

PEC BOARD POLICY POWER SUPPLY AND ENERGY MANAGEMENT

PEDERNALES ELECTRIC COOPERATIVE, INC.

1. Purpose:

The Pedernales Electric Cooperative (PEC), in its mission, strives to provide low-cost, reliable, safe energy solutions to meet the electric demand and energy needs of its members. The purpose of this Power Supply and Energy Management Policy ("Policy") is to establish and govern a sustained commitment to create and maintain a formal Power Supply and Energy Management Program ("Program") to cost-effectively manage PEC's power supply and energy requirements to meet the objectives established in this policy and the Board approved Power Supply Plan ("Plan").

The purchase and sale of electricity is required to satisfy PEC's obligations to its members and to manage PEC's Electric Energy Requirements. These activities require significant cost expenditure and expose PEC to cost fluctuations inherent with power suppliers or directly with fuel and power markets. This Policy and the Program are established for the purpose of creating a power supply and energy Risk Tolerance and a sustained commitment to manage the cost and risk of energy procurement in planning and in day-to-day operations.

2. Scope:

- 2.1.** This Policy governs the activities used to manage PEC's Electric Energy Requirements.
- 2.2.** This Policy governs the planning, acquisition, management, and oversight of PEC's Program using PEC resources, assets, supply contracts, and market products to provide a cost-effective, risk-managed energy portfolio for PEC's members.
- 2.3.** This Policy governs the actions required by PEC as a Load Serving Entity (LSE) in Electric Reliability Council of Texas (ERCOT) including but not limited to establishing and maintaining registered Qualified Scheduling Entity (QSE) services and assuring compliance with ERCOT protocols and operating guides.
- 2.4.** This Policy governs the management of PEC power supply resources and existing and future power supply contracts including the Lower Colorado River Authority (LCRA) Wholesale Power Agreement and non-LCRA supply options.
- 2.5.** This Policy governs the activities and resources associated with managing the Power Cost Recovery as established in the PEC Tariff and Business Rules document, which includes the Base Power Cost and Power Cost Adjustment.

3. Definitions:

The definitions below are utilized by power industry professionals in describing the ERCOT energy market. The definitions may or may not align with a *strictly defined term* within the financial industry due to differing operational characteristics between the two industries. Other definitions may also be found in the ERCOT Protocols.

- 3.1. Power Supply and Energy Management Program or Program** – is a collective term that holistically embodies the people, processes, culture, tools, and execution strategy for power supply at PEC.
- 3.2. Power Supply Plan or Plan** - The Power Supply Plan is a Board approved document that is updated annually and defines how PEC is going to meet its aggregated Electric Energy Requirements.
- 3.3. Electric Energy Requirements** – are the aggregated second by second energy and ancillary services that are required by PEC in the Real Time energy market.
- 3.4. Transmission** – is a term that refers to the high voltage physical electric system that is used to delivery power from a power plant to distribution level substations. This is synonymous with the term Transmission Facilities in section 2 of the ERCOT protocols.
- 3.5. TCOS** – Transmission Cost of Service is the cost incurred to utilize the transmission system to deliver power to PEC members within the ERCOT region. The Public Utility Commission of Texas authorizes the charge for all distribution providers.
- 3.6. Non-LCRA Requirements and Supply** – The portion of PEC's total electric energy requirements that is not served by the LCRA.
- 3.7. ERCOT – The Electric Reliability Council of Texas.** The term ERCOT is used interchangeably by industry personnel to mean:
 - a. ERCOT - the market or the collection of companies that make up the market
 - b. ERCOT, the Independent System Operator (ISO) that is responsible for operationally managing the multiple markets within ERCOT (the market) and financially settling all transactions between market participants and ERCOT the ISO. This is synonymous with the term Electric Reliability Council of Texas, Inc. (ERCOT) in section 2 of the ERCOT protocols.
- 3.8. Load Serving Entity (LSE)** - is a type of defined Market Participant in the ERCOT market, which sells energy to customers. This is synonymous with the term LSE in section 2 of the ERCOT protocols.
- 3.9. Market Participants** –Any electric industry organization registered in the ERCOT control area that ensures reliable power operations for the wholesale and retail competitive markets and may include entities performing the functions of qualified scheduling entity (QSE), load serving entity (LSE), resource entity (RE) or transmission/distribution service provider (TDSP), providers of last resort

(POLRs), and competitive retailers (CRs), Account Holder, Resource Entity, IMRE and REC Account Holder.

- 3.10. Qualified Scheduling Entity (QSE)** - is the *go-between* entity that electronically communicates with ERCOT for commercial and financial operating characteristics and data interchange. Power plants and customers can not directly communicate with ERCOT, only QSEs can. This is synonymous with the term QSE in section 2 of the ERCOT protocols.
- 3.11. Power Supply** – is a collective term that is used to refer to wholesale power purchases and sales.
- 3.12. Power Supply and Energy Management Transactions** – any and all energy transactions that are related to the buying and selling of energy from Day Ahead to three years in duration and not to extend beyond 42 months of the date of execution unless approved by the board.
- 3.13. Power Supply Portfolio** – A grouping of assets included in a Power Supply Plan.
- 3.14. Risk Tolerance** - the degree of variability in the Power Supply Portfolio value that a decision maker is willing to withstand. Risk tolerance is an important component in energy procurement and requires a realistic understanding of the decision-maker's ability and willingness to accept large swings in the value (or cost) of the overall portfolio. Often, factors affecting a decision-maker's risk tolerance include the time horizon over which asset is effective, the ability to manage revenue through changes to member rates, and the presence of multiple assets (each with different volatility of value) in the portfolio.
- 3.15. Speculation** - the act of buying or selling electricity related products such as physical or financial transactions that are outside of an underlying physical or financial position limit.

4. Defined Objectives:

The implementation and maintenance of the Program aims to enable the PEC organization to create, protect, and enhance value for PEC members by undertaking activities to meet the following objectives:

- 4.1. Low Cost** – PEC endeavors to provide low cost power supply in order to provide a competitive retail rate for its members which includes a stable energy rate.
- 4.2. Balance Risk** – PEC endeavors to balance the risk associated with power supply along with the Low Cost objective, while avoiding Speculation, to provide a stable energy rate to its members. Where a stable energy rate is measured by not having a constantly changing Power Cost Adjustment (PCA) rate and maintaining the Cost of Power over/under with in allowable limits.
- 4.3. Portfolio Diversity** – PEC values the diversity afforded by having electrical energy from multiple suppliers, multiple fuel types, multiple sources, and with various

contract lengths. PEC endeavors to utilize a Power Supply Portfolio that is guided by this principle while satisfying low cost and low risk objectives.

- 4.4. Portfolio Flexibility – PEC values the flexibility of being able to access the lowest cost available supply, the ability to quickly adapt its power supply strategy based on rapidly changing market conditions, and is guided by a principle of maintaining control over non-LCRA supply options while satisfying Low Cost and low risk objectives.

5. Power Supply and Energy Management Program:

The Program organizes and defines the design, oversight, and control of the Power Supply and Energy Management Transactions. PEC will be guided by its Risk Tolerance profile and Low Cost objective in establishing a Power Supply Plan and executing its Power Supply and Energy Management Program. The Program shall be managed in a manner of continuous improvement to achieve and maintain a high level of effectiveness and efficiency. The Power Supply and Energy Management Program will consist of the following elements:

- 5.1. Policy – Establishes the Program and provides for management and ongoing improvement of the Program and directs the execution of the annual Board approved Power Supply Plan within the approved authority and thresholds.
- 5.2. People – Designated individuals responsible for performing the processes and executing the strategy.
- 5.3. Processes – Processes collectively refers to the documents that describe how the Program will execute its activities through defined plans and procedures. Processes and procedures will operate under a continual improvement approach to formally address lessons learned, reduce errors, and strive for operational efficiency while reducing risk.
- 5.4. Tools – The Power Supply and Energy Management Program will utilize various tools such as software, hardware, 3rd party contracts, vendors, and consultants.
- 5.5. Culture – The culture will be one of collaborative team work that balances short-term, long term, risk adjusted market-based decisions. The team members will be highly informed of market based products, market design, market operating principles, and existing PEC power supply contracts.
- 5.6. Reporting and Control – The information and data that will be managed, available and provided on a routine and as-needed basis to document the actual and forecasted results and performance of the Program. The Program reporting and control structure will formally report to the CEO and to the Board as described in this Policy.

6. Power Supply Plan

The Power Supply Plan is a board approved document that is updated annually and defines how PEC is going to fulfill the member's aggregated Electric Energy Requirements. The timing of the review of the annual Plan will be consistent and

aligned with the overall annual business planning and budgeting process. The Plan will have the following major components:

- 6.1.** Minimum five year time horizon
- 6.2.** A range of forecasts of anticipated Electric Energy Requirements, market inputs such as fuel and power pricing, and other relevant planning and economic factors
- 6.3.** Evaluation of alternative wholesale supply and demand-side resource options and strategies
- 6.4.** Integration of the supply and demand options into a plan describing the mix of resources designated to meet current and projected energy requirements
- 6.5.** Forecast of the Cost of Power, TCOS, potential impact to the Base Power Cost, the PCA, and the Cost of Power over/under account
- 6.6.** Recommended least-cost, risk adjusted power supply plan considering the trade-offs of alternative options, timing, paradigms, and risks, for at least five years with the cost of power supply and associated risks of implementation
- 6.7.** Risk Tolerance which establishes the limits of authority authorized by the Plan and the control levels requiring the Program to report to the Board.

7. General Roles and Responsibilities

- 7.1.** The Board is charged with the development and oversight of this Policy and shall ensure all Program activities of PEC are in accordance with this Policy; approve initially and annually the Power Supply Plan; and review the effectiveness of the Program and make any changes to this Policy necessary to meet the objectives.
- 7.2.** The CEO is charged with administration of this Policy and is granted authority and responsibilities:
 - a.** to ensure all Program activities of PEC are in accordance with this Policy; to approve documentation for the administration of the Program;
 - b.** to oversee responsibilities and activities assigned to the Program;
 - c.** to recommend controls and periodically review the effectiveness of all aspects of the Program in addition to the Board;
 - d.** to approve contracts and other transactions necessary to implement the Program; and
 - e.** to retain outside advisors and organizations, if needed to assist PEC in entering into Power Supply and Energy Management Transactions.
- 7.3.** The CFO shall review the performance and effectiveness of the Program and the

execution against the Plan and approved limits of authority. The CFO shall report directly to the PEC Board the status of the Program to meet the limits included within the Plan.

- 7.4.** The Vice President of Power Supply and Energy Services shall be responsible for day to day operations and management of the Power Supply and Energy Management Program including the continual evaluation of the ongoing ability of the Program to meet the objectives established in this Policy and to effectively deliver the Plan, oversee and direct the development of the Power Supply Plan, continually monitor and control the performance of the Program against this Policy and the Plan, and oversee and direct the reporting of results to the Board, the CEO, and CFO.
- 7.5.** The Director, Power and Energy Risk Management shall be responsible for the execution of the Power Supply and Energy Management Program and functional development of the Power Supply Plan.

8. Monitor and Control

- 8.1.** The Vice President of Power Supply and Energy Services and the Director, Power and Energy Risk Management will report to the CEO on the Power Supply and Energy Management Program.
- 8.2.** The CFO will independently report on the Cost of Power and any associated matters relating to this Policy to the Board through the regular financial board reporting processes.
- 8.3.** The Program will endeavor to continually identify exposures to movements in energy prices and related market prices; quantify the impacts of these exposures on the objectives established in this Policy and the Power Supply Plan and mitigate these exposures in line with the Risk Tolerance and the authorities and controls established in this Policy.
- 8.4.** The Program will endeavor to continually quantify the forecasted impacts of changes in market conditions against the objectives established in this Policy and the approved Plan and Risk Tolerance over a five (5) year horizon. The Program will maintain a 3 year rolling forecast of the Cost of Power and associated impacts to the Cost of Power Over/Under Account, the Base Power Cost, and the Power Cost Adjustment. If an event or condition arises that may result in an impact to the Cost of Power, Cost of Power Over/Under Account, and/or PCA the CEO together with the Vice President of Power Supply and Energy Services shall report to the Board with a report of the issue or risk along with the recommended corrective action.
- 8.5.** As established in the Power Cost Recovery section of the Tariff and Business Rules, the PCA factor shall be maintained or adjusted monthly to balance the actual Cost of Power and the revenue collected from the Base Power Rate and PCA. Given the inherent fluctuations that exist between costs and revenues due

to weather and market factors and the objective to provide stable rates, the Cost of Power Over/Under account shall be maintained within a tolerance of +/- [\$5] Million as measured over a rolling [12] month basis. If it is determined that the Cost of Power Over/Under account cumulative balance will be outside of this tolerance at the last month of the forecast then the PCA shall be adjusted by an amount necessary to return the Cost of Power Over/Under cumulative account balance to a \$0 balance by the end of the [12] months following the effective date of the implementation of the PCA adjustment. Subsequent, additional PCA adjustments may be needed to accommodate additional fluctuations and changes that may occur.

- 8.6.** Once a month the Director, Power and Energy Risk Management, will present to the CEO, CFO, General Counsel, and VP Power Supply and Energy Services the Power Supply and Energy Management Monthly Report ("Monthly Report"). A summary of the non-confidential portion of the report shall be included in the monthly PEC Board report.
- 8.7.** The Monthly Report shall be consistent with the approved Power Supply Plan to provide the following:
 - a.** Program performance metrics
 - b.** Forecasts of the Cost of Power and Cost of Power Over/Under Account along with the associated impacts to Power Cost Recovery rates.
 - c.** Required or recommended changes to the PCA rate,
 - d.** Updates on current and open positions
 - e.** Market and pricing updates,
 - f.** Status updates on Plan activities
 - g.** Updates on potential risks and uncertainties associated with the Plan, and
 - h.** Report on the ability of the Program to execute the Plan within the authorization established in this Policy, the Plan, and the established Risk Tolerance.

9. Delegation of Authority and Approved Transaction Types

- 9.1.** The delegation of authority allows the personnel within the Power Supply and Energy Management Program to be able to execute the Board approved Power Supply Plan within the Board approved Risk Tolerance and Policy controls.
- 9.2.** Personnel within the Power Supply and Energy Management Program will have the authority to execute Power Supply and Energy Management Transactions within the approved tenor based limits as defined in the Table of Limits and

Approved Products defined in this section.

- 9.3.** Defined Products allowed for Power Supply and Energy Management Transactions include: the purchase and sale of electric energy, ancillary services, ERCOT Congestion Revenue Rights, physical and financial power options, Renewable Energy Credits, emissions allowances, carbon offsets, natural gas, natural gas transportation, and gas storage.

Table of Limits and Approved Products

Transaction Authorization Limits and Products	Board of Directors	PEC CEO	VP, Power Supply & Energy Services	Director, Power and Energy Risk Management
Term	Any length	up to 3 years	up to 2 years	up to 1 year
EEL Master Agreement(s)	✓			
Buy / Sell Physical Electric Energy	✓	✓	✓	✓
Buy / Sell Financial Electric Energy	✓	✓	✓	✓
Ancillary Services	✓	✓	✓	✓
Congestion Revenue Rights	✓	✓	✓	✓
Renewable Energy Credits	✓	✓	✓	✓
Physical Power Options	✓			
Financial Power Options	✓			
Emissions Allowances	✓			
Carbon Offsets	✓			
Natural Gas	✓			
Natural Gas Transportation	✓			
Gas Storage	✓			
Volume	Quantity needed for any position of any size	Quantity needed to close a position as established and consistent with the board approved Power Supply Plan		
Pricing	Pricing needed for any position of any size	Pricing authorized within the limits established in this Policy and the board approved Power Supply Plan		

10. Enforcement

10.1. Violations of this Policy may result in disciplinary action, up to and including, termination.

11. Superseding Effect

11.1. This Policy supersedes all previous policies and memoranda concerning the subject matter, including the Resource Planning Policy.

11.2. This Policy supersedes the Authority and Responsibilities Policy items (p), (q), (t) and (u) regarding Authority Reserved to the Board of Directors. This Policy does not supersede any other provision of the Authority and Responsibilities Policy, including any other limitations.

12. References and Related Documents:

12.1. Authority and Responsibilities Policy

12.2. Budget Policy

12.3. Rate Policy

12.4. Tariff and Business Rules

12.5. [Enterprise Risk Management (ERM)]

Policy Title:	PEC Board Policy Power Supply and Energy Management
Review Frequency:	Annual
Last Reviewed:	
Date Adopted:	XXXX, 2017
Effective Date:	XXXX, 2017
Amendment Dates:	
Approver:	Board of Directors
Applies to:	General Counsel CEO CFO and Controller VP Power Supply & Energy Services Director, Power Supply and Energy Risk Management

	All Employees Identified in Program Documents Board of Directors
Administrator:	CEO, CFO, VP Power Supply & Energy Services
Superseding Effect	This Policy supersedes all previous policies and memoranda concerning the subject matter including the Resource Planning Policy. Only the Approver may authorize exceptions to this Policy.