



REDWOOD COAST  
**EnergyAuthority**

# Energy Risk Management Policy

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## Section 1: POLICY OVERVIEW

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### 1.1 Background and Purpose

The Redwood Coast Energy Authority (“RCEA”) is a public joint powers agency located within the geographic boundaries of Humboldt County. Member agencies of RCEA include the seven (7) incorporated cities located in Humboldt County, the County of Humboldt, and the Humboldt Bay Municipal Water District. RCEA members administer and participate in a community choice aggregation (“CCA”) program. The CCA program allows its members to procure electricity supplies and utilize ratepayer revenue to implement local programs that meet the goals of the community. Electricity procured to serve customers continues to be delivered over PG&E’s transmission and distribution system.

Presently, RCEA’s CCA Members<sup>1</sup> include the following local government entities:

- Unincorporated Humboldt County
- City of Arcata
- City of Blue Lake
- City of Eureka
- City of Ferndale
- City of Fortuna
- City of Trinidad
- City of Rio Dell

Providing retail electric generation service to customers enrolled in the CCA program exposes RCEA to risks such as retail load uncertainty (due to weather, customer opt-out, and other factors), energy market price, counterparty credit, PG&E generation and PCIA rate competitiveness and other regulatory risks.

This Energy Risk Management Policy (“Policy”) establishes RCEA’s Energy Risk Management Program (“Program”) including risk management functions and procedures to manage the risks associated with power procurement activities.

The ultimate purpose of this Policy is to help RCEA increase the likelihood of achieving its goals by specifying management responsibilities, organizational structures, risk management standards, and operating controls and limits necessary to properly identify and manage RCEA’s exposure to risk.

The RCEA Board of Directors is responsible for approving wholesale power procurement risk related policies, including delegations of authority and limits to the Executive Director, RCEA staff and, as warranted, third-party service providers. The Board understands and acknowledges that energy trading activities necessarily involve risk and a key Board objective is to quantify and balance value and risk within RCEA’s resource portfolio without engaging in speculative trading activity. Within the guidelines of this policy, the Board recognizes that while the application of expertise must be employed in managing RCEA’s

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<sup>1</sup> The Humboldt Bay Municipal Water District is a customer of the CCA but does not participate as a voting member in CCA governance

resource portfolio, staff and third-party service providers may exercise some reasonable discretion in making commercial trading decisions.

## 1.2 Scope

Unless otherwise explicitly stated in this Policy, or other policies approved by the Board, this Policy applies to all power procurement and related business activities that may impact the risk profile of RCEA. This Policy documents the framework by which staff and The Energy Authority<sup>2</sup> (“TEA”) will:

- Identify and quantify risk
- Develop and execute procurement strategies
- Create a framework of controls and oversight
- Monitor, measure, and report on the effectiveness of the Program

To ensure successful operation of the CCA, RCEA has partnered with experienced contractors to provide energy-related services. Specific to power procurement, RCEA has partnered with TEA. TEA currently executes the preponderance of front- (transacting), middle- (monitoring) and back-office (settlement) related activities on RCEA’s behalf. In providing these services, TEA observes the policies outlined in this document. TEA maintains its own risk policies and procedures, following industry practices of segregation of duties, which will also govern activities executed on RCEA’s behalf.

## 1.3 Energy Risk Management Objective

The objective of the Energy Risk Management Policy is to provide a framework for conducting procurement activities that maximizes the probability of RCEA meeting the goals listed in Section 2.1.

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

## 1.4 Policy Administration

This Policy document has been reviewed and approved by the RCEA Board of Directors (“Board”). The Risk Management Team (“RMT”) and Board must approve amendments to this Policy, except for the appendices, which may be amended with approval of only the RMT. The RMT must give notice to the Board of any amendment it makes to an appendix or a reference policy or procedure document.

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<sup>2</sup> The Energy Authority is RCEA’s current portfolio manager and scheduling coordinator for its load and long-term power contracts.

## Section 2: GOALS AND RISK EXPOSURES

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### 2.1 Policy Goals

To help ensure long term viability for the CCA, RCEA has outlined the following Policy goals with respect to its Energy Risk Management Program. These goals establish metrics used for modeling and measuring risk exposures of the CCA.

- RCEA targets to fund financial reserves with the following objectives:
  - Establish long-term business sustainability
  - Build collateral for power procurement activities
  - Establish and maintain an investment grade credit rating
  - Develop a source of funds for investment in power resources and other local programs
  - Stabilize retail electricity rates and dampen year-to-year variability in procurement costs
- RCEA aims to meet its strategic objectives as found in the RePower Humboldt Comprehensive Action Plan for Energy

The goals outlined above are incorporated into RCEA's financial and analytic models used to evaluate risk exposures. It is important to note that the goals listed above are not intended to be a comprehensive list of goals for the CCA. Rather, the above reflect a subset of program goals that are critical to long-term business viability for the CCA.

### 2.2 Risk Exposures

The Program faces a range of risks during launch and ongoing operation:

- 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 is a significant CCA risk. It includes any conditions or events that create uncertainty in the CCA's customer base, thereby increasing the potential for the CCA to not meet its Policy goals. This Policy addresses this risk and other risk types listed below. These risks are not all inclusive but are identified as the risk factors driving the success of the CCA.

The most relevant measures of the success of this Policy in mitigating opt-out risk include:

- Retail rate competitiveness with PG&E;

- Financial reserve level for retail rate stabilization;
- Percentage of customer opt-outs by customer count and by load.

For the purpose of this Policy, risk exposure is assessed on all transactions (energy, environmental attributes, capacity, etc.) executed by TEA on behalf of RCEA, or by RCEA on its own behalf, as well as the risk exposure of open positions and the impacts of these uncertainties on the CCA's load and financial obligations.

### **2.2.2 Market Risk**

Market risk is the uncertainty of RCEA'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 RCEA's procurement costs and can materially impact RCEA's financial position. Market risk is managed by regular measurement, execution of approved procurement, and Congestion Revenue Right (CRR) strategies and the limit structure set forth in this Policy, as well as:

- Regular monitoring and reporting of actual and projected financial results including probability-based and stressed financial results assuming a range of market and retail rate scenarios (both RCEA and PG&E);
- Structuring procurement strategies with the objective function of maintaining a favorable retail rate savings relative to PG&E.

### **2.2.3 Regulatory Risk**

Although CCAs have gained a significant share of retail customer load in the state of California, they remain a comparatively new legal entity and are subject to an evolving legal and regulatory landscape. Additionally, CCAs are in direct competition with California's Investor-Owned Utilities ("IOUs"), which are able to recover costs of stranded investments in generation assets and power purchase agreements previously procured to serve loads that subsequently depart the IOU and obtain generation through a CCA. The stranded costs of these legacy power supplies are allocated to departing CCA loads through regulatory proceedings at the CPUC which are not always transparent to the CCA community. The service model and regulatory landscape results in retail rate competitiveness risks that are unique to CCAs. In addition, CCAs are subject to many of the same state-level regulatory policies that govern other load-serving entities, including the Renewable Portfolio Standard, Resource Adequacy Program, and Integrated Resource Planning process and procurement mandates. To manage regulatory risk, RCEA:

- Regularly monitors, analyzes of, and engages in, legislative and regulatory proceedings impacting CCAs, either directly or through the California Community Choice Association ("CalCCA");
- Ensures timely submission of regulatory filings, compliance filings and data request responses, and tracking changing requirements associated with these submissions;
- Ensures timely procurement and project progress reporting, and to the extent feasible and prudent conducting proactive procurement, in response to procurement mandates.

### 2.2.4 Volumetric Risk

Volumetric risk is the uncertainty of RCEA's financial performance due to variability in the quantity of retail load served by RCEA. Retail load uncertainty results from unanticipated large customer additions or departures, customer opt-outs, weather deviation from normal, unforeseen increased adoption of behind the meter generation by RCEA customers, as well as local, state and national socioeconomic conditions. Volumetric risks can also occur on the wholesale procurement side, including risk of curtailed variable energy resources under contract to RCEA, unplanned disconnection of generating resources under contract to RCEA during utility maintenance or islanding of the local grid in response to Public Safety Power Shutoff events, and the unknown volumetric delivery of resources procured through PG&E's RPS Voluntary Allocation and Market Offer and Carbon Free Allocation processes. Volume risk is managed by taking steps to:

- Forecast PG&E generation and PCIA rates, and variability therein;
- Quantify variability in procurement timing and costs;
- Develop risk-adjustment metrics for forecasted loads and forecasted delivered volumes to support future procurement decisions
- Monitor and adjust for non-regulatory factors driving volumetric uncertainty (e.g. weather);
- Adopt a formal energy risk hedging strategy (included as an appendix to this Policy and accompanied by confidential procurement schedules);
- Implement a key accounts program and maintain strong relationships with the local community;
- Monitor trends in customer onsite generation, economic shifts, and other factors that affect electricity customer volume and composition;
- Pursue strategies to minimize or mitigate generation disconnections and curtailments, including co-locating storage with variable renewable energy resources and working with PG&E toward accommodation of third-party generators while the local grid is operated in island mode;
- Engage the IOU to conduct transmission and distribution updates and technical advances to better interconnect emerging distributed generation resources;
- Explore expanding the customer base of the CCA into other counties and include direct access loads.

### 2.2.5 Model Risk

Model risk is the uncertainty of RCEA's financial performance due to potentially inaccurate or incomplete characterization of a transaction or power supply portfolio elements due to fundamental deficiencies in models, inputs, and/or information systems. Model risk is managed by:

- TEA Risk Management Committee approval, and RCEA RMT ratification of, financial and risk models;
- Ongoing review of model inputs and outputs as part of controls framework, including scheduled true-ups of data actuals and data cross-validation between RCEA and TEA;
- Comparison between multiple independent data sources as available and valuable
- Ongoing RCEA and TEA staff education and participation in CCA industry forums;
- Ongoing update and improvement of models as additional information and expertise is acquired

### **2.2.6 Operational Risk**

Operational risk is the uncertainty of RCEA's financial performance due to weaknesses in the quality, scope, content, or execution of human resources, technical resources, and/or operating procedures within RCEA. Operational risk can also be exacerbated by fraudulent actions by employees or third parties, inadequate or ineffective controls, or unforeseen changes in our relationship with the incumbent utility. Operational risk is managed through:

- The controls set forth in this Policy;
- RMT oversight of procurement activity;
- Timely and effective management reporting;
- Staff resources, expertise and/or training reinforcing a culture of compliance;
- Ongoing and timely internal and external financial and operational audits;
- Enforcement of RCEA's CCA terms and conditions, including customer debt collection;
- Adhering to data security requirements in RCEA's Information Security Policy and the CPUC's Customer Data Privacy Decision 12-08-045.

### **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. RCEA's exposure to counterparty credit risk is controlled by:

- Adhering to the limit controls set forth in the Credit Policy described in Section 6;
- Requiring counterparties to post performance assurance in an acceptable form as part of long-term agreements
- Ensuring terms under which the performance assurance is retained or returned to the counterparty are clearly defined and adhered to.

### **2.2.8 Reputation Risk**

Reputation risk is the potential that the CCA's reputation is harmed, causing customers to opt-out of the CCA's service and migrate back to PG&E. Reputational risk is managed through:

- Implementation and adherence to this Energy Risk Management Policy;
- Establishment and adherence to industry best practices including both those adopted by other CCAs, as well as those adopted by traditional municipal electric utilities.
- Establishing a Community Advisory Committee (CAC) to support RCEA's public engagement efforts and to provide decision-making support and input to the RCEA Board.
- Consultation with general counsel and outside expert counsel on procurement processes and best practices as a public agency with respect to transparency and public participation

## **2.3 Risk Measurement Methodology**

A vital element in RCEA's Energy Risk Management Policy 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 RCEA's procurement-related business activities and performance relative to goals.

Risk measurement of RCEA's position will be performed using a method that calculates projected procurement costs and portfolio value on an annual basis at various probabilities and that further provides a comparison of projected RCEA retail rates to those of PG&E. The rate comparison will be adjusted for actual and projected PCIA and Franchise Fee charges. Risk measurement methodologies shall be re-evaluated on a periodic basis to ensure RCEA and TEA adjust their methods to reflect the evolving regulatory and competitive landscape. The implementation of these methods shall be overseen and validated by TEA and ratified by the RMT.

## **Section 3: BUSINESS PRACTICES**

### **3.1 General Conduct**

It is the policy of RCEA that all personnel, including the Board, management, and agents, adhere to standards of integrity, ethics, conflicts of interest, compliance with statutory law and regulations and other applicable RCEA standards of personal conduct while employed by or affiliated with RCEA.

### **3.2 Trading for Personal Accounts**

All RCEA Directors, management, employees, and agents participating in any transaction or activity within the coverage of this Policy are obligated to give notice in writing to RCEA of any interest such person has in any counterparty that seeks to do business with RCEA, and to identify any real or potential conflict of interest such person has or may have with regard to any contract or transaction with RCEA. Further, all such persons are prohibited from personally participating in any transaction or similar activity that is within the coverage of this Policy and that is directly or indirectly related to the trading of electricity, capacity and/or environmental attributes as a commodity. The Risk Management Team voting members are further required by RCEA's Conflict of Interest Code to file a Fair Political Practices Commission Statement of Economic Interests form disclosing personal energy- and agency-related financial holdings annually.

If there is any doubt as to whether a prohibited condition exists, then it is the employee's responsibility to discuss the possible prohibited condition with her/his manager or supervisor.

### **3.3 Adherence to Statutory Requirements**

Compliance is required with rules promulgated by the state of California, California Public Utilities Commission, California Energy Commission, California Air Resources Board, California Independent System Operator, Federal Energy Regulatory Commission (FERC), Commodity Futures Trading Commission (CFTC), and other regulatory agencies.

Congress, FERC and CFTC have enacted laws, regulations and rules 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 to state 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 RCEA. This Policy is intended to comply with these laws, regulations, and rules and to avoid improper conduct on the part of anyone employed by RCEA. These procedures may be modified from time to time by legal requirements, auditor recommendations, RMT requests, and other considerations.

In the event of an investigation or inquiry by a regulatory agency, RCEA will provide legal counsel to employees. However, RCEA will not appoint legal counsel to an employee if RCEA's General Counsel and Executive Director determine that the employee was not acting in good faith within the scope of employment.

RCEA employees are prohibited from working for another power supplier, CCA, or utility in a related position while they are simultaneously employed by RCEA unless an exception is authorized by the Board. For clarity, this prohibition is not intended to prevent RCEA staff from performing non-CCA activities on behalf of RCEA in the normal course of its business.

In addition, power purchase agreements and materials submitted in response to RCEA solicitations will be subject to disclosure in accordance with the California Public Records Act (Ca. Government Code section 6250 et seq.) and language reflecting this requirement will be included in RCEA solicitations and agreements. RCEA will withhold from public disclosure only those portions of solicitation materials and agreements which are exempt from disclosure under state law.

### **3.4 Transaction Type, Regions and Markets**

Authorized transaction types, regions and markets are listed in Appendix A to this Policy. These transaction types, regions and markets are and shall continue to be focused on supporting RCEA's financial policies, including the approved procurement strategy in Appendix D. New or non-standard transaction types may provide RCEA with additional flexibility and opportunity but may also introduce new risks. Therefore, transaction types, regions, and markets not included in Appendix A, or transactions within already approved transaction types that are substantially different from any prior transaction executed by RCEA, must be approved by the RMT prior to execution using the process defined below.

When seeking approval for a new or non-standard transaction type, region, and/or market, a New Transaction Approval Form, as shown in Appendix B, should be drafted describing all known significant elements of the proposed transaction and addressing all items listed in that form.

It is the responsibility of TEA's Front Office to ensure that relevant departments have reviewed the proposed transaction and that material issues are resolved prior to submittal to the RMT for approval. If approved, Appendix A to the Policy will be updated to reflect the new transaction type.

### **3.5 Counterparty Suitability**

TEA's counterparty credit limits and approval processes will govern counterparty suitability for all transactions executed by TEA on behalf of RCEA. TEA will provide a credit review and recommendation, consistent with the credit policies described in Section 6, for any counterparty with whom RCEA contracts directly.

### **3.6 System of Record**

TEA's Middle Office will maintain a set of records for all transactions executed in association with RCEA procurement activities. The records will be maintained in US dollars and transactions will be separately recorded and categorized by type of transaction. This system of record shall be auditable.

### **3.7 Transaction Valuation**

Transaction valuation and reporting of positions shall be based on objective, market-observed prices. Open positions should be valued (marked-to-market) daily, based on consistent valuation methods, and data sources. Whenever possible, mark-to-market valuations should be based on independent, publicly available market information and data sources.

### **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 RCEA portfolio under adverse conditions. Stress testing is used to understand the potential variability in RCEA's projected procurement costs, and resulting retail rate impacts and competitive positioning, associated with low probability events. The TEA Middle Office will perform stress-testing of the portfolio as needed and distribute results. The Risk Management Team will provide guidance to TEA as needed regarding what parameters should be stress tested and to what degree.

### **3.9 Trading Practices**

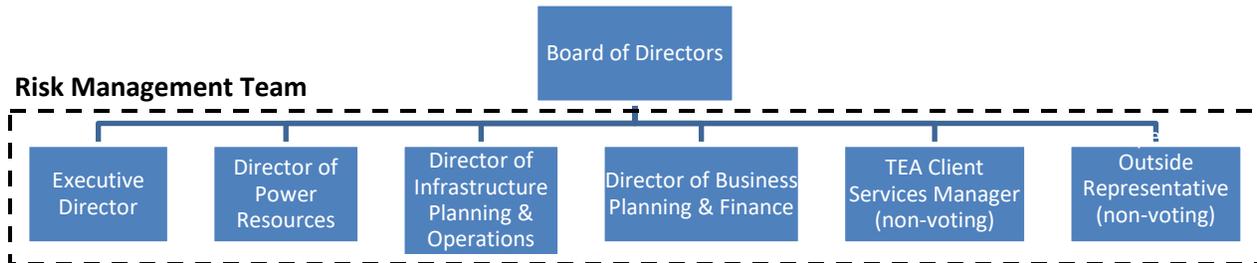
The approved scope of market participation by RCEA is limited to those activities required to capture reasonably expected value and cost stability from RCEA's resource portfolio without engaging in speculative or unauthorized trading activities. Staff and TEA may exercise some discretion on trade timing and volumes subject to exigent conditions (such as unusual weather, periods of illiquidity, load/generation deviations, and/or power system circumstances). RCEA procurement practices are intended to prohibit the acquisition of unwarranted or additional exposure to price and volume risk beyond that projected and associated within the efficient utilization and optimization of RCEA's resource portfolio. If any questions arise as to whether a particular transaction constitutes speculation, the RMT shall review the transaction(s) to determine whether the transaction would constitute speculation and document its finding in the meeting minutes.

## Section 4: ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

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### 4.1 Risk Management Organizational Structure

Below is a high-level organization chart describing RCEA’s risk management governance.



### 4.2 Board of Directors

The RCEA Board of Directors has the responsibility to review and approve this Policy. With this approval, the Board assumes responsibility for understanding the risks RCEA is exposed to due to CCA Program activity and how the policies outlined in this document help RCEA manage the associated risks. The Board of Directors is also responsible to:

- Determine RCEA strategic direction
- Understand the procurement strategy employed
- Approve risk exposures beyond the RMT’s authority
- Approve voting Members of the RMT

### 4.3 Risk Management Team (RMT)

The RMT is responsible for implementing, maintaining and overseeing compliance of this Policy. The voting members of the RMT shall be Board-approved RCEA staff members. Additionally, an independent outside third-party representative, and TEA’s client services manager assigned to RCEA, will serve as non-voting members. Each voting member will be assigned one vote. The current voting members of the RMT are:

- Executive Director
- Director of Power Resources
- Director of Infrastructure Planning and Operations
- Director of Business Planning and Finance

The primary goal of the RMT is to ensure that the procurement activities of RCEA are executed within the guidelines of this Policy and are consistent with Board directives. The RMT is also responsible to consider and propose recommendations to this Policy when conditions dictate.

Pursuant to direction from the Board of Directors and the limitations specified by this Policy, the RMT and the Executive Director maintain full authority over all procurement activities for RCEA. This authority includes, but is not limited to, taking any or all actions necessary to ensure compliance with this Policy.

The RMT is responsible for overseeing implementation of this Policy, procurement strategies, and the adoption of new product types. The RMT is also responsible for ensuring procurement strategies are consistent with RCEA's strategic objectives and for reviewing financial results. The RMT shall meet at least quarterly and record business in meeting minutes that will be approved by the RMT. No decision of the RMT is valid unless a majority of voting members has stated approval with a quorum of voting members participating in the vote, including the Executive Director. A quorum consists of a simple majority of RMT voting members, i.e. three of the four voting members. All decisions by the RMT, other than those made by common consent, shall be made by simple majority vote of the RMT members with the Executive Director having veto authority.

The RMT maintains the authority and responsibility to:

- Approve and ensure that all procurement strategies are consistent with this Policy;
- Determine if changes in procurement strategies are warranted;
- Approve new transaction types, regions, markets and delivery points;
- Understand financial and risk models used by TEA;
- Understand counterparty credit review models and methods for setting and monitoring credit limits;
- Receive and review reports as described in this Policy;
- Meet to review actual and projected financial results and potential risks;
- Authorize individual transactions that exceed the Executive Director's authority as indicated in Section 5 below;
- Escalate to the Board of Directors with any risks beyond the RMT's authority;
- Review summaries of limit violations;
- Review the effectiveness of RCEA's energy risk measurement methods;
- Maintain this Policy;
- Monitor regulatory and legislative activities.

## **4.4 Power Manager**

RCEA has partnered with TEA as its Power Manager. TEA, as outlined in its Risk Policy, maintains a strong segregation of duties, also referred to as "separation of function" that is fundamental to manage and control the risks outlined in this Policy. The Power Manager will provide education to the RMT on the risk and credit models, methods, and processes that it uses to fulfill its obligations under this Policy. Individuals responsible for legally binding RCEA to a transaction will not also perform confirmation, or settlement functions. With this in mind, TEA's responsibilities are divided into front-middle-back office activities, as described below.

### **4.4.1 Power Manager - Front Office**

The Power Manager's Front Office has overall responsibility for (1) managing all commodity and transmission activities related to procuring and delivering resources needed to serve RCEA's load, (2) the analysis of fundamentals affecting load and supply factors that determine RCEA's net position, and (3) transacting within the limits of this Policy, and associated policies, to balance loads and resources, and

maximize the value of RCEA's assets through the exercise of approved optimization strategies. Other duties associated with the Power Manager's Front Office include:

- a. Assist in the development and analysis of risk management hedging products and strategies, and bring recommendations to the RMT
- b. Prepare each month a monthly operating plan for the prompt months that gives direction to the day-ahead and real-time trading and scheduling staff regarding the bidding and scheduling of RCEA's resource portfolio in the CAISO market
- c. Develop, price, negotiate and execute all approved transactions within TEA's delegation of authority
- d. Forecast day-ahead and monitor / forecast same-day loads
- e. Keep accurate records of all executed transactions

#### **4.4.2 Power Manager – Middle/Back Office**

The Power Manager Middle Office provides independent market and credit risk oversight. The Power Manager Middle Office is functionally and organizationally separate from the Front Office. The Power Manager Back Office 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 this Policy. The Power Manager Back Office is also functionally and organizationally separate from the Front Office.

The Power Manager's Middle and Back Offices have primary responsibility for trading control and for ensuring agreement with counterparties regarding the terms of all trades, including forward trading. The Power Manager's Middle and Back Offices have the primary responsibility for:

- a. Estimating and publishing daily forward monthly power and natural gas price curves for a minimum of the balance of the current year through the next calendar year
- b. Calculating and maintaining the net forward power positions of RCEA
- c. Ensuring that RCEA adheres to all risk policies and procedures of both RCEA and the Power Manager in letter and in intent
- d. Maintaining the overall financial security of transactions undertaken by the Power Manager on behalf of RCEA
- e. Implementing and enforcing credit policies and limits
- f. Handling confirmation of all transactions and reconciling differences with the trading counterparties
- g. Reviewing trade tickets for adherence to approved limits
- h. Ensuring all trades have been entered into the appropriate system of record
- i. Ensuring that both pre-schedule and actual delivery volumes and prices are entered into the physical database
- j. Carrying out month-end checkout of all transactions each month
- k. Reviewing models and methodologies and recommending RMT approval
- l. Providing supporting documentation for power supply audits

## Section 5: DELEGATION OF AUTHORITY

By adopting this Policy, the RCEA Board is explicitly delegating operational control and oversight to the RMT and Power Manager, as outlined through this Policy. Specifically, to facilitate daily operations of the CCA, the Board is delegating transaction execution authorities shown in the table below.

Position	Maturity Limit	Term Limit	Energy Transaction Volume Limit (MWh)	Capacity Transaction Value Limit
RCEA Board of Directors	Any transaction that exceeds the Risk Management Team limits			
Risk Management Team	42 Months	36 Months	500,000	\$5,000,000
Executive Director	36 Months	30 Months	375,000	\$3,000,000
TEA	30 months	24 Months	250,000	\$1,500,000

These authorities will be applied to wholesale power activity executed outside of the California Independent System Operator (“CAISO”) markets. These limits provide both RCEA and TEA needed authorities to manage risks as they arise. Transactions falling outside the delegations above require Board approval prior to execution. Activity with CAISO is excluded from this table due to the nature of the market, where prices for activity may not be known until after transactions are committed.

All procurement executed under the delegation above, must align with the RCEA’s underlying risk exposure (load requirements, locational and temporal) that is being hedged consistent with the approved Guidelines for the Redwood Coast Energy Authority Community Energy Program Launch-Period Strategy and Targets, any subsequent procurement strategies or financial management policies authorized by the Board, and the Energy Risk Hedging Strategy (Appendix D to this policy).

### 5.1 Monitoring, Reporting and Instances of Exceeding Risk Limits

The TEA Middle Office is responsible for monitoring, and reporting compliance with, all limits within this Policy. If a limit or control is violated, the TEA 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. RCEA Power Resources staff are also responsible for monitoring transactions reported by TEA and bringing to the RMT’s attention any violations of limits within this Policy that have not been noted by TEA.

## Section 6: CREDIT POLICY

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Transactions are executed on RCEA's behalf by TEA through TEA agreements, and with this activity RCEA is exposed to pass-through credit risk. As RCEA builds its own counterparty master trading agreements, transactions executed through RCEA agreements will carry direct credit risk. For activity on TEA and/or RCEA agreements, RCEA will adopt a scaling methodology to adjust TEA's credit limits to RCEA's risk tolerance. TEA shall assist RCEA in setting its own risk tolerance and defining the scaling methodology, based on TEA's credit risk processes. For scaling with RCEA counterparties, where an agreement exists between RCEA and an entity, the RMT will approve changes to credit limits, otherwise TEA will automatically scale the TEA limit to the RCEA risk tolerance.

All procurement activities executed by TEA on behalf of RCEA, using TEA's counterparty agreements, will be subject to the credit policies and procedures outlined in TEA's Energy Risk Management Policy. TEA's credit policy requires that all counterparties be evaluated for creditworthiness by the TEA 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 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 includes all information supporting such evaluation in a credit file for the counterparty. A credit limit for a counterparty will not be recommended or approved without first confirming the counterparty's senior unsecured or corporate credit rating from one of the nationally recognized rating agencies and/or performing a credit review or analysis of the counterparty's or guarantor's financial statements. The TEA credit analysis shall include, at a minimum, current audited financial statements or other supplementary data that indicates financial strength commensurate with an investment grade rating. Trade and banking references, and any other pertinent information, may also be used in the review process.

Counterparties that do not qualify for a credit limit or wish to enter into a transaction exceeding their credit limit must post an acceptable form of credit support or prepayment prior to the execution of any transaction. A counterparty to TEA may choose to provide a guarantee from a third party, provided the third party satisfies the criteria for a credit limit as outlined in TEA's Energy Risk Management Policy. For direct transactions with counterparties, RCEA generally does not accept guarantees as credit support. Exceptions may be made for counterparties that have an established history of doing business with RCEA, or where the guarantee is provided by a guarantor deemed highly trustworthy by RCEA.

### 6.1 Credit Limit and Monitoring

In executing transactions on RCEA's behalf, TEA will observe a pass-through counterparty credit maximum limit equal to \$1.0 million.

The TEA Middle Office will establish continuous monitoring of the current credit exposure for each Counterparty with whom TEA transacts on behalf of RCEA and include such information in the Current Counterparty Credit Risk Report. This report will be made available, reviewed, and communicated to the RMT pursuant to the reporting requirements outlined in Section 7.

## Section 7: POSITION TRACKING AND MANAGEMENT REPORTING

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Minimum reporting requirements are shown below. The reports outlined below are made available to RMT members by TEA:

- **Daily Financial Model Forecast**

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

- **Monthly Net Position Report**

Forward net position report that is presented monthly to the RMT.

- **Daily Credit Report**

This report shows how credit exposure for the transactions that TEA executes on behalf of RCEA pass through TEA to RCEA.

- **Monthly Risk Analysis**

Cash flow at risk and stress testing of the financial forecast relative to financial goals.

- **Quarterly Board Risk Report**

Update on activities and projected financial performance that is presented quarterly at RCEA Board meetings.

- **Unrealized Position Details**

- **Current Projected Power Supply Costs Compared to Budget**

- **Cash Flow at Risk**

- **Renewable and Carbon-Free Fuel Generation Portfolio Content**

## **Section 8: POLICY REVISION PROCESS**

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RCEA's Energy Risk Management Policy will evolve over time as market and business factors change. At least on an annual basis, the RMT will review this Policy and associated procedures to determine if they should be amended, supplemented, or updated to account for changing business and/or regulatory requirements. If an amendment is warranted, the Policy amendment will be submitted to the RCEA Board for approval. Changes to appendices to this Policy may be approved and implemented by the RMT.

### **8.1 Acknowledgement of Policy**

Any RCEA employee participating in any activity or transaction within the scope of this Policy shall sign, at time of hire and upon any Policy revision, a statement approved by the RMT that such employee:

- Has read RCEA's Energy Risk Management Policy
- Understands the terms and agreements of said Policy
- Will comply with said Policy
- Understands that any violation of said Policy shall be subject to employee discipline up to and including termination of employment.

See Appendix E for a statement form.

### **8.2 Policy Interpretations**

Questions about the interpretation of any matters of this Policy should be referred to the RMT.

All legal matters stemming from this Policy will be referred to RCEA's General Counsel.

## Appendix A: AUTHORIZED TRANSACTION TYPES OR PRODUCTS

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All transaction types listed below must be executed within the limits set forth in this Policy. *(The following transaction types can be 'nonstandard' at RCEA subject to RMT approval)*

### Over the Counter Products

- CAISO Market Products
  - Day-ahead and Real-time Energy
  - Congestion Revenue Rights
  - Convergence
  - Inter Scheduling Coordinator Transactions
  - Tagging into and out of CAISO
  - Ancillary Services
- Physical Power Products
  - Short and Long-Term Power
  - Physical OTC Options
- Physical Resource Adequacy Capacity
- Physical Environmental Products
  - Renewable Energy Credits
  - Specified Source Power
  - Carbon Allowances and Obligations
- Transmission Access Charges
- Energy Storage, including time-based arbitrage (selling stored energy into the grid during peak hours and buying energy to store during off-peak hours)
  - Any other products associated with energy generation, demand response, or other energy markets relevant to RCEA activities

The point of delivery for all products must be at a location within the CAISO service area.

## Appendix B: NEW TRANSACTION APPROVAL FORM

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### New or Non-Standard Transaction Approval Form

**Prepared By:**

**Date:**

**New or Non-Standard Transaction 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 RCEA
- 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 workflows/methodology, including systems
- Brief description of the responsibilities of various departments within RCEA who will have any manner of contact with the new or non-standard transaction

**Reviewed by:**

\_\_\_\_\_  
**Director of Power Resources**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**TEA Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Executive Director**

\_\_\_\_\_  
**Date**

## Appendix C: DEFINITIONS

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

**Bilateral Transaction:** Any physical or financial transaction between two counterparties, neither of whom is an Exchange or market entity (e.g. CAISO).

**Cash Flow at Risk:** A probability-based measure of the extent to which future cash flows may deviate from expectations due to changes in load, generation and/or market prices of energy. (For RCEA, the most relevant Cash Flow at Risk metric is a measure of the potential for net revenues to deviate from the current forecast.)

**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.

**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 against manipulation, abusive trade practices and fraud.

**Commodity:** A basic good used in commerce that is interchangeable with other goods of the same type. Commodities are most often used as inputs in the production of other goods or services. The quality of a given commodity may differ slightly, but it is essentially uniform across producers. When they are traded on an exchange, commodities must also meet specified minimum standards, also known as a basis grade.

**Confirmation Letter:** A letter agreement between two counterparties that details the specific commercial terms (e.g., price, quantity and point of delivery) of a transaction.

**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.

**Counterparty Credit Risk:** The risk of financial loss resulting from a counterparty to a transaction failing to fulfill its obligations.

**Day-ahead Market:** The short-term forward market for efficiently allocating transmission capacity and facilitating purchases and sales of energy and scheduled bilateral transactions; conducted by an Organized Market prior to the operating day.

**Delivery point:** The point at which a commodity will be delivered and received.

**Departing load:** Load associated with a retail electricity consumer that elects to purchase generation services from an Energy Service Provider rather than the local Investor Owned Utility.

**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.

**Hedging products:** Capacity, energy, renewable energy credits, or other products related to a specific transaction.

**Hedging Transaction:** A transaction designed to reduce the exposure of a specific outstanding position or portfolio; “fully hedged” equates to complete elimination of the targeted risk and “partially hedged” implies a risk reduction of less than 100%.

**Illiquidity:** occurs when an asset cannot easily and quickly be sold or exchanged for cash without a substantial loss in value.

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

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

**Limit violation:** Any time a defined limit is violated.

**Liquidity:** efficiency or ease with which an asset can be transacted without affecting its market price.

**Maturity Limit:** timespan between when a transaction is approved and the end date for delivery of product under the transaction.

**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.

**Net Forward Position:** A forecast of the anticipated electric demands of a load serving entity compared to existing resource (generation and/or power purchase agreements) commitments.

**Nonstandard:** Any product that is not commonly transacted among market participants in forward markets. The nonstandard attribute of the product could be a function of a number of factors such as volume, delivery period and/or term.

**Opt-out Rate:** Typically expressed as a percentage, the Opt-out Rate measures the ratio of eligible customers of a CCA that have elected to remain a bundled service customer of the IOU rather than take generation services from the CCA.

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

**Prompt:** period immediately following the current period, e.g. in February the prompt month is March.

**Scheduling:** The actions of the counterparts to a transaction, and/or their designated representatives, of notifying, requesting and confirming to each other the quantity and type of product to be delivered on a given day.

**Separation of function:** Also referred to as “segregation of duties,” part of a complete risk control framework. Individuals responsible for legally binding the organization to a transaction should not also perform confirmation, clearance, or accounting functions.

**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.

**Speculation:** The act of trading an asset with the expectation of realizing financial gain resulting from a change in price in the asset being transacted. (See discussion in sections 1.1 and 3.9 that elaborates on discretion staff and third-party service providers are allowed in conducting trading activities.)

**Stranded cost:** Generation costs that a load serving entity is allowed to collect from customers through retail rates but that will not be recovered if the generation is sold in wholesale electricity markets.

**Stress testing:** 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.

**Term Limit:** Timespan between the start and end dates of delivery of product under a transaction.

## Appendix D: ENERGY RISK HEDGING STRATEGY

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### Introduction

The Redwood Coast Energy Authority (RCEA) is routinely exposed to commodity price risk and volume variability risk in the normal conduct of serving the power supply requirements of its residential and business customers as part of its Community Choice Energy (CCE) Program.

This Energy Risk Hedging Strategy (Strategy) describes the strategy and framework that RCEA uses to hedge the power supply requirements of its customers during the current calendar year plus next two calendar years. The Strategy details procurement schedules, or where appropriate justifies the decision not to set schedules, for attaining wholesale, market-based products required to support the CCE Program portfolio. Specific focus is on procurement of the following products:

- Fixed Price Energy (also known as system power or energy hedges)
- Portfolio Content Category 1 Renewable Energy
- Portfolio Content Category 2 Renewable Energy
- Carbon Free Energy
- Resource Adequacy Capacity
- Congestion Revenue Rights

In addition to market-based transactions entered into pursuant to this Strategy, RCEA will also procure assets, enter into long-term power purchase agreements (PPAs) and resource adequacy (RA) contracts pursuant to statutory and regulatory requirements, including: the SB 350 mandate to procure a minimum of 65 percent of RPS-required energy from 10-year or longer PPAs or RCEA-owned resources beginning in Compliance Period 4; the CPUC's November 2019 IRP Procurement Track Decision Requiring Electric System Reliability Procurement for 2021-2023; and the CPUC's June 2021 Mid-Term Reliability Decision. Additionally, RCEA may enter into voluntary long-term resource acquisitions pursuant to its Integrated Resource Plan and policy goals established by its Board of Directors. Long-term PPAs will count as hedges as described later in this Strategy.

### Governance

This Strategy shall be updated, as necessary, from time to time and governed by the Energy Risk Management Policy approved by the RCEA's Board of Directors in December 2016 and reviewed annually with updates as needed (Risk Policy).

### Hedging Program Goals

The overall goals of the Strategy are to identify exposure to commodity prices, quantify the financial impact that variability in commodity prices, load requirements, and generation output may have on the ability of the RCEA to meet its financial program goals, and then manage the associated risk.

To help ensure long-term viability for the CCE, RCEA has outlined the following Policy Goals. These goals will establish metrics used for modeling and measuring risk exposures of the CCE.

- RCEA will target to maintain competitive retail rates with PG&E after adjusting for the PCIA and Franchise Fee.
- RCEA will target funding financial reserves in support of the following objectives:
  - Establish long-term business sustainability
  - Build collateral for power procurement activities
  - Establish and maintain an investment grade credit rating
  - Develop a source of funds for investment in local generation and customer programs
  - Stabilize rates and buffer against year-to-year variability in procurement costs
- RCEA set an initial target to procure 40 percent of its power supply requirements from renewable energy and 80 percent of its power supply requirements from non-fossil fuel generation, with a goal of procuring 100 percent renewable power from local sources by 2030. This long-term goal was established in the RePower Humboldt study that formed the original impetus for developing RCEA's Community Choice Energy program. More recently, RCEA has set a goal to procure all energy from clean and renewable sources (though not necessarily local sources) by 2025. Under this goal, RCEA may include a mix of RPS and carbon-free resources in its portfolio.

All hedging activities will be conducted to achieve results consistent with the above Policy Goals, the aforementioned compliance obligations and to meet the power supply requirements of RCEA's customers. Any transaction that cannot be directly linked to a requirement of serving RCEA's customers, or that does not serve to reduce risk as measured by the Cash Flow at Risk Metric described below, is prohibited.

### **Prohibited Generation Sources**

In keeping with community values identified by RCEA in developing its CCE program, neither energy nor resource adequacy (RA) will be procured from the following generation sources:

- Nuclear generation
- Coal generation
- Hydroelectric generation from existing dams on the mainstem Klamath River

Exceptions to this prohibition may be needed for occasional short-term transactions, such as procurement of replacement RA.

### **Hedging Targets and Strategies**

The time horizon for the hedging program will be the prompt three (3) years. The energy hedging schedules described in the Fixed Price Energy section below provide a disciplined approach to procurement by mandating targeted hedge levels to be achieved by definite dates. This commonly utilized approach is intended to mitigate speculation of future wholesale market prices while also spreading procurement over a multi-year period. A key goal of the CCA program is to reduce energy price uncertainty for the upcoming operating year(s) by procuring at least 70 percent and up to 100 percent of its energy needs with fixed price contracts thereby mitigating exposure to unexpected price movement. RCEA and TEA will generally observe these adopted hedge schedules for each of the following energy and

capacity products, to provide discipline on the minimum hedge level side and as protection for over-hedging on the maximum hedge level side. Changes in regulatory, load, and market dynamics may warrant occasional under- or over-hedging and subsequent remarketing of over-procured products.

RCEA currently does not have programmatic procedures assigned to Renewable Portfolio Standard, Carbon Free Energy, or Resource Adequacy products. Procurement of these products is primarily driven by RCEA Board-adopted goals and regulatory compliance requirements, which in many cases apply prescribed hedging schedules, as further described in the respective sections below.

### **Fixed Price Energy**

A challenge in using renewable generating resources to meet the energy requirements of customers is that the generation profile of renewable resources often does not align with the consumption patterns of the residences and businesses consuming the electricity. Fixed price energy products, including block energy, shaped energy and options, are used to manage the electricity commodity price risk that RCEA faces as a result of this uncertainty. Fixed price energy provides for the supplier to deliver a predetermined volume of energy, at a constant delivery rate, for a fixed price. Specific to RCEA's customers, Fixed price energy hedges are used to provide cost certainty and rate stability.

When assessing its requirements for fixed price energy, RCEA will forecast the monthly energy requirements of its customers during heavy and light load hours<sup>3</sup> each month as well as the forecasted output from resources in its portfolio. Forecast load will be determined through use of an econometric model that forecasts both total energy usage and 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 econometric model is refined as additional load data is acquired through program operation. Forecasted output from resources is based on generation forecasts provided by counterparties, which are risk-adjusted based on a variety of factors such as developmental delays, curtailment, underperformance, and other forecast and observed outcomes.

The targets below describe minimum and maximum percent hedge targets for identified future time periods. The definition of "Hedge %" in this context is the total fixed price megawatt hours (MWh) procured in the period divided by the total forecast load in MWh inclusive, as applicable, of the energy forecast to be provided by PPAs and other long-term resources within RCEA's portfolio during respective time periods.

RCEA will observe the following schedule when hedging its Fixed Price Energy requirements:

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<sup>3</sup> Heavy Load (on-peak) Hours in current wholesale energy markets are 6am to 10pm, Monday through Saturday, excluding New Years, Memorial Day, 4<sup>th</sup> of July, Labor Day, Thanksgiving and Christmas. All other hours during the year are considered Light Load (off-peak) Hours.

Time Period	Minimum Hedge %	Maximum Hedge %
Prompt Month (Jan-March/Q1)	80%	115%
Prompt Month (April-June/Q2)	70%	105%
Prompt Month (July-Sep/Q3)	80%	125%
Prompt Month (Oct-Dec/Q4)	70%	115%
Prompt Calendar Year (PCY)	70%	100%
PCY +1	50%	100%
PCY +2	30%	100%

The hedge schedule for the Prompt Month will be measured five calendar days prior to the first day of the particular month (e.g. on January 27, 2023, RCEA will have hedged 80 to 115 percent of its projected energy requirements during February 2023, which is in Q1).

The hedge schedule for the Prompt Calendar Year (PCY), as well as subsequent two calendar years, will be measured ten calendar days prior to each new calendar year (e.g. on December 21, 2021, RCEA will have hedged at least 70 percent of its forecast energy requirements for CY 2022, 50 percent of its forecast energy requirements for CY 2023, and 30 percent of its forecast energy requirements for CY 2024).

### Peak / Heavy Load Hour (HLH) Energy Minimum Hedge

The targets described above represent total fixed-price MWh procured compared to total MWh load forecasts. They are intentionally not prescriptive regarding diurnal periods (HLH/LLH or Peak/Off Peak) which allows flexibility in procurement strategy given rapidly evolving market dynamics. Historically Peak/HLH periods contain the most price risk. Accordingly, **RCEA additionally requires HLH periods to be procured to a minimum 100% hedged level, using the same definition above, for Prompt Months.**

### Summer Assessment

RCEA will complete a Summer Assessment of market risk and hedging plan by June 1 of each year. This work product will be shared in draft form with the RCEA Risk Management Team in May of each year and will include:

- analysis of summer exposure,
- fundamental analysis of market conditions,
- hourly load/resource balance forecast for June-September, and
- recommendations on products and target hedge levels designed to mitigate peak hour and daily HLH exposure.

Although compliance with the Fixed Price Energy schedule above will be measured monthly, RCEA shall endeavor to complete all Q3 hedging prior to June 15 of each year, subject to and allowing for true-ups as load and generation profiles fluctuate throughout the summer season.

The purpose of these hedging transactions is to reduce variability of power supply costs by gradually increasing the amount of energy hedged as the date of consumption approaches. Time driven strategies avoid the inherent impossibility of trying to consistently and accurately “time the market” when making hedging decisions. Additionally, a load serving entity the size of RCEA 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 are based on price-driven or opportunistic strategies. The purpose of these strategies is to capitalize on market opportunities when conditions are favorable. RCEA bases its decision to execute opportunistic hedges on the impact to projected power supply costs and the resulting reduction in cash flow at risk (CFaR). 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 strategy, fixed price energy hedges may be purchased, sold, or moved from one month to another for the purpose of maintaining hedge coverage that matches changes in forecasted electric load. This includes the ability of the RCEA to purchase standard products to hedge average loads over a defined time period and then later modify its portfolio by purchasing or selling more granular products to more precisely match load.

***Power Charge Indifference Adjustment (PCIA)  
Exit Fee and Hedging with Fixed Price Energy***

Under the current PCIA construct, departing load is responsible for costs associated with procurement that the incumbent utility has already done on behalf of that load. At the time of departure, the applicable vintage portfolio<sup>4</sup> then serves as a hedge for the departing load in that as market prices increase, the departing load charges decrease, thereby reducing costs to CCA customers relative to bundled customers. Similarly, if market prices decrease, the departing load charges increase, due to more of the vintage portfolio being above market costs. PG&E’s 2017 Power Content Label provides the best estimate of the percent of fixed price energy in PG&E’s vintage portfolio associated with RCEA’s vintage year of 2016 for the majority of its customer load.

2017 POWER CONTENT LABEL		
Pacific Gas and Electric Company		
ENERGY RESOURCES	Power Mix	2017 CA Power Mix**
<b>Eligible Renewable</b>	<b>33%</b>	<b>29%</b>
Biomass & biowaste	4%	2%
Geothermal	5%	4%
Eligible hydroelectric	3%	3%
Solar	13%	10%
Wind	8%	10%
<b>Coal</b>	<b>0%</b>	<b>4%</b>
<b>Large Hydroelectric</b>	<b>18%</b>	<b>15%</b>
<b>Natural Gas</b>	<b>20%</b>	<b>34%</b>
<b>Nuclear</b>	<b>27%</b>	<b>9%</b>
<b>Other</b>	<b>0%</b>	<b>&lt;1%</b>
<b>Unspecified sources of power*</b>	<b>2%</b>	<b>9%</b>
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

\* "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.  
 \*\* Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the identified year.

For specific information about this electricity product, contact:	<b>Pacific Gas and Electric Company</b> <b>415-973-0640</b>
For general information about the Power Content Label, please visit:	<a href="http://www.energy.ca.gov/pcl/">http://www.energy.ca.gov/pcl/</a>
For additional questions, please contact the California Energy Commission at:	844-454-2906

One impact of the PCIA on RCEA is, therefore, the way it serves as a “lagging hedge” against energy price volatility. Increased market prices in one year will result in an all-else-equal lower PCIA in subsequent years, and vice versa, although the exact impact will depend on market-sensitive PG&E data that RCEA does not have access to. In lieu of better quantitative data, hedging decisions will be made with the

<sup>4</sup> The vintage portfolio is generally all contracts and utility-owned generation that was procured while the departing load was still receiving bundled service.

qualitative understanding that the PCIA may serve from a 5% to 20% “lagging hedge” on RCEA’s portfolio, dependent on market conditions and seasonality.

## **Compliance & Goal Driven Procurement**

This section covers procurement undertaken primarily to meet compliance requirements set by regulatory authorities and/or to meet Board-adopted goals that underlie the purpose of RCEA’s existence as a local procurement agency.

### **Portfolio Content Category 1 Renewable Energy**

RCEA has a compliance mandate to procure sufficient renewable energy to meet the state of California’s RPS requirements, based on multi-year compliance periods, as well as Board-adopted goals to procure a 100% renewable and carbon free energy portfolio by 2025 and a 100% local energy portfolio by 2030, subject to availability of sufficient local renewable energy resources. These Board-adopted goals currently exceed state compliance mandates.

In order to cost-effectively meet its GHG-reduction and renewable energy goals, RCEA intends to meet a growing share of its energy supply requirements with renewable energy, a large portion of which shall be Portfolio Content Category 1 (PCC1) renewable energy. PCC1 renewable energy is sourced from a renewable generator either located inside of California or from a generator that is directly interconnected to the California Independent System Operator (CAISO) or other California Balancing Authority. For example, energy procured from local biomass generators is a source of PCC1 renewable energy.

RCEA’s eventual goal is to reach a steady state of procurement in which it meets the majority of its state-mandated and internal voluntary RPS requirements with long-term contracts. In this state, RCEA will execute new contracts when existing ones expire, based on an assumed average contract length of 15-20 years. Doing so will 1) allow RCEA to steadily reduce its exposure to renewable energy and energy market price risks in a fashion similar to the time-driven, programmatic hedging approach for fixed price energy and 2) ensure that RCEA is in a position to make strategic procurement decisions and commitments on a periodic basis. When economically feasible, RCEA will give preference to renewable generation located in Humboldt County.

RCEA has already procured several fixed-price long-term renewable contracts to support meeting RPS compliance mandates and Board-adopted goals, such that its long-term energy portfolio offsets energy price risk due to the corresponding decreased reliance on short-term energy procurement. As such, programmatic hedging targets for renewable and carbon free energy are a less effective hedging tool, and consequently do not provide incremental risk reduction given the complexities involved in establishing a growing long-term renewable portfolio.

As a result, RCEA staff undertake an annual assessment of the entirety of the program’s renewable energy procurement activities with respect to both state compliance mandates and Board-adopted goals. This analysis, which includes qualitative and stochastic risk assessment, feeds into RCEA’s renewable procurement timelines as well as its annual RPS compliance filings. The analysis is updated on an ad hoc basis throughout the year as a function of changing market dynamics or new procurement mandates.

## Portfolio Content Category 2 Renewable Energy

RCEA has the option to supplement its RPS portfolio with Portfolio Content Category 2 (PCC2) renewable energy. PCC2 energy is sourced from renewable generators located outside the state of California and is “firmed and shaped” for reliable delivery into California. PCC2 purchases have historically been less expensive and shorter in term than PCC1, so they have provided a cost-effective and flexible method of augmenting RCEA’s renewable energy purchases to meet renewable portfolio content commitments to customers. However, recent changes to the greenhouse gas emissions accounting methodology via the California Energy Commission’s Power Source Disclosure Program may reduce the economic benefit of the PCC2 product. PCC2 renewable energy is now ascribed the same carbon-intensity as “unspecified” system power unless matched one-to-one with carbon free energy. The procurement strategy of this product is thus dependent on the combined price of PCC2 and carbon free energy compared to the direct procurement of PCC1 energy, which receives a lower or zero carbon-intensity rating, dependent on fuel type. PCC2 purchases also require increased oversight of deliveries and compliance reporting, which further reduces the attractiveness of this product over PCC1 energy.

## Carbon Free Energy

In pursuit of its GHG-reduction and non-fossil fuel portfolio objectives, RCEA shall augment its renewable energy purchases outlined above with energy purchases from carbon-free energy generating facilities, which are typically hydroelectric resources located in California that are too large to qualify as Eligible Renewable Resources (greater than 30 MW) 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. The majority of RCEA’s renewable energy is also carbon-free, which means that the analysis that drives RCEA’s renewable procurement decisions will also underlie RCEA’s supplemental carbon free energy procurement. Due to this, RCEA staff intend to utilize the annual renewable procurement planning and analysis process to also plan for carbon free energy procurement rather than utilizing programmatic hedging targets. The purchase of carbon free energy is a voluntary goal set by the RCEA Board, who may elect to reduce the total quantity of carbon free energy included in RCEA’s portfolio as it seeks to balance multiple program objectives, including financial targets for reserves and retail rates.

## Resource Adequacy Capacity

RCEA will use best reasonable efforts to comply with the filing requirements of the CAISO- and CPUC-administered Resource Adequacy (RA) program, currently:

- 90% of System and Flexible RA requirements procured prior to the year-ahead RA showing on October 31<sup>st</sup> of the year prior to the showing year.
- 100% of System and Flexible RA requirements procured prior to the month-ahead RA showings, due 45 calendar days prior to the first day of the showing month.

Starting in the 2023 RA compliance year, procurement of local RA is solely the responsibility of the Central Procurement Entity (CPE) in PG&E’s service territory, the only territory in which RCEA serves load. Therefore, beyond 2022, RCEA no longer has a regulatory obligation to procure or show local RA to the state agencies. Instead, RCEA has the option to self-show or sell its local RA capacity to the CPE to obtain some value for it.

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 can result in cost-effective contracting opportunities but is also sometimes fragmented and volatile. Due to the nature of RA markets, monthly products are often bundled with other products or “strips” of multiple months of RA, which may result in over-procurement for one or more months as a necessary condition to satisfy compliance requirements in one or more other months. Execution of long term PPAs can also lead to over-procurement of RA products for future years, and inclusion of a defined hedging matrix might require selling excess long-term RA to bring RCEA into hedging compliance, even though such action may not be in RCEA’s best business and operational interest. Lastly, compliance guardrails exist at the regulatory level which guide the RA procurement schedule for RCEA and all other LSEs.

The RA program’s potential restructuring, which could significantly impact RCEA’s RA compliance requirements, is currently part of an open proceeding at the CPUC for potential implementation in the 2024 compliance year.

### **Congestion Revenue Rights**

RTO markets expose entities to financial basis risks between source and sink points that increase cashflow risks in a load serving entity’s portfolio. In order to manage this risk CAISO offers a financial product known as congestion revenue rights (CRRs) which can be allocated to an entity or purchased via the auction. RCEA uses both mechanisms to acquire necessary congestion hedges in on and off peak periods to reduce risk between generation or purchase locations and RCEA’s load point. As RCEA’s CRRs are used to manage a source-sink relationship consistent with utility hedging, exposure created by the CRR must be reasonably expected to have an offsetting effect on cashflow associated with the positions that necessitated the CRR in the first place across the period. It is acknowledged however that due to discrepancies in granularity, these cashflows will never be fully symmetric.

TEA, acting as agent on behalf of RCEA, calculates a Total Dollar Stop-Loss designed to limit the amount of capital that could be consumed taking into consideration both realized and unrealized gains. For CRRs, TEA monitors a five percent outcome for CFaR for inclusion in the Total Dollar Stop-Loss value. Once the Total Dollar Stop-Loss reaches the limit outlined in the Risk Management Policy all open position trading at TEA is ceased and positions are liquidated if needed.

### **CPUC Mandated Procurement**

The 2018 and 2020 Integrated Resource Planning cycles resulted in all CPUC-jurisdictional LSEs, including RCEA, being mandated to procure a share of the capacity needed to help ensure the long-term reliability of the California power grid. This trend of mandating procurement may continue as California decarbonizes its electric grid while electrifying other sectors. RCEA will continue to meet all mandated capacity procurement requirements while attempting to procure low-cost resources that potentially provide additional energy products aligned with RCEA’s procurement goals, such as local PCC1 energy.

### **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 RCEA’s exposure

to commodity price risk. The following two metrics will be utilized to manage the Energy Risk Hedging Strategy:

- 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 price 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.
- Cash Flow at Risk (CFaR). CFaR represents a statistical view of what could happen to RCEA's power supply costs and CRR portfolio assuming that no action is taken to manage its portfolio from the date of the analysis through the end of the period of time being analyzed. The potential CFaR will be calculated using a historical sampling methodology that considers on- and off-peak periods separately over the remaining life of the transactions. The CFaR calculation will consider potential variability in load and generation supply. The CFaR will be calculated by rank ordering the portfolio cost and measuring the difference between the 95th percentile and the expected power cost outcome.

These metrics will be reviewed 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 by TEA to RCEA on a monthly basis.

## Reporting Requirements

The reports that are required to manage the hedge program and to ensure its success are listed in Section 7 of the Risk Policy.

## **Appendix E: ACKNOWLEDGMENT OF ENERGY RISK MANAGEMENT POLICY**

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I, (print name and title of RCEA employee)

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hereby attest that I:

- Have read RCEA's Energy Risk Management Policy
- Understand the terms and agreements of said Policy
- Will comply with said Policy
- Understand that any violation of said Policy shall be subject to employee discipline up to and including termination of employment.

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**Employee signature**

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**Date**

This form is to be completed and signed at time of hire and upon any Policy revision by any RCEA employee participating in any activity or transaction within the scope of RCEA's Energy Risk Management Policy.