

XV. ENERGY PORTFOLIO MANAGEMENT

A. PSE's Risk Management Approach

The Least Cost Plan is a depiction of the Company's overall load-resource balance, at a given point in time. It is based upon current projections of load and assumptions about the future availability of existing resources. The structure of the portfolio depicted in the Least Cost Plan remains essentially fixed until the next opportunity to modify one or more resources. The structure of the portfolio also defines the fixed costs that PSE will incur until the next portfolio modification.

In contrast, everyday management of PSE's power and gas portfolios is a dynamic process. The effort to minimize costs and manage cost volatility is known as "risk management." Risk management is the process by which PSE manages its wholesale energy portfolio in a dynamic environment to mitigate the impacts of risk factors upon power and gas costs.

Commodity price volatility in energy markets, combined with operational risks, can have a meaningful impact on overall power and gas costs. Energy risk management focuses on managing costs and reducing potential exposure. This entails balancing long- and short-term resource commitments with load requirements, and understanding risk exposures within the regulated power and natural gas portfolios.

The following principles guide PSE's energy risk management practices: 1) identify risk exposure in the energy portfolio, 2) measure the degree of the risk exposure, 3) develop and test risk management strategies designed to reduce risk exposure, 4) implement risk management strategies that minimize energy cost volatility, and 5) implement approved risk management strategies. PSE's energy risk management focuses on risk mitigation and value protection within the regulated energy portfolios for electric and gas customers.

B. Portfolio Management

Risk management activities include hedging the portfolio against many of the risks inherent in a load-serving entity's regulated portfolio, arising from the imbalances that can occur between loads and resources. PSE's electric and gas portfolios contain a diverse mix of resources with widely differing operating and cost characteristics. Risk management focuses on risk impacts to the overall portfolio, in order to view the aggregated results of correlated and interconnected

elements of the power and gas portfolios. Similarly, PSE considers risk mitigation strategies for the overall portfolios.

Although there are many complex variables embedded in the portfolio, the major volume and price drivers of power and gas cost volatility are: (1) streamflow variation affecting the supply of hydroelectric generation, (2) risk of forced outages of thermal plants, (3) weather uncertainty affecting power and gas usage, (4) variations in market conditions such as wholesale power and gas prices, (5) transmission and pipeline transportation constraints, (6) storage inventory levels, and (7) North American and global energy prices, including crude oil. All of these create energy cost volatility that PSE seeks to mitigate through its energy risk management activities.

PSE manages its energy supply portfolio to achieve three primary objectives:

- Ensure that physical energy supplies are available to reliably serve retail customer requirements.
- Manage portfolio risks to reliably serve retail load at overall least cost while limiting undesired volatility on customer bills and PSE financial results.
- Optimize the value of PSE energy supply assets.

The risk types associated with PSE's power supply portfolio are both financial and operational in nature:

- **Volumetric Risk** – Volumetric risks arise due to the potential variability of loads and resources within the portfolio. For example, customer loads will fluctuate with weather, and production from specific plants may vary depending upon rainfall. This potential variability in demand and supply creates imbalances that the Company must consider and manage.
- **Commodity Risk** – Future power and gas prices are unknown and potentially volatile. Uncontrollable factors, including local and national weather, economic conditions, hydro supply, plant availability in the Pacific Northwest region, regional reserve margins, and oil prices drive this price uncertainty. Thus, PSE and its customers are at risk for potential commodity price changes if PSE purchases products in the short-term power market.

- **Counterparty Risk**— Counterparty risk is the risk of default by PSE’s counterparties. A strategy to mitigate price volatility can go awry if the counterparty fails to perform its contractual obligations, and causes PSE to be at risk for liquidated damages.
- **Operational Risk** – Changes in generation or transmission operating conditions and availability that affect PSE’s portfolio (such as plant outages and transmission curtailments) are examples of operational risk.
- **Estimation Risk** – There are estimation risks associated with using models to measure real world events – especially in the complex energy industry. Different assumptions or inputs can all cause changes to the model results.

The Company’s primary objective is to develop and implement effective risk management strategies that will reduce overall costs and operational risks when buying energy from the markets (in times of need) and selling energy into the markets (in times of surplus). PSE manages the major portion of its electric portfolio risks with a diverse supply portfolio of resources that includes hydro, coal-based generation, combustion turbines, non-utility generation contracts, long-term purchase and exchange contracts, gas supply contracts, gas transportation and electric transmission. Imbalances in the resource-load equation are then managed with short-term physical and financial wholesale energy hedging instruments.

PSE uses hedging transactions to mitigate risk exposures. A hedge is an offsetting position designed to protect against fluctuations in a commodity price. For example, if a company is deficit energy, then an important hedge would be to purchase energy. By extension, a hedge instrument is a transaction that can be used to hedge risk exposures. Specifically, in order to balance the supply portfolio and to achieve net cost reductions, PSE may purchase and sell energy in the wholesale commodity markets, acquire options that allow the Company to buy or sell at a pre-determined price, enter into third party contracts that mirror the dispatch-displacement capacity of generation units, and use storage contracts.

PSE assesses how a given hedging strategy will mitigate risk exposure in the portfolio, then evaluates the costs to effectuate the hedge. There are many factors to consider and many uncertainties. Therefore, there is no single formula for weighing the cost/benefit analysis of a hedge strategy. There has to be a balance between risk reduction, the opportunity costs associated with certain hedges, and the outright costs of some hedges (such as options). Also, counterparty risks and credit availability need to be determined in connection with hedging

strategies. In order to help determine a hedge strategy, PSE measures the incremental benefit of the next hedging opportunity. This approach is important when there are constraints to the availability of credit with which to engage in hedging transactions or when there are market liquidity concerns.

PSE's hedge strategies for the gas and electric portfolios incorporate risk analysis, operational factors, the professional judgment of its employees, as well as fundamental analysis. Programmatic hedge plans are developed to insure disciplined hedging, and discretion is used within specific guidelines of the programmatic hedge plans approved by the risk management committee. Most hedges can be implemented in ways that retain the Company's ability to use its energy supply optimization opportunities. Programmatic hedging provides a framework with specific guidelines. PSE employs programmatic risk reduction, with defined volumes and time periods, to methodically reduce risk exposures in its power and gas portfolios. Additionally, PSE employs market analysis and fundamental analysis to determine the best time to execute hedge transactions and the appropriate amount to hedge, within the specified guidelines.

C. Integration of Energy Risk Management within Energy Supply

PSE's energy risk management tools, systems and models are integrated with those employed in longer range planning, such as long-term risk management, resource planning and least cost planning. By example, in the area of long-term risk management, the Company integrates model output from the short- and long-term models to create a seamless outlook of future load, supply, and portfolio exposure to market volatility. This integration is used as the foundation for resource and financial analysis, and it enhances the Company's ability to evaluate various hedging and resource acquisition strategies.

**Exhibit XV-1
Energy Supply Synergies**

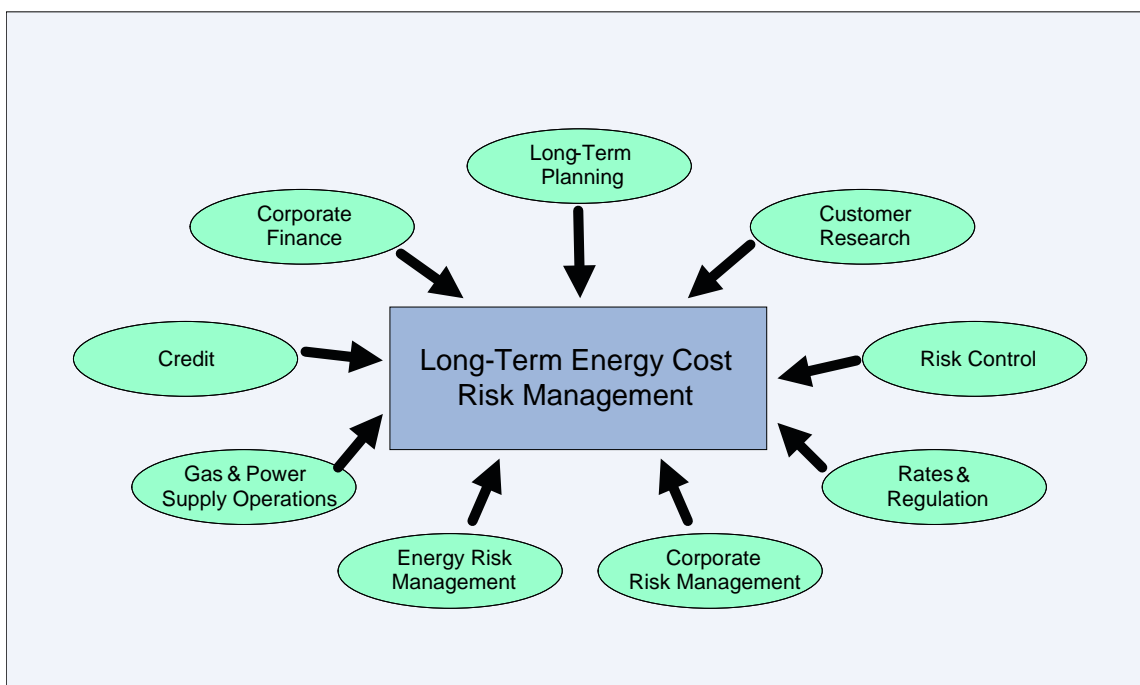


D. Long-term Energy Risk Management

The following provides an overview of the Company's long-term risk management. The long-term energy risk management strategy expands the focus of short-term risk management by addressing the longer-term risks identified in resource planning and resource acquisition, as well as other key considerations.

The diagram below represents the Company's organizations that contribute to or influence long-term energy risk management:

Exhibit XV-2



Long-term energy cost risk management supports the following goals.

- *Manage potential energy cost variability in context of total cost of service.* This is addressed by estimating the expected cost and benefits of long-term alternatives in addition to performing fundamental analysis that supports the execution of various hedge strategies.
- *Minimize buying at “high” market.* This is addressed by systematically reducing energy exposure. All strategies achieving this must balance the potential impacts of customer costs, financial impacts, and market realities.
- *Actively manage the Company’s energy portfolios.* This is addressed by ongoing analysis of hedging needs and by continually assessing all alternative strategies.

As part of this effort to develop a comprehensive strategy and balanced approach to energy cost risk management, the Company considers hedging opportunities in the short-term, intermediate-term, and long-term energy markets. Energy cost risk is borne by customers; therefore, it follows that the strong management of long-term energy costs should be based on the risk preferences of customers.¹ Accordingly, one aspect of the evaluation of hedging opportunities is to identify the value, as perceived by PSE customers, of removing some portion

¹ Notwithstanding the form of the regulatory cost recovery mechanism, the Company faces a risk of disallowance if it is unable to demonstrate prudent management of energy costs.

of the price volatility from retail customers' power and gas bills for a specific length of time. To examine their risk preferences, the Company has engaged in market research to assess retail consumers' preferences regarding the importance (value) of decreasing the retail rate volatility that is introduced through volatile commodity markets. The results from this market research will be utilized in developing hedging structures for both the power and PGA gas portfolios.

The Company generates a long-term physical and financial base position for its power portfolio (power as well as gas-for-power generation) and gas portfolio using the base case of a distribution of alternative scenarios. From this, PSE can estimate risk by calculating the monetary exposure of the energy position as a percent of energy cost exposed to spot market purchases. This metric is critical to managing the energy portfolio with respect to total power costs or total PGA gas costs, as it establishes an indicator that is used to develop hedging objectives for the planning horizon. Hedging strategies strive to provide the optimal outcome, minimizing downside and maximizing upside. But it is important to note that in order to mitigate hedging costs, some upside opportunity usually has to be relinquished to minimize negative risk exposure.

E. Risk Control

The Company is not engaged in the business of assuming risk for the purpose of speculative trading revenues. Therefore, wholesale market transactions are focused on balancing the Company's energy portfolio, reducing costs and risks where feasible, and reducing volatility in wholesale costs and margin in the portfolio. In order to manage risks effectively, PSE enters into physical and financial transactions, which are appropriate for the service territory of the Company and are relevant to its regulated electric and gas portfolios.

An important aspect to portfolio management includes strong internal risk controls. PSE's portfolio exposure is managed in accordance with Company policies and procedures. There is an oversight executive group, the risk management committee, that provides policy-level and strategic direction for management of the energy portfolio. The audit committee of the Company's board of directors has oversight of the risk management committee.

PSE employs an energy risk management system that models elements of the Company's load and resources, and can report risk exposures. There is centralized data input for transaction information, and the database holds information critical for credit risk management as well as

energy risk management analysis. The risk system interfaces with physical scheduling systems as well as the Company's corporate accounting model for billing, accounting, and data records management.

The risk metrics the Company employs are aimed at assessing exposure for the purposes of developing strategies to reduce the potential exposure on a cost-effective basis in regulated utility portfolios. Specifically, the amount of risk exposure is defined by time period and by portfolio. It is measured through statistical methods aimed at forecasting risk. PSE monitors exposures on a regular basis; analyzes volumetric, commodity price, counterparty, and operational risks; and monitors transactions against approved strategies. Strong system controls are key to providing internal control checks within the risk management framework. To document decisions, the Company develops strong documentation of analysis and strategy, and maintains detailed files and minutes in a secure location.