against trades in the System of Record. Any discrepancies between a confirmation and the System of Record may be handled by the Front Office representative that executed the transaction, or if necessary, a Middle Office representative will seek resolution with the counterparty. All confirmations will be kept on file.

6.1.1 Exceptions

It is standard industry practice to not provide written confirmation of certain short-term transactions with a term of one day or less. Additionally, CPA may agree with certain counterparties to alternative methods for confirming certain transactions. Transactions executed in a recorded telephone conversation or recorded instant message in which the offer and acceptance shall constitute the agreement of the parties must be confirmed in writing after-the-fact, with notice being provided to the counterparty within 72 hours.

6.2 Counterparty Suitability

All counterparties shall be evaluated for creditworthiness by the Middle Office prior to execution of any transaction and no less than annually thereafter. Additionally, counterparties shall be reviewed if a change has occurred, or is perceived to have occurred, in market conditions or in a company's management or financial condition. This evaluation, including any recommended increase or decrease to a Credit Limit, shall be documented in writing and include all information supporting such evaluation in a credit file for the counterparty.

Counterparty Credit Limits, and credit and payment terms will be recommended by the Middle Office for approval by the RMT consistent with CPA's Credit Protocols. The Middle Office will undertake credit analysis that shall include, at a minimum, an evaluation of current audited financial statements or other supplementary data and consider factors such as:

- Liquidity
- Leverage (debt)
- Profitability
- Net worth
- Cash flow
- Proposed collateral and other contract terms

Counterparty's senior unsecured or corporate credit rating will be obtained from one of the nationally recognized rating agencies (S&P, Moody's, and/or Fitch) if available. Trade and banking references, and any other pertinent information, may also be used in the review process.

When establishing credit and payment terms, RMT will consider the Credit Limit of the counterparty, current exposure to the counterparty, the product type and tenor of existing and/or future transactions, notional value of proposed or future transactions with the counterparty and the availability/scarcity and commercial significance of the product being traded. A counterparty may choose to provide a guarantee from a third party, provided the third party satisfies the criteria for a Credit Limit as outlined herein.

6.3 Maximum Credit Limit

Each new counterparty Credit Limit or increase to an existing limit will be reviewed by the RMT. The maximum amount of any Credit Limit extended to a counterparty shall not exceed $50,000,000[3] unless approved in writing by the Board.

6.4 Credit Review Exceptions

Counterparties not subject to the above credit review criteria include those associated with Day-Ahead and current day purchases where risks associated with market movements are minimal.

6.5 Credit Limit and Monitoring

The Middle Office will monitor the current credit exposure for each counterparty with whom CPA transacts and include such information in the Current Counterparty Credit Risk Report. This report will be submitted to the RMT for review pursuant to the reporting requirements outlined in Section 7.

Current credit exposure is a measure of the known exposures and composed of two primary exposures – (1) realized exposure, and (2) forward exposure. Realized exposure, a payable or receivable amount owed between counterparties, is a measurement of cash flow for billed and unbilled transactions. Forward exposure is a measure of current unrealized exposure and includes the measure of a counterparty's incentive to fulfill contractual obligations. Forward exposure measures the risk associated with having a payment default or the need to replace a transaction in the event of delivery default.

6.6 CPA Credit Support

Counterparties may require CPA to post a form of credit support, such as cash or a letter of credit. The

[3] Approximately 10% of annual power supply costs in 2020.

Middle Office will ensure that any CPA credit support requirements are evaluated and approved within the context of the overall transaction approval as specified herein.

Section 7: POSITION TRACKING AND MANAGEMENT REPORTING

A vital element in the ERMP is the regular identification, measurement and communication of risk. To effectively communicate risk, all risk management activities must be monitored on a frequent basis using risk measurement methodologies that quantify the risks associated with CPA's procurement-related business activities and performance relative to identified goals.

Minimum reporting requirements are shown below. The reports outlined below will be presented to the RMT. Reports will be generated weekly unless otherwise noted.

- **Financial Model Forecast**

  Latest projected financial performance, marked to current market prices, and shown relative to CPA's financial goals.

- **Net Position Report**

  Latest forward net position report, by product type (energy, PCC1, PCC2, Carbon Free Energy and RA capacity) for the current and prompt year.

- **Counterparty Credit Exposure**

  Current counterparty credit exposure compared against limits approved by CPA, as well as the limit assigned to CPA by the counterparty.

- **Monthly Risk Analysis**

  Cash flow forecasting and stress testing of financial forecasts relative to financial goals. Gross margin at risk reporting. Additional discussion of the specific gross margin at risk reporting and its application is provided in the Energy Risk Hedging Strategy.

- **Quarterly Board Report**

  Update on activities, projected financial performance, and general market outlook to be presented quarterly at Board meetings, communicated in a way to ensure CPA confidentiality and market sensitive data is not released.

Section 8: ERMP REVISION PROCESS

The ERMP will evolve over time as market and business factors change. At least on an annual basis, the Executive Director, in consultation with the RMT, will review the ERMP and associated procedures to determine if they should be amended, supplemented, or updated to account for changing business conditions and/or regulatory requirements. If an amendment is warranted, the ERMP amendment will be submitted to the Board for approval. Changes to ERMP appendices may be approved and implemented by the Executive Director, in consultation with the RMT, with the exception of new transaction types and changes to the Energy Risk Hedging Strategy, which also require Board approval.

8.1 Acknowledgement of ERMP

All CPA Representatives participating in any activity or transaction within the scope of the ERMP or in the case of a consultant, an executive of the consultant or a delegated representative authorized to bind the consultant with regard to ERMP obligations shall sign, on an annual basis or upon any revision, a statement approved by the Executive Director, in consultation RMT, that such CPA Representative has:

- Read the ERMP;
- Understands the terms and agreements of said ERMP;
- Will comply with said ERMP;
- If an employee, understands that any violation of said ERMP shall subject the employee to discipline up to and including termination of employment;
- If a consultant, understands that any violation of said ERMP may be grounds for consultant contract termination; and
- If a Board member, understands that any violation of said ERMP shall subject the Board member to action by the Board.

8.2 ERMP Interpretations

Questions about the interpretation of any matters of the ERMP should be referred to the Executive Director.

All legal matters stemming from the ERMP will be referred to CPA counsel.

Appendix A: DEFINITIONS

Back Office: That part of a trading organization which handles transaction accounting, confirmations, management reporting, and working capital management.

CAISO: California Independent System Operator. CAISO operates a California bulk power transmission grid, administers the State's wholesale electricity markets, and provides reliability planning and generation dispatch.

Carbon Free Energy: Energy that is generated from a specific zero carbon emitting generating asset. It is commonly used to note energy from large hydroelectric or nuclear generation that while non-carbon emitting, is not an RPS-eligible generation source. Sometimes referred to as specified source energy.

CCA: Community Choice Aggregator. CCAs allow local government agencies such as cities and/or counties to purchase and/or develop generation supplies on behalf of their residents, businesses and municipal accounts.

CFTC: Commodity Futures Trading Commission. The CFTC is a U.S. federal agency that is responsible for regulating commodity futures and swap markets. Its goals include the promotion of competitive and efficient futures markets and the protection of investors and market participants against manipulation, abusive trade practices and fraud.

Congestion Revenue Right: A point-to-point financial instrument in the Day-Ahead Energy Market that entitles the holder to receive compensation for or requires the holder to pay certain congestion related transmission charges that arise when the transmission system is congested.

Credit Limit: The maximum amount of financial exposure one party is willing to extend to another.

Day-Ahead Market: The short-term forward market conducted by an Organized Market prior to the operating day. It is intended to efficiently allocate transmission capacity and facilitate purchases and sales of energy and scheduling of bilateral transactions.

FERC: Federal Energy Regulatory Commission. FERC is a federal agency that regulates the interstate transmission of electricity, natural gas and oil. FERC also reviews proposals to build liquefied natural gas terminals, interstate natural gas pipelines, as well as licenses hydroelectric generation projects.

Front Office: That part of a trading organization which solicits customer business, services existing customers, executes trades and ensures the physical delivery of commodities.

Franchise Fee: A franchise fee is a percentage of gross receipts that an IOU pays cities and counties for the right to use public streets to provide gas and electric service. The franchise fee surcharge is a percentage of the transmission (transportation) and generation costs to customers choosing to buy their energy from third parties. IOUs collect the surcharges and pass them through to cities and counties.

IOU: An Investor Owned Utility (IOU) is a business organization providing electrical and/or natural gas services to both retail and wholesale consumers and is managed as a private enterprise.

Limit Structure: A set of constraints that are intended to limit procurement activities.

Middle Office: That part of a trading organization that measures and reports on market risks, develops risk management policies and monitors compliance with those policies, manages contract administration and credit, and keeps management and the Board informed on risk management issues.

PCIA: Power Cost Indifference Adjustment or successor. The PCIA is intended to compensate IOUs for their stranded costs when a bundled customer departs and begins taking generation services from a CCA.

Portfolio Content Category 1 (PCC1) Renewable Energy: Energy and bundled Renewable Energy Credits that is simultaneously procured from an RPS-Eligible Facility that is directly interconnected to the distribution or transmission grid within a California balancing authority area (CBA); or that is not directly interconnected to a CBA but is delivered to a CBA without substituting electricity from another source.

Portfolio Content Category 2 (PCC2) Renewable Energy: Energy and bundled Renewable Energy Credits that is simultaneously purchased from an RPS-Eligible Facility, but the energy is firmed and shaped with substitute electricity scheduled into a CBA within the same calendar year as the renewable energy is generated.

Portfolio Content Category 3 (PCC3) Renewable Energy: Renewable Energy Credits from RPS-eligible facilities that do not meet the definition of PCC1 or PCC2.

Real-Time Market: The real-time market is a spot market in which LSEs can buy power to meet the last few increments of demand not covered in their day ahead schedules, up to 75 minutes before the start of the trading hour.

Resource Adequacy Capacity: A capacity product whereby a Seller commits to a must offer obligation of its generator in the CAISO market and on behalf of a specified Load Serving Entity.

RPS-Eligible Facility: Defined under CA Public Utilities Code § 399.11 et seq. and CA Public Resources Code § 25740 et seq. as an electrical generating facility using technologies such as biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, ocean wave, ocean thermal, or tidal current.

Settlement: Settlement is the process by which counterparties agree on the dollar value and quantity of a commodity exchanged between them during a particular time interval.

Stress testing: Stress testing is the process of simulating different financial outcomes to assess potential impacts on projected financial results. Stress testing typically evaluates the effect of negative events to help inform what actions may be taken to lessen the negative consequences should such an event occur.

System of Record (SOR): An information storage system that is the authoritative data source for a given data element or piece of information.

Appendix B: ENERGY RISK HEDGING STRATEGY

1.1 Introduction

CPA is routinely exposed to commodity price risk and volume variability risk in the normal conduct of serving the power supply requirements of its customers.

This Energy Risk Hedging Strategy (ERHS) describes the strategy and framework that CPA will use to hedge the power supply requirements of its customers. Specific focus is on procurement of the following market-based products:

- Fixed Priced Energy
- Portfolio Content Category 1 Renewable Energy
- Portfolio Content Category 2 Renewable Energy
- Carbon Free Energy
- Resource Adequacy Capacity

In addition to market-based transactions entered into pursuant to this ERHS, CPA will also enter into longer-term power purchase agreements (PPAs) pursuant to statutory requirements (e.g., SB 350 mandate to, by 2021, procure a minimum of 65 percent of RPS requirements under a 10-year or longer power purchase agreement), as well as voluntary long-term resource acquisition decisions made independently by CPA pursuant to its Integrated Resource Plan or other approved Board-approved strategies. Long-term Power Purchase Agreements (PPAs) will count as hedges as described later in this ERHS.

2.1 Governance

This ERHS shall be updated, as necessary, from time to time and governed by the Energy Risk Management Policy (EMRP) approved by the CPA Board of Directors.

3.1 Hedging Program Goals

The overall goal of the ERHS is to identify exposure to commodity prices, quantify the financial impact variability in commodity prices, load requirements and generation output may have on the ability of CPA to meet its financial program goals, and manage the associated risk.

The primary goals that guide this ERHS are:

- Acquire a portfolio of resources with lower greenhouse gas emissions and higher renewable content than SCE;
- Meet reliability requirements established by the state of California, and operate in a manner consistent with prudent utility practice;

- Maintain competitive retail rates with SCE after adjusting for exit fees (currently the Power Charge Indifference Adjustment or PCIA) and Franchise Fees paid by CPA customers;
- Build financial reserves to ensure the CPA's long-term financial objectives are achieved.

All hedging activities will be conducted to achieve results consistent with the above goals and to meet the power supply requirements of CPA's customers. Any transaction that cannot be directly linked to a requirement of serving CPA's customers, or that serves to reduce risk is prohibited.

4.1 Hedging Targets and Strategies

4.1.1 Fixed Price Energy

Fixed Price Energy purchases provide for suppliers to deliver energy – for which CPA will receive energy market revenues – to CPA at a fixed price. They are used to manage the electricity commodity price risk that the CPA faces as a Load Serving Entity. Specific to CPA's customers, Fixed Price Energy hedges are used to provide cost certainty and rate stability.

CPA predominantly employs Fixed Price Block Energy contracts, which provide for suppliers to deliver a predetermined volume of energy at a constant delivery rate. As CPA enters into long- term, fixed price contracts for renewable and/or carbon-free energy, these will likewise hedge CPA's market risk and, subsequently, reduce the required volume of Fixed Price Block Energy purchases.

When assessing its requirements for Fixed Price Energy, CPA will use an econometric model to forecast hourly energy requirements and monthly peak demand by customer load class. The model will use historical data to estimate relationships between energy consumption and economic, demographic and/or weather variables. The model will be refined through time as additional load and other data is acquired.

CPA will observe the following schedule when hedging its Fixed Price Energy Requirements. The Minimum and Maximum hedge % represent the Fixed Price Energy planned or under contract divided by forecasted load.

Time Period	Minimum Hedge %	Maximum Hedge %
Prompt 1-4 Quarters	85	110
Balance of prompt year not covered by Prompt 4 Quarters	65	90
Current Calendar Year (CY) + 2	40	80
CY + 3	30	70
CY + 4	30	70
CY + 5	30	70

The hedge schedule for the Prompt Quarter will be measured as of 5 days prior to the first day of the quarter (e.g., on September 27, 2019, CPA will have hedged 85 to 110 percent of its projected energy requirements during Q4 2019 to Q3 2020).

The minimum hedge level will be achieved by implementing a time-driven programmatic strategy. Time-driven programmatic hedges are executed at a predetermined rate pursuant to a time schedule and without regard for market conditions. The purpose of these hedging transactions is to achieve a reduction in variability in power supply costs by gradually increasing the amount of energy hedged as the actual date of consumption approaches. Time-driven strategies avoid the inherent impossibility of trying to consistently and accurately "time the market" to purchase energy at least cost when making hedging decisions. Additionally, a load serving entity the size of CPA needs to spread its procurement efforts over time to effectively manage the potential negative price impacts of procuring a large volume of energy, over a short period of time, in an illiquid market.

Hedging decisions to reach targets between the minimum and maximum hedge levels will be based on price-driven or opportunistic strategies. The purpose of price-driven or opportunistic strategies is to capitalize on market opportunities when conditions are favorable. CPA will base its decision to execute opportunistic hedges on the anticipated impact to projected power supply costs and the resulting reduction in risk.

Opportunistic hedges may be executed when energy price levels are favorable to lowering the cost of power relative to established program goals and financial projections; alternatively, opportunistic hedges can be executed in adverse market conditions relative to financial goals in order to reduce the potential negative impact of continued upward trending commodity prices relative to established goals.

In executing this ERHS, Fixed-Price Energy hedges may be modified, repositioned or unwound for the purpose of maintaining hedge coverage that matches changes in forecast electric load. This includes the ability of the CPA to use liquid market products to hedge average loads over a defined time period and then later modify its hedges to more precisely match load.

4.1.2 Renewable Energy

In order to cost-effectively meet its GHG-reduction and renewable energy goals, CPA intends to meet a growing share of its energy supply requirements with renewable energy, a large portion of which will be Product Content Category 1 (PCC1) renewable energy. PCC1 renewable energy is sourced from a renewable generator that is either directly interconnected to the California Independent System Operator (CAISO) or another California Balancing Authority or directly scheduled into CAISO without use of substitute energy. CPA shall diversify its renewable energy portfolio further by incorporating Portfolio Content Category 2 (PCC2) renewable energy purchases. PCC2 renewable energy is sourced from renewable generators located outside the state of California where that generation is "firmed and shaped" for delivery into California. PCC2 purchases are typically less expensive and shorter in term than PCC1, so they provide a cost-effective and flexible method of augmenting CPA's renewable energy purchases to meet renewable portfolio content commitments to customers. However, not all PCC2 renewable energy is emissions-free; therefore, CPA must assess the value of PCC2s against its respective emissions intensity. In addition, RPS compliance rules set minimum requirements for PCC1 and PCC2 as a percentage of the total RPS compliance portfolio, which CPA will abide by in its procurement of both products.

In order to manage price risk of long-term renewable energy, and to allow CPA to prudently and methodically build a portfolio of long-term assets, CPA intends to meet its renewable energy targets with a blend of short and long-term contracts. CPA intends to fully comply with long-term contracting requirements mandated by SB 350; therefore, executed and planned long-term renewable contracts will be reflected in CPA's renewable energy positions.

CPA shall observe the following schedule while hedging its renewable energy requirements. This hedge schedule shall first be measured on December 1, 2020 and then on December 1 of each subsequent year for the Prompt Calendar year and the two following calendar years.

Time Period	Minimum Hedge %	Maximum Hedge %
Prompt Calendar Year	65	100
PY + 1	45	95
PY + 2	30	90
PY + 3	30	85
PY + 4	30	80

4.1.3 Carbon Free Energy

In pursuit of its GHG-reduction objections, CPA shall augment its renewable energy purchases outlined above with energy purchases from carbon-free energy generating facilities, which are typically hydro-electric resources located in California that are too large to qualify as Eligible Renewable Resources (30 MW or greater) or located outside of California. Similar to PCC2 renewable energy contracts, carbon-free energy purchases are typically short-term, most frequently one to three years in length.

CPA may have the opportunity to receive free carbon free allocations from SCE. Hedging activity should consider these allocations and expected allocations should be included in the hedging percentage.

CPA will observe the following schedule when hedging its Carbon-Free renewable energy requirements. The hedge schedule shall be measured on December 1 of each year for the Prompt Calendar year and the two subsequent calendar years.

Time Period	Minimum Hedge %	Maximum Hedge %
Prompt Calendar Year	75	100
PY + 1	50	75
PY + 2	25	50
PY + 3	0	40
PY + 4	0	40

In setting the above targets, it is important to note that the purchase of Carbon Free Energy is a voluntary requirement set by the CPA Board to exceed SCE's GHG emissions goals. In determining the total volume of Carbon Free Energy to be hedged, the CPA Board may elect to increase or reduce the total quantity of Carbon Free Energy included in CPA's portfolio as it seeks to balance multiple program objectives, including financial goals such as targets for financial reserves and retail rates.

4.1.4 Resource Adequacy Capacity

As a Load-Serving Entity (LSE) in California, CPA is required to demonstrate both annually and monthly that it has secured sufficient energy capacity to provide for its share of California's energy load; this capacity is referred to as Resource Adequacy (RA). Because CPA serves customers in SCE's service territory, CPA has local RA requirements specific to the Los Angeles Basin and Big Creek/Ventura local areas, as well as general RA requirements for Southern California ("South of Path 26 System"), a portion of which must be Flexible RA. Flexible RA requirements ensure resources are available on the grid to provide ancillary services such as ramping and regulation.

RA is typically transacted via contracts that vary in length from one month to three years, and it is currently bought and sold via a bilateral market, which not only provides cost-effective contracting opportunities but also proves at times to be fragmented and volatile. While a waiver process exists to excuse LSEs from their RA requirements, it is the goal of CPA to meet all RA requirements, including local, flex, and system products, and not use the RA waiver process.

CPA will observe the following schedule when hedging its RA requirements. The hedge schedule shall be measured for the system RA product by month that CPA is required to procure on December 1 of each year for the Prompt Calendar year and the two subsequent calendar years.

Time Period	**Minimum Hedge % (applicable to all months)**	**Maximum Hedge % (applicable to peak month only)**[4]
Prompt Calendar Year	90	100
PY + 1	50	95
PY + 2	30	90
PY + 3	20	80
PY + 4	20	80

4.1.5 Congestion Revenue Rights (CRRs)

As a CAISO market participant, CPA has congestion risk associated with serving its customer load. CPA manages congestion risks by preferring day ahead scheduling of energy delivered at SP-15, and by resource assessment and selection consistent with this Policy. Once energy is procured, CPA manages congestion risk through the prudent management of CRRs, which are financial instruments used to hedge against transmission congestion costs encountered in the CAISO day-ahead market. The RMT is responsible for overseeing the management of CRRs and CRR trading. The CRR portfolio will be managed by CPA's Scheduling Coordinator as directed by the RMT. CRRs are transacted to effectively manage portfolio congestion risk. Trading of CRRs for speculative purposes is not permitted.

[4] Due to the variable nature of CPA's monthly RA requirements, non-peak months may exceed the applicable Maximum Hedge %.

5.1 Hedge Program Metrics

The success of the Energy Risk Hedging Strategy will be measured by realizing power supply costs in line with the budgeted power supply costs used to set customer rates, as well as by reducing CPA's exposure to commodity price risk.

Current projected power supply costs will be compared to budgeted power supply costs where budgeted costs will be based on the assumptions used at the time customer generation rates are set. Current power supply costs shall use all fixed priced contracts executed as of the date of the report. All open positions will be marked to market and compared to the budgeted power supply costs.

The Front and Middle Office will use a variety of industry standard metrics to evaluate open positions and potential hedge transactions. RMT will review these metrics when making price-driven or opportunistic hedging decisions to ensure that the transactions are consistent with the goals of the Energy Risk Hedging Strategy. These metrics will be updated and reported on a monthly basis.

6.1 Reporting Requirements

The following reporting is required to manage the hedge program and to ensure its success:

- Net position report for each product
- Current projected power supply costs compared to budget
- Gross margin at Risk
- GHG intensity

Appendix C: AUTHORIZED TRANSACTION TYPES

All transaction types listed below must be executed within the limits set forth in the ERMP. Definitions for each product are provided in Appendix A.

- **CAISO Market Products**
  - **Day-Ahead Market Energy** (Energy purchased from the CAISO Day-Ahead Market.)
  - **Real-Time Market Energy** (Energy purchased from the CAISO in the Real-Time Market)
  - **Congestion Revenue Rights** (A point-to-point financial instrument in the Day-Ahead Energy Market that entitles the holder to receive compensation for or requires the holder to pay certain congestion related transmission charges that arise when the transmission system is congested.)
  - **Convergence Bids** (Financial positions, either demand or supply, taken in the Day-ahead Market and liquidated in the Real-Time Market.)
  - **Inter-Scheduling Coordinator Trades** (A trade between two Scheduling Coordinators that is a settlement service that CAISO offers to parties of a bilateral contract as a means of offsetting CAISO settlement charges against bilateral contractual payment responsibilities.)
- **Physical Energy Products**
  - **Short-Term Energy** (Energy traded in the CAISO market or bilaterally for a duration less than one year.)
  - **Long-Term Energy (**Energy traded in the CAISO market or bilaterally for a duration greater than one year.)
  - **Physical Over-the-Counter (OTC) Options** (Call options that give the buyer the right, but not the obligation, to buy an underlying power product at agreed upon terms as detailed in a confirmation agreement; or put options that give the seller the right, but not the obligation, to sell an underlying power product at agreed upon terms as detailed in a confirmation letter.)
- **Resource Adequacy Capacity** (A capacity product whereby a Seller commits to a must offer obligation of its generator in the CAISO market and on behalf of a specified Load Serving Entity.)
- **Import Capability Rights** (Entitles an LSE to count Resource Adequacy products at a specified import location toward its Resource Adequacy Requirements.)
- **Physical Environmental Products**
  - **PCC1, PCC2 and PCC3 Renewable Energy** (see definition in Appendix A)[5]
  - **Carbon Free Energy** (see definition in Appendix A)
  - **Air Resource Board Allowances** (An allowance is a tradeable permit issued by the California Air Resource Board to emit one metric ton of a carbon dioxide equivalent greenhouse gas emission.)
- **Financial Hedging Products**
  - **Futures Contracts** (A contract to buy or sell a commodity (electricity) at a predetermined price at a specified time in the future. Futures Contracts are standardized for quality and quantity to facilitate trading on a futures exchange (e.g., Intercontinental Exchange).)

[5] Clean Power Alliance's Joint Power's Agreement discourages the purchase and use of PCC3 products. PCC3 products will only be acquired under exceptional circumstances requiring the use of this product to achieve the agency's environmental and financial goals.

    - **Swaps** (Financial contracts in which one party agrees to pay a cash flow calculated by multiplying a fixed volume by a fixed price (fixed price payer) and the other party agrees to pay a cash flow calculated by multiplying the same fixed volume times a market reference index price (floating price payer). At settlement, the party owing the higher amount pays the net difference. Swaps are transacted in over-the-counter markets.)
    - **Call and Put Options** (Call options give the buyer the right, but not the obligation, to purchase energy or other instruments. Put options give the buyer the right, but not the obligation, to sell energy or other instruments.)
    - **Options on Swaps (Swaptions)** (call options give the buyer the right, but not the obligation, to enter into a swap transaction as the fixed price payer. A put option gives the buyer the right, but not the obligation, to enter into a swap transaction as the floating priced payer.)
- **<u>Transmission</u>** (The reservation and transmission of capacity and energy between two points on a transmission provider's system.)
- **<u>Tolling Agreements</u>** (Agreement between a power buyer and a power generator, under which the buyer supplies the fuel, either physically or financially, and receives an amount of power generated based on an assumed conversion rate at an agreed cost.)

Appendix D: NEW TRANSACTION TYPE APPROVAL FORM

New Transaction Type Approval Form

Prepared By:

Date:

New Transaction Type Name:

Business Rationale and Risk Assessment:

- Product description – including the purpose, function, expected impact on net revenues (i.e., increase, manage volatility, control variances, etc.) and/or benefit to CPA
- Identification of the in-house or external expertise that will be relied upon to manage and support the new or non-standard transaction
- Assessment of the transaction's risks, including any material legal, tax or regulatory issues
- How the exposures to the risks above will be managed by the limit structure
- Proposed valuation methodology (including pricing model, where appropriate)
- Proposed reporting requirements, including any changes to existing procedures and system requirements necessary to support the new product
- Proposed accounting methodology
- Proposed Middle Office work flows/methodology, including systems
- Brief description of the responsibilities of various departments within CPA who will have any manner of contact with the new or non-standard transaction

Reviewed by:

Director of Power Planning & Procurement	**Date**
Chief Operating Officer	**Date**
Executive Director	**Date**

Appendix E: NOTICE OF CONFLICT OF INTEREST

To: [insert title]

Declaration of Conflict of Interest

I understand that I am obligated to give notice in writing to Clean Power Alliance of any interest or relationship that I may have in any counterparty that seeks to do business with Clean Power Alliance, and to identify any real or potential conflict of interest such counterparty has or may have with regard to any existing or potential contract or transaction with Clean Power Alliance, within 48-hours of becoming aware of the conflict of interest.

I would like to declare the following existing/potential conflict of interest situation arising from the discharge of my duties concerning Clean Power Alliance activities covered by the scope of the ERMP:

a) Persons/companies with whom/which I have official dealings and/or private interests:

____

____

b) Brief description of my duties which involved the persons/companies mentioned in item a) above.

____

____

Position and Name: __________________________

Signature: ___________________________________

Date: _______________________________________

Appendix F: CODE OF MARKETING AND TRADING PRACTICES

See next page.

Clean Power Alliance of
Southern California
Code of Marketing and Trading Practices
July 12, 2018

Definitions

Marketing and Trading Employee – Any employee, contractor, consultant, or agent of CPA who engages in procurement activity.

Scope of Code

This Code of Marketing and Trading Practices (the "Code") applies to all CPA Marketing and Trading Employees. Each person subject to this Code is required to read, understand, and abide by the provisions contained in this Code.

Purpose

In addition to demonstrating CPA's commitment to ethical business practices, this Code is designed to ensure that CPA complies with its obligations under state and federal laws, rules and regulations promulgated by various governmental agencies, and applicable policies adopted by CPA. This Code defines and affirms the values and principles that CPA's Marketing and Trading Employees must follow in conducting their business activities. The Code is intended to complement the other policies, procedures and processes of CPA and to guide traders and marketers as they negotiate transactions, arrange for transmission, and manage risk.

Compliance with the Code allows CPA to assure its counterparties, potential customers, regulators, and the public that its business activities are, and will continue to be, conducted with integrity and unlawful/unethical trading practices will not be tolerated.

Questions about compliance with industry and company regulations as well as with this Code should be referred to CPA's General Counsel.

Policy

CPA's Marketing and Trading Employees shall:

1. Conduct business in good faith and in accordance with all applicable laws, regulations, tariffs and rules.
2. Endeavor to always act in the best interests of CPA's customers.
3. Not disseminate, cause to be disseminated or facilitate the dissemination of known false or misleading information, or engage in transactions in order to exploit known false or misleading information.
4. Engage only in transactions with legitimate business purposes.
5. Not knowingly arrange or execute wash trades.
6. Not engage in any activity with the intent to alter any market price or otherwise interfere with the normal operation of a well -functioning competitive market.
7. Not engage in price reporting or furnishing transaction prices to any entity that collects prices to be used in the calculation of a price index or for distribution to subscribers, without prior written approval of CPA's General Counsel.
8. Not collude with other market participants to: (i) affect the price of any commodity; (ii) allocate territories, customers or products; or (iii) otherwise restrain competition.

9. Not engage in transactions for commodities or services without the intention of providing those specific commodities or services.
10. Not reserve service, attempt to reserve service, access information, or attempt to access information from any transmission service provider except through means available to all eligible customers.
11. Successfully complete yearly CPA compliance training.
12. Comply with requirements that trading and marketing activities are recorded and retained.
13. Cooperate with any audit or investigation into trading and marketing activities.

Duty to Report Violations and Non-Retaliation Clause

A Marketing and Trading Employee who believes that a violation of the Code has occurred is required to promptly notify CPA's Chief Operating Officer. CPA shall make every effort to ensure the confidentiality of the reporting Marketing and Trading Employee. If the reporting Marketing and Trading Employee is a CPA employee, CPA shall not discharge, suspend, demote, harass, layoff, deny a promotion, or take any other retaliatory action against that employee solely as a result of the act of reporting a suspected violation of the code. This in no way affects CPA's rights as an employer with respect to all other issues. CPA will monitor and follow up to ensure that employees who have reported alleged violations have not been subject to retaliation.

Disciplinary Action

Any failure to abide by this Code, including the Duty to Report Violations, will result in disciplinary action. All potential violations are handled on a case-by-case basis and will result in a full review by, at minimum, the following individuals: the CPA employee's immediate supervisor and CPA's General Counsel. Factors that are considered in setting the disciplinary action plan include but are not limited to: source of violation discovery (self-reported, peer-reported, reported by a third party, via internal procedures, or the result of an audit), intent (accidental or intentional), type and magnitude of risk that the CPA employee exposed CPA to (financial, reputation, etc.), and frequency of the violation (first offense or history of multiple offenses).The disciplinary actions taken may involve demotion, loss of compensation (suspension without pay), and termination of employment.

I have read CPA's Code of Marketing and Trading Practices, understand its requirements, and agree to abide by its provisions.

______________________	______________________	__________
Signature	Printed Name	Date