



Policy 015: Energy Risk Management Policy

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Energy Risk Management Policy
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Energy Risk Management Policy

1.0 General Provisions

1.1 Background and Purpose of Policy

Marin Clean Energy's (MCE) mission is to address climate change by reducing energy-related greenhouse gas emissions through the use of renewable energy supply and energy efficiency programs at stable and competitive rates for customers while providing local economic and workforce benefits.

This Energy Risk Management Policy (Policy) has been developed to help ensure that MCE achieves its mission and adheres to policies established by the MCE Board of Directors (Board), power supply and related contract commitments, good utility practice, and all applicable laws and regulations.

This Policy defines MCE's general energy risk management framework and provides management with the authority to establish processes for monitoring, measuring, reporting, and controlling market and credit risks to which MCE is exposed in its normal course of business.

1.2 Scope of Business and Related Market Risks

MCE provides energy to retail customers in its service territory that entails business activities such as; bilateral purchases and sales of electricity under short, medium and long term contracts; scheduling of load and generation of electricity into California Independent Systems Operator (CAISO) markets; retail marketing of electricity to consumers within its service territory; compliance with voluntary objectives and regulatory requirements as it relates to carbon free and renewable portfolio standard (RPS) compliant energy; participation in CAISO Congestion Revenue Rights ("CRRs") market; managing the balance of load and generation over short, medium and long term horizons; and compliance with California Public Utilities Commission (CPUC) Resource Adequacy (RA) requirements.

Examples of energy market risks include, but are not limited to, the following:

- Market Price Risk
- Counter party Credit and Performance Risk
- Load and Generation Volumetric Risk
- Operational Risk
- Liquidity Risk
- Regulatory/Legislative Risk

This Policy focuses on the following:

- Risk Management Goals and Principles
- Definitions of Risks
- Internal Control Principles
- Risk Management Business Practices
- Risk Management Governance

This Policy does not address the following types of general business risk, which are treated separately in other official policies, ordinances and regulations of MCE: fire, accident and casualty; health, safety, and

workers' compensation; general liability; and other such typically insurable perils. The term "risk management," as used herein, is therefore understood to refer solely to market risks as herein defined, and not those other categories of risk.

1.3 Policy Administration

This version of the Energy Risk Management Policy adopted by the MCE Board of Directors the 19th day of April, 2018, will be reviewed and updated as needed every two calendar years by the Technical Committee. This Policy may be amended as needed by MCE's Technical Committee.

1.4 Policy Distribution

This Policy shall be distributed to and read by all MCE employees and third-party contractors who are engaged in the planning, procurement, sale and scheduling of electricity on MCE's behalf and/or in other MCE departments providing oversight and support for these activities. All such employees and contractors are required to confirm in writing that they have read and understand the Policy on an annual basis.

2.0 Risk Management Goals

The goals of energy risk management shall be to:

- [1] assist in achieving the business objectives in the Integrated Resource Plan (IRP) and Reserve Policy including retail rate stability and competitiveness and the accumulation of financial reserves;
- [2] avoid losses and excessive costs which would materially impact the financial condition of MCE;
- [3] establish the parameters for energy procurement and sales activity to obtain the best possible price while ensuring compliance with Board-approved risk limits;
- [4] assist in assuring that market activities and transactions are undertaken in compliance with established procurement authorities, applicable laws, regulations and orders; and
- [5] encourage the development and maintenance of a corporate culture at MCE in which the proper balance is struck between control and facilitation and in which professionalism, discipline, technical skills and analytical rigor come together to achieve MCE objectives.

3.0 Risk Management Principles

MCE manages its energy resources and transactions for the purpose of providing its customers with low cost renewable, carbon free and other energy while at the same time minimizing risks. Undue exposure to CAISO or bilateral energy market volatility for the purpose of potentially achieving lower costs but at the risk that costs may, in fact, be much higher, will not be accepted. Procurement and hedging strategy will be determined by analytical methods supplemented by experienced judgement. MCE will use that experienced judgement and its analytical tools to assess system cost drivers such as weather, short term energy prices, load variation and operational constraints to manage timing and quantity of purchases and sales of energy and related services, consistent with the limits identified in this policy. When actions are taken that are consistent with this Policy and for the purpose of the combined goal of low costs and optimized risk, those actions are considered to be consistent with the objectives of this policy. MCE will

not engage in transactions, without proper authorization, whose purpose is not tied to managing costs and risks or are outside of the limits identified in this policy.

4.0 Definitions of Market Risks

The term “market risks,” as used here, refers specifically to those categories of risk which relate to MCE’s participation in wholesale and retail markets as Load Serving Entity (LSE) and its interests in long-term contracts. Market risks include market price risk, counterparty credit and performance risk, load and generation volumetric risk, operational risk, liquidity risk, and regulatory and legislative risk. These categories are defined and explained as follows.

4.1 Market Price Risk

Market Price risk is the risk that wholesale trading positions, long-term supply contracts and generation resources may move “out of the money,” that is, become less valuable in comparison with similar positions, contracts or resources obtainable at present prices. These same positions can also be “in the money” if they become more valuable in comparison to similar positions, contracts or resources obtainable at present market prices. This valuation methodology is commonly referred to as “Mark to Market.” If MCE is “out of the money” on a substantial portion of its contracts, it may have to charge higher retail rates. This may erode MCE’s competitive position and market share if other market participants (e.g., Direct Access providers or PG&E) are able to procure power at a lower cost and offer lower retail electricity rates.

A subcomponent of market price risk is market liquidity. Illiquid markets make it more difficult to buy or sell a commodity and can result in higher premiums on purchases or deeper discounts on sales.

Another dimension of market price risk is congestion risk. Congestion risks arise from the difference between the prices MCE pays the CAISO to schedule its load and the prices MCE receives from the CAISO for energy delivered by MCE’s suppliers.

4.2 Counterparty Credit and Performance Risk

Performance and credit risk refer to the inability or unwillingness of a counter party to perform according to its contractual obligations. Failure to perform may arise if an energy supplier fails to deliver energy as agreed. There are four general performance and credit risk scenarios:

[1] counterparties and wholesale suppliers may fail to deliver energy or environmental attributes, requiring MCE to purchase replacement product elsewhere, possibly at a higher cost;

[2] counterparties may fail to take delivery of energy or environmental attributes sold to them, necessitating a quick resale of the product elsewhere, possibly at a lower price;

[3] counterparties may fail to pay for energy or environmental attributes delivered; and

[4] counterparties and suppliers may refuse to extend credit to MCE, possibly resulting in higher collateral posting costs impacting MCE’s cash and bank lines of credit.

An important subcategory of credit risk is concentration risk. When a portfolio of positions and resources is concentrated in one or a very few counterparties, sources, or locations, it becomes more likely that

major losses will be sustained in the event of non-performance by a counterparty or supplier or as a result of price fluctuations at one location.

4.3 Load and Generation Volumetric Risk

Energy deliveries must be planned for based upon forecasted load adjusted for distribution line losses. MCE forecasts load over the long and short term and enters into long and short-term fixed price energy contracts to hedge its load consistent with the provisions of its IRP.

Load forecasting risks arises from inaccurate load forecasts and can result in the over or under procurement of energy and/or revenues that deviate from approved budgets. Energy delivery risk occurs if a generator fails to deliver expected or forecast energy. Variations in wind speed and cloud cover can also impact the amount of electricity generated by solar and wind resources, and occasional oversupply of power on the grid can lead to curtailment of energy deliveries or reduce revenue as a result of low or negative prices at energy delivery points. Weather is an important variable that can result in higher or lower electricity usage due to heating and cooling needs.

In the CAISO markets this situation can result in both over supply and undersupply of electricity relative to MCE's load and the over or under scheduling of generation or load into the day ahead market relative to actual energy consumed or delivered in the real time market. Load and generation volumetric risk may result in unanticipated open positions and imbalance energy costs. Imbalance energy costs result from differences in the price or volume of generation or load scheduled into the day ahead market when compared to the price or volume of generation or load occurring in the real time market during that time period.

4.4 Operational Risk

Operational risk consists of the potential for failure to act effectively to plan, execute and control business activities. Operational risk includes the potential for:

[1] organizational structure that is ineffective in addressing risk, i.e., the lack of sufficient authority to make and execute decisions, inadequate supervision, ineffective internal checks and balances, incomplete, inaccurate and untimely forecasts or reporting, failure to separate incompatible functions, etc.;

[2] absence, shortage or loss of key personnel or lack of cross functional training;

[3] lack or failure of facilities, equipment, systems and tools such as computers, software, communications links and data services;

[4] exposure to litigation or sanctions resulting from violating laws and regulations, not meeting contractual obligations, failure to address legal issues and/or receive competent legal advice, not drafting and analyzing contracts effectively, etc.; and

[5] errors or omissions in the conduct of business, including failure to execute transactions, violation of guidelines and directives, etc.

4.5 Liquidity Risk

Liquidity Risk is the risk that MCE will be unable to meet its financial obligations. This can be caused by unexpected financial events and/or inaccurate pro forma calculations, rate analysis, and debt analysis. Some unexpected financial events impacting liquidity could include:

[1] breach of MCE credit covenants or thresholds; MCE has credit covenants included in its banking and several short-term energy contracts. Breach of credit covenants or thresholds could result in the withdrawal of MCE's line of credit or trigger the requirement to post collateral;

[2] contractual requirement to post collateral with counter parties due to a decline in market prices below the contract price; and

[3] from time to time MCE may be the subject of legal or other claims arising from the normal course of business. Payment of a claim by MCE could reduce MCE's liquidity if the cause of loss is not covered by MCE's insurance policies.

4.6 Regulatory/Legislative Risk

Regulatory risk encompasses market structure and operational risks associated with shifting state and federal regulatory policies, rules, and regulations that could negatively impact MCE. An example is the potential increase of exit fees for customers served by Community Choice Aggregators such as MCE that would result in higher electricity rates for MCE's customers.

Legislative risk is associated with actions by federal and state legislative bodies, such as any adverse changes or requirements that may infringe on MCE's autonomy, increase its costs, or otherwise negatively impact MCE's ability to fulfill its mission.

5.0 Internal Control Principles

Internal controls are based on proven principles that meet or exceed the requirements of financial institutions and credit rating agencies and good utility practice. The required controls shall include all customary and usual business practices designed to prevent errors and improprieties, ensure accurate and timely reporting of results of operations and information pertinent to management, and facilitate attainment of business objectives. These controls are currently and shall remain fully integrated into all activities of the business and shall be consistent with stated objectives. There shall be active participation by senior management in risk management processes.

The required controls include the following:

[1] Segregation of duties and functions between front, middle, and back office activities. Generally:

- Front office is responsible for planning (e.g. preparation of the IRP and procurement planning) and procurement, (e.g. solicitation management, contract negotiation, structuring and pricing, contract execution), contract management, compliance, and oversight of scheduling coordinator functions with the CAISO;

- Middle office is responsible for controls and reporting (e.g., risk monitoring, risk measurement, risk reporting, procurement compliance, counterparty credit review, approval and monitoring); and
- Back office is responsible for settlements and processing (e.g., verification, validation, reconciliation and analysis of transactions, tracking, processing, and settlements of transactions).

[2] Delegation of authority that is commensurate with responsibility and capability, and relevant training to ensure adequate knowledge to operate in and comply with rules associated with the markets in which they transact (e.g., CAISO). Contract origination, commercial approval, legal review, invoice validation, and transaction auditing shall be performed by separate staff or contractor for any single transaction. No single staff member shall perform all these functions on any transaction.

[3] Defining authorized products and transactions. Generally:

- Authorized transactions are those transactions directly related to the procurement and/or administration of electric energy, reserve capacity, transmission and distribution service, ancillary services, congestion revenue rights (CRRs), renewable energy, renewable energy credits, scheduling activities, tolling agreements, and bilateral purchases of energy products. All transactions must be consistent with this Policy and the board approved IRP.
- Prohibited transactions are those transactions that are not related to serving retail electric load and/or reducing financial exposure. Speculative buying and selling of energy products or maintenance of open positions that do not conform with the RMC-approved thresholds is prohibited. Speculation is defined as buying energy in excess of forecasted load plus reasonable planning reserves, intentionally under procuring energy relative to minimum load hedging targets or selling energy or environmental attributes that are not yet owned by MCE. In no event shall speculative transactions be permitted. Any financial derivatives transactions including, but not limited to futures, swaps, options, and swaptions are also prohibited unless approved by the Risk Oversight Committee followed by the approval process set forth in MCE's Board Resolution on Delegating Energy Procurement Authorities.

[4] Defining procurement authority as set forth in MCE's Board Resolution on Delegating Energy Procurement Authorities.

[5] Defining proper process for executing power supply contracts. Generally, MCE will ensure power supply contracts are approved by personnel from Procurement/Commercial, Technical, and Credit/Financial prior to execution. Legal review will be required of various forms of agreement. Forms of agreement will be reviewed no less than every six months.

[6] Complete and precise capture of transaction and other data, with standardization of electronic and hard copy documentation.

[7] Meaningful summarization and accurate reporting of transactions and other activity at regular intervals.

[8] Timely and accurate risk and performance measurement at regular intervals.

[9] Regular compliance review to ensure that this Policy and related risk management guidelines are adhered to, with specific guidelines for resolving instances of noncompliance.

[10] Active participation by senior management in risk management processes.

6.0 Risk Management Business Practices

6.1 Risk Measurement Metrics and Reporting

A vital element of this 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 MCE's procurement-related business activities and performance relative to goals.

MCE measures and updates its risks using a variety of tools that model programmatic financial projections, market exposure and risk metrics, as well as through short term budget updates. The following items are measured, monitored, and reported:

[1] Mark-to-Market Valuation – marking to market is the process of determining the current value of contracted supply. A mark-to-market valuation shall be performed at least on a quarterly basis.

[2] Exposure Reporting – calculates the notional dollar risk exposure of open portfolio positions at current market prices. The exposure risk calculation shall be performed at least on a quarterly basis.

[3] Open Position Monitoring – on a monthly basis, MCE shall calculate/monitor its open positions for all energy and capacity products. If energy open positions for the month following the then current month (prompt month) exceed 10% of load, MCE will solicit market energy to close open positions and make a commercial decision to close the position. Open positions for terms beyond the prompt month will be monitored monthly and addressed in accordance with MCE's Load and Resource Balance Planning Model (Planning Model) and the IRP.

[4] Counterparty Credit Exposure – calculates the notional and mark-to-market exposure to each MCE counterparty individually by deal and in aggregate by counterparty. Counterparty credit exposure shall be evaluated on a quarterly basis. Counterparty exposure evaluation includes contingent collateral posting risks arising from changes in market prices and other factors.

[5] Reserve Requirement Targets – on no less than an annual basis, MCE staff will monitor MCE's reserves to ensure that they meet the targeted thresholds.

Consistent with the above, the Middle Office will develop reports and provide feedback to the Risk Oversight Committee.

Risk measurement methodologies shall be re-evaluated on a periodic basis to ensure MCE adjusts its methods to reflect the evolving competitive landscape.

6.2 Market Price Risk

MCE manages market price risk using its Load and Resource Balance which defines forecasted load, energy under contract and MCE's open positions in various energy product types including renewable energy

(Product Content Category I, II and III), carbon free energy, system power, and MCE's procurement targets.

MCE determines the quantity of energy it will contract for in each year using its Planning Model. The Planning Model includes an outline of the delivery term and quantity of energy by product type for which MCE will seek to contract in the upcoming year. The Planning Model informs MCE's solicitation planning including solicitation timing and strategy, and person or team responsible for the solicitation.

In general MCE will seek to purchase roughly equal portions of long term renewable energy in each year in order to diversify exposure to market conditions and reduce the risk of concentrating purchases in any one year.

For products generally purchased through short and medium-term contracts MCE follows a similar strategy of diversifying contracting over the delivery horizon.

As predominantly a net buyer, MCE manages its market liquidity risk through purchasing at different intervals as described in the Planning Model and maintaining a diverse set of counterparties to transact with.

Congestion risk is managed through the contracting process with a preference for day ahead scheduling and energy delivery at the NP 15 trading hub and through resource assessment and selection. Once energy is procured MCE manages congestion risks through the prudent management of Congestion Revenue Rights (CRRs) consistent with its Congestions Revenue Rights Risk Management Guidelines. CRRs are financial instruments used to hedge against transmission congestion costs encountered in the CAISO day-ahead market. MCE uses a third-party scheduling coordinator to manage its CRR portfolio. MCE uses CRRs to reduce its exposure to congestion and other CAISO charges, and will not use CRRs for speculative purposes.

6.3 Counter Party Credit and Performance Risk

MCE evaluates and monitors the financial strength of service and energy providers consistent with MCE's Credit Guidelines. Generally, MCE manages its exposure to energy suppliers through a preference for counter parties with Investment Grade Credit ratings as determined by Moody's or Standard and Poor's and through the use of security requirements in the form of cash and letters of credit. MCE measures its mark-to-market counter party credit exposure consistent with industry best practices.

6.4 Load and Generation Volumetric Risk

MCE manages energy delivery risks by ensuring that contracts include appropriate contractual penalties for non-delivery, acquiring energy from a geographically and technologically diverse portfolio of generating assets with a range of generation profiles. In order to ensure energy product targets are achieved, MCE uses 80 to 100 percent of the generator's average annual expected energy for certain variable or as available resources for operating year load and resource planning.

MCE manages load forecasting and related weather risks by contracting with qualified data management and scheduling coordinators who together provide the systems and data necessary to forecast and schedule load using good utility practice.

MCE's load scheduling strategy, as executed by its scheduling coordinator, is captured in its Load Bidding/Scheduling Guidelines. The strategy ensures that price risk in the day ahead and real time CAISO markets is managed effectively and is consistent with good utility practice.

6.5 Operational Risk

Operational risks are managed through:

- Adherence to this Policy and oversight of procurement activity;
- Conformity to Human Resources Policies and Guidelines;
- Staff resources, expertise and/or training reinforcing a culture of compliance;
- Ongoing and timely internal and external audits; and
- Cross-training amongst staff

6.6 Liquidity Risk

MCE manages liquidity risk through adherence to its loan and power purchase agreement credit covenants, limiting commitments to provide security consistent with its Credit Guidelines, ensuring it has adequate loan facilities, prudent cash and investment management, and adherence to its Reserve Policy. MCE monitors its liquidity (defined as unrestricted cash, investments and unused bank lines of credit) no less than weekly. MCE utilizes scenario and sensitivity analyses while preparing budget, rate, and pro forma analyses in order to identify potential financial outcomes and ensure sufficient liquidity under adverse conditions.

6.7 Regulatory/Legislative Risk

MCE manages its regulatory and legislative risk through active participation in working groups and advocacy coalitions such as the California Community Choice Association. MCE regularly participates in regulatory rulemaking proceedings and legislative affairs to protect MCE's interests.

7.0 Risk Management Policy Governance

7.1 MCE Board of Directors

The MCE Board or its delegated subcommittee is responsible for adopting this Policy and reviewing it as needed every two calendar years. The Board also approves MCE's annual budget, contracting authorities and delegate responsibilities for the management of MCE's operations to its CEO and Staff.

7.2 Technical Committee

The Technical Committee is responsible for approval of substantive changes to this Policy as needed every two calendar years, and for initiating and overseeing a review of the implementation of this Policy as it deems necessary. The Technical Committee is responsible for reviewing and approving the Integrated Resource Plan every year, and energy service and supply contracts consistent with MCE Board Resolutions describing contracting authorities.

7.3 Risk Oversight Committee (ROC)

The ROC shall include the following voting members: Chief Executive Officer (CEO), Chief Operating Officer (COO), General Counsel, and Director of Finance, or their designees in case of their absence. The Director of Power Resources and Technical Procurement Advisor shall be non-voting members of the ROC. The CEO shall act as the chair of the ROC.

The ROC shall meet once per calendar quarter, or as otherwise called to order by the CEO. On at least a quarterly basis the Risk Oversight Committee shall provide a report to the Technical Committee regarding its meetings, deliberations, and any other areas of concern. The Director of Finance shall make reports and seek approval for any substantive changes to this Policy from the Technical Committee.

The ROC shall from time to time adopt and bring current risk management guidelines defining in detail the internal controls, strategies and processes for managing market risks incurred through or attendant upon wholesale trading, retail marketing, long-term contracting, CRR trading and load and generation scheduling. The ROC shall specify the categories of transactions permitted and set risk limits for wholesale trading. The ROC shall receive and review information and reports regarding risk management, wholesale trading transactions, the administration of supply contracts.

The ROC shall have direct responsibility for enforcing compliance with this Policy. Any gross violations to this Policy, as determined by the Chair of the ROC, shall be reported to the Technical Committee for appropriate action.