

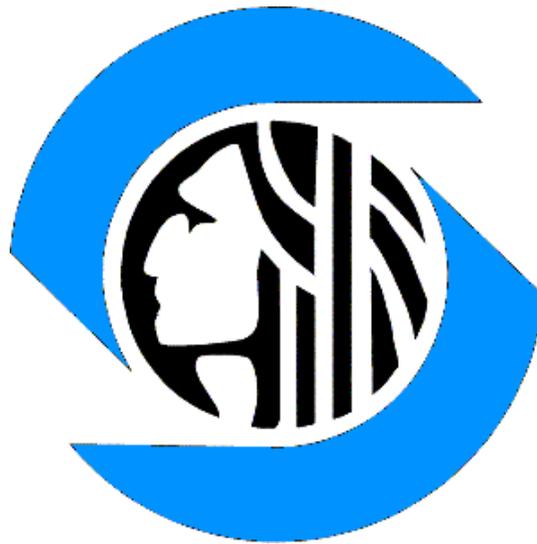
Raman Vishwanathan  
SCL Risk Management Policy RES ATT 1  
March 31, 2013  
Version # 1

SCL Risk Management Policy RES ATT 1

# SEATTLE CITY LIGHT

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## Wholesale Energy Risk Management Policy



**MAY 31, 2013**  
**VERSION 1.0**

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This Wholesale Energy Risk Management (WERM) Policy was prepared by the City Light Department's Risk Oversight Division to provide a comprehensive framework to manage risk surrounding wholesale energy marketing activities. This policy has been distributed internally within the City Light organization, the Seattle City Council (City Council), including its Energy & Environmental Committee (EEC), the Mayor's Office, and with others that may be affected by its implementation.

WERM Policy requires approval by City Light's Risk Oversight Council, General Manager, and final adoption of the resolution by the Full City Council.

Upon adoption by the Full City Council, this WERM Policy would be made effective by City Light's Chief Financial Officer.

\_\_\_\_\_  
Jeff Bishop, Seattle City Light, Chief Financial Officer

\_\_\_\_\_  
Effective Date

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# 1 INTRODUCTION

## 1.1 BACKGROUND

For The City of Seattle’s City Light Department (City Light), the supply of power exceeds its retail demand on an annual basis, under all but the most extreme low water conditions. This excess power is sold in the wholesale power market, and the revenue generated is used to offset costs that would otherwise be borne by City Light’s retail ratepayers. However, City Light faces significant uncertainty regarding both the quantity of energy available to the utility, due to its reliance on hydroelectric generation and the prices prevailing in the wholesale power market. These uncertainties result in financial risk for the utility and its ratepayers.

City Light can sell its surplus power in the “spot market” as this surplus power becomes available, or it can sell its anticipated surplus in the “forward market” for future delivery. Both practices involve risks. Waiting to sell surplus power in the spot market exposes City Light to the possibility of selling at low prices if the wholesale market is flush with power. Selling surplus power in the forward market at a known, fixed price mitigates this risk, but exposes City Light to the possibility of having to purchase power at unfavorable prices in order to meet these forward commitments (as well as retail demand) in the event actual supplies turn out to be less than projected at the time the forward sale was executed.

The policies outlined below are designed to establish the framework for City Light to manage the risks that are inherent in the wholesale energy markets it participates in. These policies specify a risk metric, a set of rules to guide decisions concerning the sale and purchase of energy and related products in the spot and forward markets, an organizational structure to support these activities, and a clear statement of roles and responsibilities of City Light’s Divisions and personnel.

## 1.2 PURPOSE

The purpose of this Risk Policy is to specify the management responsibilities, governance, organizational structures, risk management standards, risk exposure limits, transaction limits and operating controls which are necessary to ensure that City Light’s financial risk exposures are properly identified and managed and that the appropriate segregation of duties are in place. This Policy provides the framework through which City Light management and staff will identify, measure, manage, limit, and report City Light’s financial risks and risk management activities.

Further, this Policy serves to formally establish a Wholesale Energy Risk Management program and document the organizational structure ([Appendix B](#)) utilized by City Light to meet the electricity needs of its customers, manage the risks inherent in its wholesale

energy markets portfolio, and minimize the variance in the value of surplus power and transmission assets. As such, this document describes City Light's energy risk management roles and responsibilities, and delegations of authority that will govern how City Light conducts business in the wholesale energy markets.

### **1.3 AUTHORITY**

City Light operates under the authority of the Mayor and City Council of The City of Seattle. City Light is charged with operating its power supply resources, transmission agreements, and electric system to meet the power needs of its customers. The City recognizes that because of the nature of its customer demands and power supply portfolio, City Light will experience imbalances between the two and must therefore transact in the wholesale energy markets for energy services and products to reliably serve its customers.

By endorsing this Wholesale Energy Risk Management Policy (Risk Policy) document by City Resolution, the City Council approves this Risk Policy and affirms the authority and responsibility of the General Manager of City Light and his or her designees to comply with it, consistent with the authority granted by Seattle Municipal Code Section 21.49.130.

### **1.4 SCOPE**

This Risk Policy governs all wholesale market activities that may impact the financial risk profile of City Light pursuant to Seattle Municipal Code Section 21.49.130. Descriptions of physical transactions commonly utilized by the Power Management Division's transaction staff are maintained in the Wholesale Energy Risk Management Procedures Manual ("Procedures Manual").

The specific operating procedures and parameters for implementing this Risk Policy are detailed in the Procedures Manual to be reviewed and approved by the Risk Oversight Council (ROC), a body within City Light established by this Risk Policy that reports to the General Manager. The existing procedures are attached for informational purposes only as Appendix A.

Please refer to [Appendix C](#), Glossary of Terms, for definitions of terms contained in this Policy and as used by City Light.

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All City Light employees in relevant functional areas are expected to comply with and acknowledge their understanding of both this Risk Policy and the associated Procedures Manual as it applies to their current position at City Light. For additional information please refer to Section [2.13](#). Policy Violations and Exceptions.

## **2 ORGANIZATION & GOVERNANCE**

### **2.1 Independence & Segregation of Duties**

An effective risk management and compliance program requires clear segregation of duties, reporting lines, and incentives between functions and personnel who originate transactions and manage risk, and those who analyze, monitor, and report risk.

The “Front-Middle-Back Office” model standard in the industry provides for segregating Wholesale Marketing activities into Power Marketing (“front office”), Risk Oversight & Wholesale Settlement (“middle office”), and Accounting (“back office”) functions:

In City Light, the duties of the Front Office lie with two groups within Power Supply and Environmental Affairs –

Power Management Division (PMD) is responsible for transactions of prompt months and 24 months or less, and the PMD’s transaction staff maintain direct, day-to-day responsibility for the execution and management of transactions governed by the Policy.

While the Power Contracts & Resource Acquisition Division (PCRA) is responsible for transactions greater than 24 months, and PCRA maintains direct, day-to-day responsibility for the execution and management of transactions governed by the Policy.

The functions of the Mid Office are carried out by the Risk Oversight Division (ROD), which provides independent risk oversight and wholesale settlement. ROD has the primary role in implementing the Policy, and is functionally separate from the PMD and Accounting Divisions to ensure independence.

The Back Office functions are carried out by the Accounting Division by supporting the PMD and ROD with a wide range of administrative activities necessary to execute and invoice transactions, record transactions to the General Ledger, prepare required reporting and to support the risk control efforts (e.g., data collection, financial hedge accounting, billing, etc.) consistent with the Policy. The Accounting Division is again functionally separate from the PMD and ROD to ensure independence.

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City Light has developed a risk management and risk oversight organizational structure to support this requirement (see [Appendix B City Light's Energy Risk Management Organization Charts](#)). The core elements of the structure for risk management purposes are:

- Seattle City Council
- Mayor
- General Manager
- Chief Financial Officer (CFO)
- The Risk Oversight Council (ROC)
- The Power Management Division's transaction staff (PMD)
- The Risk Oversight Division (ROD)
- The Resource Planning Forecasting & Analysis Division (RPFA)
- The Power Contracts & Resource Acquisition Division (PCRA)

The following sections define the wholesale energy risk management roles and responsibilities of the individuals and groups listed above.

## **2.2 Role of Seattle City Council**

In regards to the City Light wholesale energy risk policy the City Council is responsible for:

- Understanding the nature of the financial risks City Light faces; and
- Adoption of the WERM Policy to ensure proper measuring, monitoring, control and reporting of all risks surrounding the power marketing activities of City Light.

The City Council generally establishes a standing committee to review legislation and recommend action to the City Council on issues related to City Light. This Policy refers to that committee as the City Council's Energy Committee (CEC) and it will be understood to mean the City Council Committee with responsibility for City Light issues, regardless of the actual name of that committee.

## **2.3 Role of the Mayor**

In regards to the City Light Wholesale Energy Risk Management Policy the Mayor is responsible for:

- Appointing the Utility General Manager who ensures compliance with the Risk Policy.
- Reviewing and approving the WERM Policy that will be presented to the City Council,
- Transmitting a WERM Policy to Council that ensures proper measuring, monitoring, control and reporting of all risks surrounding the power marketing activities.
- Ensuring compliance with the WERM Policy following Council approval.

## **2.4 Role of the General Manager**

Concerning wholesale energy risk management efforts, the General Manager is responsible for:

- Ensuring compliance with this Risk Policy;
- Ensuring adequate internal controls exist to safeguard City Light's financial integrity and its retail customers with respect to wholesale energy purchase and sales activities;
- Ensuring that all wholesale energy purchase and sales activities are monitored by City Light staff not directly involved in executing the transactions;
- Resolving Risk Oversight Council vacancies in the best interests of the Utility while preserving the segregation of duties necessary for adequate oversight; and
- Making final decisions on risk management issues when the Risk Oversight Council cannot reach a consensus.

## **2.5 Role of the Chief Financial Officer (CFO)**

In regards to wholesale energy risk management efforts, the CFO is responsible for:

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- Serving as the Chair of the Risk Oversight Council, leading the ROC meetings;
- Briefing the General Manager on City Light's risk exposures and ROC actions on a regular basis during the monthly financial review and as necessary;
- Presenting requests for changes in risk limits contained in this Policy to the General Manager;
- Setting the counterparty credit limit threshold defined as the maximum secured and unsecured credit limit that may be extended to any counterparty;
- Recommending to the ROC the methodology used to establish appropriate credit for counterparties; and
- Suspending transacting with counterparty at any time due to concerns about the counterparty's credit-worthiness or ability to fulfill the terms of a transaction.

## **2.6 Role of the Risk Oversight Council (ROC)**

The ROC is the primary body within City Light with the authority and responsibility for implementing the risk management and oversight functions of this Policy and leading City Light's energy risk management efforts on a path of continuous improvement.

### **2.6.1 Risk Oversight Council Structure**

#### *2.6.1.1 Voting and Non-Voting Membership:*

The ROC shall be comprised of three voting members and three non-voting members. The Chief Financial Officer (Chair), the Power Supply & Environmental Affairs Officer, and the Director of Risk Oversight shall each have a single vote on matters that come before the ROC. At least three voting members, or their designees, must participate in the ROC meeting in order to vote and approve a proposed action.

The other three non-voting members are the Director of Power Management, the Director of Power Contracts & Resource Acquisition, and the Financial Planning Manager or their equivalent as determined by the General Manager.

#### *2.6.1.2 Meeting Timing and Frequency:*

The ROC shall meet no less than twice per calendar month. Attendance at ROC meetings shall be mandatory for appointed members. For a ROC meeting to be held, there needs to be at least four members in attendance, of which three will need to be voting members or their designees but limited to no more than two voting designees.

Member attendance shall be recorded in the ROC meeting minutes. Any member of the ROC can request an emergency meeting of the ROC to address circumstances or issues that may require immediate attention.

In the event a voting member is unable to attend a ROC meeting in person or by telephone, the member may designate an alternate to attend and vote in their absence, including one of the non-voting members. If any two of the voting members, or their designees, are not present at a ROC meeting, a vote on a proposed action cannot take place. The ROC will make decisions and take actions by a simple majority vote. If the ROC reaches an impasse that cannot be addressed through a vote, the Chair will refer the issue to the General Manager by the end of the next business day for resolution.

#### **2.6.1.3 Member Vacancies:**

In cases where a member of the ROC leaves the employment of City Light, the General Manager will resolve the ROC vacancy by making an interim appointment at his discretion.

The Director of Risk Oversight will act as Secretary to the ROC and will document all meetings and actions taken by the ROC in meeting notes that will be distributed to ROC members for their review and acceptance. Meeting notes approved by the ROC will be distributed by the Director of Risk Oversight to the General Manager, ROC members, Mayor, and Council central staff.

#### **2.6.2 Risk Oversight Council Responsibilities**

The ROC is responsible for:

- Reviewing and approving the Procedures Manual associated with this Policy and changes to it;
- Reviewing and approving risk management strategies and hedging plans to be implemented by the Power Management Division;
- Approving, upon the recommendation of the CFO, the methodology used to establish counterparty credit limits;
- Monitoring and assessing compliance with this Policy and associated procedures;
- Discussing and pre-approving limit exceptions when appropriate;
- Discussing Policy violations or exceptions and taking corrective action to minimize related losses or increased risks as appropriate;
- Reviewing this Policy on an annual basis and recommending changes to the General Manager by July 1;

- Discussing elements of energy risk management best practices and developing a City Light opinion of their specific practicality;
- Conducting other activities relevant to the implementation and oversight of this Policy and related procedures;
- Providing a timely summary of ROC accomplishments for the past year and setting of goals for the upcoming year to the General Manager by March 15th. This summary will also be provided to Mayor and Council staff;
- Ensuring the continual improvement in City Light's risk management and oversight functions;
- Ensuring the continual improvement in City Light's risk analytics by directing the activities of the RWG;
- Review and approve expected, recurring, and material changes to all modeling inputs used by the ROC to ensure that market, operational and credit risks are accurately quantified; and
- Review wholesale transactions of greater than 24 months, and recommend approval, if applicable, to the General Manager.

### **2.6.3 Risk Working Group (RWG)**

The RWG is a technical work group, functioning under the delegation of the Risk Oversight Council, with primary role to providing analytical support to the ROC by examining methods and procedures used to calculate City Lights forward portfolio position, wholesale market pricing and risk position. The RWG will be comprised of employees from the three Divisions -- Risk, Finance and Power Management with familiarity of the models used to perform this work. The RWG will be chaired by the Director of Risk Oversight or his/her designee and membership in the RWG will be confirmed by the ROC.

## **2.7 Role of the Power Management Division (PMD)**

The PMD is led by the Director of Power Management, who reports directly to the Power Supply and Environmental Affairs Officer, and manages the generation portfolio on behalf of City Light. It transacts in the physical wholesale energy market as needed to balance the supply of electricity to demand and to mitigate the risks inherent in managing the system, subject to the limitations established by this Risk Policy and the ROC and in accordance with the Procedures Manual.

### **2.7.1 Power Management Division's Marketing Staff Responsibilities**

The responsibilities of the PMD include:

- Meeting City Light's customer load obligation;

- Managing City Light's generating resources, short-term contracts and transmission agreements to meet its hourly, daily, balance of month, and forward month obligations (up to 24 months forward on a rolling basis);
- Extracting value from City Light's power supply portfolio and transmission contracts with due consideration of risk;
- Formulating and recommending risk mitigation strategies and hedging plans to the ROC that are consistent with City Light's objectives and this Risk Policy;
- Implementing strategies and hedging plans approved by the ROC; and
- Other activities relevant to the daily management of a power system.

### **2.7.2 Role of Resource Planning, Forecasting & Analysis (RPFA)**

The RPFA is led by the Director of the Resource Planning, Forecasting and Analysis and manages resource and load forecasting. The Resource Planning, Forecasting & Analysis (RPFA) Director reports directly to the Director of Power Management. The responsibilities of the RPFA include:

- Provide resource and load forecasts to Risk Control, Power Management Director and staff and to ROC;
- Review and approve expected, recurring, and material changes to all modeling inputs used by the ROC to ensure that market and operational risks are accurately quantified;
- Producing City Light's Integrated Resource Plans, updates as required and presentation to ROC;
- Updating the Table of Expected, Recurring and Material changes to modeling inputs as required, from time to time; and
- Updating the resource forecasts as outlined in the procedures manual.

### **2.7.3 Role of the Power Contracts & Resource Acquisition Division (PCRA)**

The PCRA is led by the Director of Power Contracts & Resource Acquisition and manages the long-term contract portfolio and procures new, renewable resources on behalf of City Light. The Director of PCRA reports directly to the Director of Power Management. It transacts in the Renewable Energy Credit (REC) and Greenhouse Gas (GHG) markets as needed to balance the supply of environmental attributes to maintain compliance with City policies, state law, and potential federal law, subject to the limitations established by this Risk Policy and the ROC and in accordance with established procedures. The responsibilities of the PCRA include:

- Meeting City Light’s customer load obligation by managing long-term contracts and acquiring new resources consistent with City Light’s Integrated Resource Plan, City policies, state law, and federal law;
- Extracting value from City Light’s environmental attributes portfolio with due consideration of risk;
- Formulating and recommending resource acquisition and environmental attribute risk mitigation strategies to the ROC that are consistent with City Light’s objectives and this Risk Policy;
- Implementing strategies approved by the ROC; and
- Other activities relevant to the management of City Light’s long-term contracts and environmental attributes portfolio.

## **2.8 Role of the Risk Oversight Division (ROD)**

The ROD is led by the Director of Risk Oversight and provides the day-to-day continuous independent risk management and oversight functions at City Light. It serves as the “middle office” in City Light’s energy risk management organization.

The Director of Risk Oversight will meet with the CEC and with Council Staff as requested to review recent City Light risk management activities.

The Director of Risk Oversight will act as temporary chair of the ROC in the absence of the CFO.

### **2.8.1 Risk Oversight Division Responsibilities**

Daily responsibilities and activities of the ROD can include but not limited to the following:

- Assess and monitor compliance with the Risk Policy and Procedure Manual;
- Report violations or exceptions of Risk Policy or Procedure Manual limits and recommend remediation as necessary;
- Monitor market and counterparty events in order to anticipate changes in City Light’s risk profile;
- Develop and propose practical improvements to business processes and internal controls within the transaction lifecycle;
- Recommend specific risk limits consistent with the utility’s risk management objectives and risk tolerance;
- Engage the ROC in discussions regarding events or market developments that could expose the utility to potential opportunities and losses;

- Conduct credit scoring and analysis of City Light's existing and proposed counterparties;
- Recommend credit limits for counterparties to the Chief Financial Officer;
- Negotiate and manage counterparty credit enhancements;
- Document proper accounting treatment of power and transmission transactions and any associated attributes, and provide reports, disclosures, and related information to the Accounting and Finance Divisions for their end use;
- Issue periodic reports on Risk Policy compliance, hedging plan status, market positions, and risk profile (for additional detail please refer to Section [3.8 Risk Reporting](#));
- Report the utility's transaction prices daily to specific index price developers;
- Evaluate the effectiveness of the risk metrics employed;
- Validate and test models used in risk management to ensure that market and credit risks are accurately quantified; and
- Research, develop, test, and implement risk measurement methodologies and models by coordinating such activities through the Risk Working Group (RWG).
- Review and approve expected, recurring, and material changes to all modeling inputs used by the ROC to ensure that market, operational and credit risks are accurately quantified
- Present wholesale transactions of greater than 24 month to the ROC for it's review, if applicable, recommend approval of the contract by the General Manager, Mayor and City Council.

In broad terms, ROD functions include but are not limited to the following in relation to the Wholesale Energy Risk Management.

#### *2.8.1.1 Risk Control & Reporting*

To ensure all transactions are appropriately recorded and meet Risk Policy guidelines, Risk Control & Reporting performs the deal review of all transactions, including pre-deal assessments, prior to approval and confirmations.

Provides position reports and Mark-to-Market (M-t-M) valuation of forward transactions and relevant risk metrics to evaluate hedging strategies and compliance to applicable risk limits.

### **2.8.1.2 Credit Risk Management**

Wholesale Credit Risk Management performs technical and administrative duties in connection with credit analysis and approving new and existing counterparties, and calculating, aggregating, monitoring and reporting all credit exposures.

The responsibility to accept and manage credit risks within Policy guidelines shall reside within ROD and is required to maintain accurate records and produce timely reports to enable the evaluation and analysis of credit.

### **2.8.1.3 Wholesale Settlements**

The Settlements function within ROD performs a wide range of operational and administrative activities necessary to process transactions and to support the wholesale energy marketing, e.g., transaction settlement and/or checking, data collection, invoice verification, historical reporting etc.

In addition, independently verify the accuracy of counterparties' transaction valuations prior to invoice payment or invoicing.

Create accounting support calculations such as purchased power expense, non-energy charges, imbalance charges, financial transactions, broker fees etc.

## **2.8.2 Risk Oversight Division Reporting Relationship**

The head of the ROD, the Director of Risk Oversight, reports directly to the Chief Financial Officer and also has a direct line of communication to the General Manager and reports to the General Manager on a regular basis.

## **2.9 Risk Management Responsibility of Other Functional Areas**

The following responsibilities shall be carried out by the listed functional groups supporting City Light to ensure Policy compliance.

### **2.9.1 Accounting**

- Review all approved transaction types to determine financial disclosure requirements and work with the ROD to ensure compliance with applicable accounting standards such as GASB 53;
- Work with the ROD to develop appropriate credit reserves (if required) and to record such reserves quarterly and in accordance with Generally Accepted Accounting Principles;
- Ensure financial accounting policies and procedures with respect to hedging and risk management are clearly defined;
- Review this Policy and supporting operating procedures for Accounting-related issues; and
- Review new transaction type proposals for Accounting-related issues and advise on accounting treatment.

### **2.9.2 Legal - City Attorney's Office (CAO)**

- Facilitate the negotiation, review, and approval of contracts WSPP, long form or other wholesale agreements that may arise with counterparties and brokers as well as contracts related to electronic platforms for trading and data gathering;
- Facilitate in the assessment of impact of regulatory changes or enactments, such as Dodd-Frank Act or others as they occur relating to wholesale trading activities. Including the engagement of external legal expertise in the area.
- Assess enforceability of fully executed contracts pursuant to applicable laws and regulations;
- Review transaction confirmations language for compliance as requested.

### **2.9.3 ITSD Power Systems Automation Unit (PSA)**

The PSA is led by the Manager of Power Systems Automation and reports directly to the Chief Information Officer. PSA is responsible for supporting the Power Management Division and Risk Oversight Divisions, which includes:

- Provide system security support with the approval of Risk Oversight Division;
- Comply with the approval and change management process as describe in the procedures for any official system or report changes related to marketing transactions;
- Collaborate with the Risk Oversight Division staff to develop and maintain business process mapping that relates to the marketing and risk operation to IT system operation, interfaces and reporting;
- Architect, implement and maintain IT systems that support marketing transactions, interfaces and reporting with internal systems (e.g. EMS, Accounting, ECM, Data Warehousing, etc.) and external systems (e.g. ICE, FERC, WECC, OATI, market pricing sources, etc.)
- Monitor IT system performance with 24x7 call-out support for internal systems related to marketing operations;
- Deploy system software version upgrades and patching to maintain compatible and reliable system operation. This includes (QA) verification and user acceptance testing with current business operating procedures;
- Assist in periodic systems evaluations and in recommendations for inclusion of modules and necessary systems upgrades to meet business and compliance requirements.

### **2.10 Risk Policy Approvals & Amendments**

This Risk Policy will be made effective by the City Light Chief Financial Officer upon the adoption of the Policy by the City Council. Each year prior to July 1, the ROC will review the elements of this policy and present any recommended changes to the General Manager or provide notification that no changes are necessary. If changes have been recommended, the utility will present the proposed changes to the Council by September 1. In reviewing the policy and recommending modifications, the ROC will consider any material changes

in the markets in which City Light transacts, in City Light's business activities and in the financial circumstances of the utility.

## **2.11 Compliance with Laws & Regulations**

Employees shall comply with all applicable laws and regulations including, but not limited to, Anti-Market Manipulation rules established by Congress and implemented by state and/or federal agencies. Employees should be familiar with the relevant laws and regulations and seek clarification from the City Attorney's Office as required. As requested, the City Attorney's Office shall examine relevant regulatory guidelines that govern the purchase and sale of all authorized products, and provide training to employees as needed. However, it shall remain City Light's responsibility to ensure that its employees are adequately trained.

## **2.12 Misrepresentation & Conflict of Interest**

City Light personnel shall comply with the Seattle Ethics Code, Seattle Municipal Code 4.16. Consistent with this code, City Light personnel shall not withhold or conceal information regarding transactions or risk management activities from any person responsible for the accurate recording and reporting of such activities, nor shall they misrepresent any such information.

Employees shall always put the interests of City Light ahead of any interest they may have in entities with which they transact. Further, employees authorized to place or execute wholesale energy transactions on behalf of City Light may not engage in such activities for their personal accounts. Employees will disclose to their supervisor any interest in an entity that could reasonably be construed as preventing them from acting solely in the interests of City Light. Failure to do so is a violation of this Risk Policy.

## **2.13 Policy Violations & Exceptions**

All persons engaged in the implementation, management, or administration of this Policy and associated procedures, as detailed in the Procedures Manual, will sign the Compliance Statement (see [Appendix D](#)), stating that they have read, understood, and agree to comply with them.

Any person found in direct violation of this Risk Policy and the Procedure Manual may be subject to disciplinary action, including possible termination, at the discretion of the ROC. Inadvertent exceedances of risk limits (deemed an "exception"), upon notice to the ROC, shall be corrected in a timely manner.

Employees who become aware of potential non-compliance with this Policy are obligated to immediately report such events to City Light's Risk Oversight Director, Chief Financial Officer and Power Supply and Environmental Affairs Officer.

## **3 RISK MANAGEMENT APPROACH**

### **3.1 Risk Management Philosophy**

City Light's current power supply portfolio consists primarily of hydro-based generation (approximately 90%) and historically, City Light's combined generation output has exceeded its retail customer demand on an expected annual basis. Hydro uncertainty, coupled with wholesale energy market price volatility, leads to significant variability in City Light's net wholesale revenue from the sale of that surplus energy.

To manage this revenue risk and thereby protect the interests of the ratepayers, City Light hedges its exposure by buying and/or selling physical energy and associated products in the wholesale energy market up to 24 months from the prompt month prior to, and all the way up to, and including the hour of delivery. While City Light's principal objective is to ensure that it meets its retail customer demand obligation, it tries to do so in a way that generates additional value from its generation portfolio, with due consideration of risk.

By participating in the wholesale energy markets, City Light is exposed to, and needs to manage, a variety of risks including:

- **Market Risk** – market risk is the uncertainty of City Light's financial performance due to uncertainty in commodity markets (i.e., "market price risk" and "market liquidity risk") and uncertain price relationships (i.e., "correlations", "basis risk" and "curve risk"). Market risk is inherent in City Light's operations due to the financial impact of the variability of energy and related commodity market prices and the price relationships. Variability in these parameters results in uncertainty, both positive and negative, in earnings, cash flow, and the value of assets and liabilities. Accordingly, it is important that they be monitored and limited to levels consistent with the risk tolerance levels determined by the ROC;
- **Credit/Performance Risk** – the risk of financial loss due to default or failure by counterparties to perform on contracts;
- **Volumetric Risk** – the risk of financial loss due to unpredictable variations in the output of the generation fleet or in retail demand;
- **Modeling Risk** – the risk of financial loss due to a potentially inaccurate or incomplete characterization of a transaction or of portfolio elements due to fundamental deficiencies in models and/or information systems to match reality sufficiently well;

- Operations Risk – the risk of financial loss due to physical assets failing to perform;
- Operational (Commercial) Risk – the risk of financial loss due to flawed or inadequate business processes due to imperfections in the quality, scope, or content of operating procedures or process execution by human or technical resources within City Lights; and
- Legal/Regulatory Risk - the risk that a counterparty does not have the legal or regulatory authority to engage in a transaction or that the transaction is prohibited by law. It also includes changes to regulatory policies, vague or unsolicited contract language that may transfer and increase risk to City Light.

While all of these are under the jurisdiction of the ROC, only the approaches to market and credit risks are discussed here as they are specifically focused on energy market events.

### **3.1.1 Market Risk Policies**

The following market risk policies shall govern City Light's participation in wholesale energy markets. Specific limits, methodologies, reports, operational procedures, and approval processes are detailed in the Procedures Manual.

- City Light will meet its native retail customer demand obligation at the highest levels of certainty as determined by models validated by Risk and approved by ROC.
- Subject to the constraints of the system, City Light shall not engage in any transactions that are purely speculative in nature or that cannot be tied directly to managing its underlying purchase power agreements, generating plant, transmission asset positions, or price risk.
- City Light will ensure that it has full knowledge of its position in all transacted products and the resulting exposure, and understands the implications of its hedging activities.
- Only personnel authorized by the General Manager pursuant to a written Delegation of Authority Agreement can transact on behalf of City Light in the wholesale energy market.
- City Light may only transact in physical wholesale energy-market products approved by the ROC.

- City Light may only transact within limits approved and defined in this Risk Policy and the Procedure Manual.
- Metrics for assessing City Light's market risk exposure will be specified, measured, monitored, and reported on a regular basis.
- All wholesale energy transactions will be carried out on recorded phone lines or electronic trading platforms.
- On a daily basis, all wholesale transactions will be captured in the official system of record.
- Models and inputs for valuation and risk measurement shall be subjected to a validation and change control process. The models employed and associated processes shall be described in detail in the Procedures Manual.
- Periodic risk and policy compliance reports will be delivered to the ROC, General Manager, Mayor and the Council's central staff.

### **3.2 Forward Hedging Strategies and Plans**

Successful management of the price and volumetric risks faced by City Light requires analysis, monitoring, and communication. Analysis of published hydrological and weather forecasts and market price data serve as key inputs to several internally developed models and ensure that the appropriate data is converted into useful information.

One of the statistical models used for this purpose is the Finance Division's Wholesale Revenue model (WRM), which produces a statistical distribution of revenues from the sale of surplus power and cash from operations. The average of the 5% worst outcomes in this distribution is called the "5% Tail Risk" metric. This is a conservative risk metric and the use of it is intended to protect the utility and its ratepayers against the worst outcomes. The objective of City Light's hedging practices is to attempt to minimize risk, that is, to maximize the 5% Tail Risk metric.

An additional objective of City Light's hedging practices is to ensure a high certainty of meeting load while meeting NERC/WECC reliability standards and environmental requirements.

In order to avoid frequent adjustments in the utility's forward position City Light may, within the limits established in Section 3.3.2, choose not to transact in the forward market in order to move it closer to the minimum risk position, as defined by the Cash from Operations Model.

Furthermore, City Light may, at times, transact in forward positions that move it further from the optimal forward position projected by the Cash from Operations Model. Such actions are allowed only to address operational concerns or risks not captured by the Cash from Operations Model. This practice is actively monitored by the Risk Oversight Division's report on the Power Management Division's transaction staff's compliance with the risk tolerance band established in Section 3.3.2. The ROC will highlight in its minutes any transaction it approves that moves the utility further away from the minimum risk position, and will provide a clear rationale for approving the action in the minutes.

As the water year progresses, increased certainty in our level of resources is attained. As greater certainty is achieved, the risk tolerance level for the 5% Tail Risk metric is reassessed and approved by the ROC through the planning process described below. Changes to the 5% Tail Risk metric value are closely monitored to ensure City Light remains within its accepted level of risk tolerance.

The 5% Tail Risk metric calculation process is a cross functional effort. The Resource Planning, Forecasting and Analysis Division provides the hydro forecast input and load/resource balance for the Cash From Operations Model, the Finance Division owns and runs the model, and the Risk Oversight Division determines the appropriate risk metrics to consider and leads the communication of the specific metric's results with City Light's stakeholders. In addition, the Risk Working Group led by the Director of Risk Oversight and comprised of Power Management Division, Finance, and Risk Oversight Division personnel work on the continued refinement of the model, while keeping a close eye on changes in the risk metric value.

Consistent with market risk policies defined herein and the risk limits defined below, the Power Management Division's transaction staff, in concert with the ROC, will develop annual hedging strategies with underlying hedging plans as a means to manage the volumetric and price risks faced by the utility. This will be achieved by hedging the resource portfolio within the constraints of the 5% Tail Risk metric and risk tolerance band.

The following two sections describe the requirements for formal written communication of City Light's hedging strategies and detailed hedging plans.

### **3.2.1 Strategies**

Prior to July 1, of each year, the Director of Power Management shall submit an initial written hedging strategy ("Hedging Strategy") for the upcoming next two full calendar years to the ROC for review and approval. The Hedging Strategy will include:

- A timeline for presenting specific hedging plans for managing the expected surplus resource position throughout the next two years;

- A write-up of the likely usage of structured transactions (approved transaction types other than forward purchases and sales) including probable time periods and volumes;
- A recommendation for each years' initial 5% Tail Risk metric limit; and
- Price targets and triggers, and transaction types anticipated to be used in the hedging plans.

The Hedging Strategy will be finalized by the end of July of the preceding year and will remain in effect until such time as it is modified and approved by the ROC.

### **3.2.2 Plans**

Due to the amount of uncertainty concerning the hydrological conditions over such a time period, the Hedging Strategy will require at least four or more hedging plans to be developed and approved during each year. Hedging plans are designed to contain specified effective dates and cover a particular transacting period of time in the future. For expected surplus energy revenue hedging and volumetric risk hedging plans, each hedging plan will:

- Refer to the specific hedging strategy document it is applicable to;
- Be labeled or numbered consistent to the applicable Hedging Strategy;
- Have a specified start and end date;
- Cover a clearly specified forward time period;
- Document a volumetric limit for purchases and sales;
- Document transaction types to be used to carry out the hedging plan; and
- List price triggers that will enable hedging activity within the hedging plan's limits to be completed earlier than that which is contained in the Power Management Division's transaction staff's purchase and sales orders to their Power Marketing staff.

The Director of Power Management may, at any time, request that the ROC consider changes to the current Hedging Strategy or hedging plan. Any approved changes to the Hedging Strategy or hedging plan shall be recorded in the ROC meeting minutes and an updated written Hedging Strategy or hedging plan document will be prepared as soon as practical incorporating such changes. On occasion, it will become apparent to Power

Management that additional transactions to reshape expected monthly forward positions are necessary given changes in generation forecasts, market conditions, and load forecasts. The Director may authorize the execution of such transactions to rebalance the forward position as long as the net energy position resulting from these transactions is close to zero and does not drive positions for any forward quarter below zero at 50% confidence level. These transactions will be discussed in ROC meetings ahead of time if conditions allow, or reported after the fact and documented in the ROC meeting minutes. The effect on the tail risk metric, specifically a potential transaction(s) impact on risk tolerance band compliance will be evaluated prior to transaction execution. The benefit of evaluating the rebalancing-type transactions with risk tolerance band compliance is to provide management with quantitative assurance that the benefit (reduction in volumetric risk) is not adding an undesirable level of market risk to the portfolio.

### **3.3 Risk Limits**

The Power Management Division's transaction staff will manage City Light's exposure consistently with the risk limits as defined below. In the event of a potential conflict between a specific hedging plan and these risk limits, the risk limits will prevail and the hedging plan will be modified to bring it into compliance with these risk limits. Under normal operating conditions, if such limits are exceeded, the Power Management Division's transaction staff will take immediate corrective action. Corrective action will start with written notification to the ROC of any limits that are exceeded, the reasons and conditions that caused such exceedance, and the actions being undertaken to return the utility to within approved risk limits. The Chair of the ROC will then notify the General Manager in writing of the risk limit exception and the cause of the exception. The Power Management Division's transaction staff's corrective action may include purchasing power to eliminate forecasted deficits in any month or calendar quarter, or re-balancing City Light's forward portfolio position through a combination of purchases, exchanges, or other products available from the market. There may be occasions when it will be necessary to change the risk limits listed below. The process for changing these risk limits are documented in Section 3.3.3 Risk Limit Changes.

#### **3.3.1 Volumetric limits**

##### ***3.3.1.1 Prompt and Within the Month***

The Power Management Division's transaction staff will maintain City Light's power portfolio position for any prompt month or any Balance of the Month period so that such position shall not exceed a 50 average megawatt deficit during such period. Such limit will be calculated as the net position of City Light's combined physical position adjusted for any call options (daily or monthly) that City Light has purchased for such

month. If this limit is exceeded, the Division will take immediate action to reduce the deficit to under 50 average megawatts.

#### ***3.3.1.2 Forward Month's Resource Requirement***

The Power Management Division's transaction staff will immediately suspend any further forward sales for any future calendar quarter, within the next full 24 months, if the forecasted net combined system energy projected surplus for that quarter is less than zero when calculated on a 75% probability of occurrence. Further, the PMD Director will take immediate corrective action to purchase for a specific future calendar quarter if the net combined system energy position for that specific future calendar quarter, which includes the next full 24 months, is less than zero when calculated on a 50% probability of occurrence. This corrective action shall reduce said deficit to zero at the 50% level of confidence for that specific future calendar quarter. Such limit will be calculated as the net position of City Light's combined physical position adjusted for any physical call options (daily or monthly) that City Light has purchased for such month

#### ***3.3.1.3 Forward Sales Limit***

The Power Management Division's transaction staff will not sell forward a quantity of more than 1,750,000 net megawatt hours over a rolling four full calendar quarter year period. Such limit will be calculated as the net position of City Light's combined physical position adjusted for any physical call options (daily or monthly) that City Light has purchased for such period.

#### ***3.3.1.4 Physical Options Limits***

As the utility introduces physical "put" and "call" options into its portfolio it will do so in a conservative manner. This will allow for the refinement of business practices and internal controls that these transactions will impact. The Power Management Division's transaction staff will limit its option volumetric position so that it will not transact more than 300 average megawatts in physical put and call options (including daily and monthly options) nor will it spend more than \$2 million for option premiums for any calendar year.

### **3.3.2 Risk Metric Tolerance Limits**

For the current calendar year, the Power Management Division's transaction staff will conduct its hedging activity to maintain the Utility's position within an \$8 million Risk Tolerance Band (RTB) around the calculated 5% Tail Risk metric. For the prompt year (the year immediately following the current calendar year), the Utility's position will remain within a \$10 million RTB around the 5% Tail Risk metric.

The prompt year's RTB will change to current year's RTB with the first calculation of the 5% Tail Risk metric in the month of November. This coincides with the start of

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City Light's Finance Division running the prompt year's Cash from Operations model on a bi-weekly rather than a monthly basis.

Under normal operating conditions, in the event the approved 5% Tail Risk metric limit is exceeded or would become exceeded if the remainder of the active hedging plan was executed, planned hedging activity will stop until a revised hedging plan is approved by the ROC.

### **3.3.3 Risk Limit Changes**

The risk metric and volumetric limits described above may be exceeded from time to time for reasons beyond City Light's control including, but not limited to unexpected or extreme market events (weather, system constraints, prices), resource under performance, and other system conditions (prolonged plant outage, transmission line availability). To ensure that the limits contained in this Policy can be changed in a timely manner, the following protocol will apply:

1. Should the ROC desire to have an existing limit changed, a request to revise a limit along with a corresponding justification for the requested change shall be communicated to the General Manager in writing and logged in the meeting minutes of the ROC;
2. The General Manager will approve or disapprove the requested change in writing within 2 business days of receiving such request;
3. If approved, the chair of the ROC will promptly transmit the request, with all necessary supporting information, to the chair of the CEC;
4. The chair of the CEC, after consulting with the other members of the CEC, will notify the chair of the ROC and the General Manager in writing within two business days of the CEC's decision. An email through the City's email system will suffice as written notification. If the chair of the CEC does not respond within this time period, the requested change to the limit will be deemed to have been approved by the CEC; and finally
5. The period from the exceedance of the risk limits to 2 business days following the notification of the chair of the ROC by the CEC of its decision, the PMD will not be considered in exceedance of the risk limits.

Should the General Manager disapprove the requested limit change per #1 above, the Chair of the ROC will notify the Power Management Division's transaction staff to transact as needed in order to bring City Light's portfolio of forward positions back into approved risk limits.

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Should the General Manager be unavailable to respond in the time frame required by this Policy (#2 above), the chair of the ROC will transmit the request directly to the chair of the CEC.

On an annual basis, timed to coincide with the exit conference of the annual external assessment of policy compliance (refer to Section [3.9 External Assessment](#)), the limits contained in this policy as modified during the course of the year per this Section will be reviewed and reaffirmed by the City Council's Energy Committee.

### **3.4 Delivery Points**

City Light may transact in the Western Electricity Coordinating Council markets at the following points of delivery:

- Mid Columbia (Mid-C)
- Points of Interconnection with the Bonneville Power Administration (BPA), Avista Utilities, Idaho Power, B.C-U.S. Border, PacifiCorp, Alberta Power Pool, and Puget Sound Energy
- California - Oregon Border (COB)
- Nevada - Oregon Border (NOB)
- Palo Verde (PV)

### **3.5 Product Types**

City Light may transact for the following authorized products within the Power Management following the procedures for each transaction type outlined in the Procedures Manual. The Power Management Division will ensure proper documentation on contract management and analysis, along with specified settlements and billing instructions (if applicable). There are seven major approved product types:

1. Electrical Energy
2. Transmission
3. Capacity
4. Physical Energy Exchange
5. Physical Options
6. Ancillary Services

## 7. Renewal Energy Credits (RECs) & Other Renewable Resources

In each product type, there are variations of the general terms that will constitute a subtype of the product.

1. **Electrical Energy:** The sale or purchase of wholesale electric energy with the following general attributes: a fixed commodity quantity; a defined commodity price; and, a specific delivery point within the allowed geographic boundaries as specified under Section 3.4 Delivery Points.
  - a. **Loss Provider:** The service of providing energy losses for a counterparty in return for a fee plus payment for the energy required to meet the obligation.
2. **Transmission:** The sale or purchase of transmission entitlement. Transmission transactions have a fixed capacity, a fixed price per unit of capacity, and a fixed path.
3. **Capacity:** The sale or purchase of generation capacity that is committed for specified date and hours. A capacity fee is charged for committing the resources. The energy price associated with the capacity transaction, if called, is either fixed or indexed. The point of delivery is fixed;
  - a. **Spinning Reserves:** Capacity transactions where the buyer may call for delivery of the commodity with less than 5 minutes' notice through an automated generation control or other electronic signal;
  - b. **Operating Reserves:** Capacity transactions where the buyer may call for delivery of the commodity with a minimum of 5 minutes' notice;
4. **Physical Energy Exchange:** The purchase and sale of energy with a single or multiple counterparties at two different points in time or locations. The intent of the transaction is to either move an energy position from point A to point B or to lock in the spread between the two points where City Light has access to and is indifferent as to which location the position is located.
  - a. **Physical Basis:** The simultaneous purchase and sale of energy with a single counterparty, fixed quantity but at different points of delivery. The intent of the transaction is to either move an energy position from point A to point B to lock in the spread between the two points where City Light has access to and is indifferent as to which location the position is located. At the time of transaction entry, the intent of the transaction will be clearly documented on the Pre-deal Risk Assessment Form (if applicable).

- b. Locational Exchange:** The purchase and sale of energy with a single or different counterparty, fixed quantity but at different points of delivery. The intent of the transaction is to either move an energy position from point A to point B to lock in the spread between the two points. At the time of transaction entry, the intent of the transaction will be clearly documented on the Pre-deal Risk Assessment Form (if applicable). Both legs of the exchange must to be transacted by close of the daily trading session.
  - c. Daily Physical Energy Exchange:** A transaction where physical energy is exchanged with a single counter party between the day ahead market and the real time market at either the same or multiple locations. These transactions will be scheduled according to the WECC Preschedule Calendar
  - d. Lending:** A transaction in which the purchaser directs the seller to deliver energy to specific parties or locations on a preschedule basis according to WECC Preschedule Calendar. The purchaser then delivers a like amount of energy in real-time to the seller on the pre-scheduled flow day(s).
  - e. Parking:** A transaction in which the purchaser delivers energy to the seller on a pre-schedule basis according to the latest WECC Preschedule Calendar. The seller then delivers a like amount of energy in real-time to the purchaser on the pre-scheduled flow day(s).
- 5. Physical Options:** Contracts that provide for forward physical transactions (contracted under the WSPP enabling agreement), that give the buyer of the contract the option to either buy or sell a fixed quantity of energy at a fixed price and at a predetermined location The following are the types of options transactions that City Light may purchase. Volumetric limits for options are listed at Section [3.3.1.4](#).
- a. Physical Call Option:** Purchase of the right but not the obligation to “call” on (buy) a fixed quantity of energy at a fixed delivery point, for a fixed price. This transaction type serves as a form of energy supply insurance. Calls can be useful to City Light for obtaining additional resources, at a known price, that may be needed in times of anticipated supply deficit and in forward markets that City Light has previously sold forward. City Light will not sell call options.
  - b. Physical Put Option:** Purchase of the right, but not the obligation to “put” (sell) a fixed quantity of energy at a fixed delivery point for a

fixed price. This transaction type serves as an additional surplus resource sales tool that will be used to lock in a floor price (guaranteed bottom). This is a useful tool to protect from the market price dropping below a stated price for a specified quantity of energy. City Light will not sell put options.

**6. Ancillary Services:** The purchase or sale of scheduling services.

- a. Scheduling, System Control, and Dispatch Service:** A transaction where the seller provides the service required to schedule the movement of power through, out of, within, or into a Balancing Authority Area, usually including electronic tagging service. There may be a need for additional communication gear or other hardware. If purchased through an Open Access Transmission Tariff (OATT), this service can be provided only by the operator of the Balancing Authority in which the transmission facilities used for transmission service are located.
- b. Reactive Supply and Voltage Control Service:** A transaction where the seller supplies reactive power support based on the amounts necessary to maintain transmission voltages within limits that are generally accepted in the region. All transmission providers must offer this service, but others may offer it as well.
- c. Energy Imbalance Service:** A transaction where the seller provides the difference in energy between the scheduled and the actual delivery of energy to a load located within a Balancing Authority over a single hour. All transmission providers must offer this service, but others may offer it as well. An example is providing third-party supply of Energy Imbalance Service per BPA Transmission's Energy Imbalance Service Business Practice, Version 3.
- d. Dynamic Scheduling Service:** The sale or purchase of dynamic schedules which are managed electronically via a real time data exchange. Dynamic schedules include a fixed capacity charge an associated energy price which can be fixed or indexed and a fixed point of delivery.
- e. Intra-Hour Balancing Service:** The sale or purchase of within-hour incremental or decremental service where a fixed amount of energy can be received or delivered in the service provider's Balancing Authority from another Balancing Authority. The capacity quantity, number of

times within any hour, number of hours within the day, and total number of hours during the term of the contract may be specified.

**7. RECS, Offsets & Other Renewable Resources:** The purchase or sale of renewable energy certificate (REC) separately from or bundled with Energy. The transaction must comply with the WSPP's Schedule R definition and documentation.

**a. Offsets:** Greenhouse gas GHG offsets are certificates or memorandums that document the exchange of money for the reduction, avoidance, or sequestration of GHG emissions from a specific project.

### 3.6 Credit Risk Management Philosophy

To protect its financial integrity, City Light will actively manage its credit risk by making informed decisions regarding which counterparties to transact with and how much business it will conduct with them. Credit risk is defined as the risk of counterparty nonperformance, or failure to deliver its obligation (whether that is an energy product or payment of amounts owed). Further, counterparty credit exposure at any given time is defined as the sum of all payments due to City Light (billed or delivered and unbilled) plus the replacement cost of the contracts if positive or netted when applicable. Credit risk is especially important to City Light due to the volume City Light transacts in the wholesale energy markets (as a net seller in most years), and particularly the seasonal peak, during spring run-off season that requires increased credit risk tolerances, to avoid the opportunity cost from spilling water and thereby wasting the resource. Credit Risk Management at City Light entails performing technical and administrative duties in connection with credit analysis and approving new and existing counterparties, and calculating, aggregating, monitoring and reporting all credit exposures. For the purposes of comprehensive risk management and to facilitate effective risk control, Credit Risk Management shall be performed by the Risk Oversight Division, who will be and is required to maintain accurate records and produce timely reports to enable the evaluation and analysis of credit.

City Light manages its credit risk by:

- Establishing an annual maximum risk tolerance threshold for counterparty credit limits, including allocating a credit risk tolerance for credit limit sharing among approved higher risk counterparties;
- Periodically assessing counterparty creditworthiness and credit limits;
- Authorizing transactions with approved counterparties up to their assigned credit limit;

- Obtaining acceptable credit enhancements when necessary, that can involve obtaining parent guaranties, letters of credit, prepayments, etc.;
- Monitoring counterparty credit exposures (including but not limited to short-term, long-term, RECs etc.) and reporting to executive management and City Officials (Mayor, City Council and other relevant parties);
- Requiring Power Marketers transacting in the forward markets (full prompt month up to 24 months forward) to have Risk Oversight approval prior to entering into term deals;
- Coordinating with the City Attorney's Office in its review of acceptable parent guaranties, letters of credit, confirmations, etc.; and
- Maintaining credit files for all counterparties, including parent guaranties, letters of credit and prepayment information.

### **3.6.1 Credit Risk Policies**

City Light sells significant quantities of power in the wholesale market. Industry practice dictates counterparty payment no sooner than 20 days after the end of the delivery month, requiring that City Light extend credit to its counterparties. Further, as noted earlier, City Light seeks to manage its volumetric and price risk by transacting in the forward market, resulting in its extending credit to counterparties for periods up to 24 months.

The following policies shall govern City Light's credit exposure management efforts. Specific limits, methodologies, reports, operational procedures, and approval processes are detailed in the Procedures Manual.

The Chief Financial Officer sets the following by:

- Establishing and approving a comprehensive Maximum Risk Tolerance level for both secured and unsecured counterparty credit limits;
- Establishing credit limit framework table that guides the Director of Risk Oversight during the year to manage counterparty credit;
- Recommending credit methodologies used for counterparty credit limits or any changes necessary to existing methodologies for ROC approval

- Approving initial counterparty credit limits to ensure that at the beginning of each year credit limits are aligned with established portfolio risk tolerance;
- Establishing and approving a Risk Tolerance for The Higher Risk Credit Portfolio whereby all higher risk counterparties, under the Portfolio share the credit limit; and
- Authorizing credit approval levels for the Director of Risk Oversight and Sr. Credit Analyst.

The above decisions and any changes to them during the year will be documented in the ROC meeting minutes. The Director of Risk Oversight will utilize these decisions and any additional parameters documented in the Procedures Manual to develop and adjust counterparty specific credit limits to present to the CFO for approval at the ROC and to manage credit limits during the year.

Credit limits will be based on a number of factors including the counterparty's probability of default, and credit score that focuses on liquidity, profitability, cash flow and other relevant factors.

### **3.6.2 Special Conditions**

Except under the following circumstances, City Light will not extend unsecured credit to counterparties having a net worth of less than \$2.5 million:

- 'must sell' (e.g., spill conditions); or
- Negative priced energy transactions that result in City Light receiving payment for taking the counterparty's energy (a seasonal event driven by a combination of high wind and high water flow).
- REC purchases for periods greater than 24 months where a transaction-specific ordinance is approved by the Mayor and City Council.

During spill events the Power Supply & Environmental Affairs Officer and/or the Director of Power Management will seek approval from the CFO and/or the Director of Risk Oversight to extend credit to parties that currently do not have credit or do not have sufficient credit for a proposed transaction. In the case where neither of these two members of the senior leadership team can be reached for authorization, the Power Supply & Environmental Affairs Officer and/or the Director of Power Management may authorize the real time marketer to sell to a specific counterparty that has no available credit once per shift to minimize lost opportunities, and in no event, more than three such sales (different counterparties) per real-time marketer

shift. Before the end of the shift, the real time marketer will notify the Director of Power Management and the Power Supply & Environmental Affairs Officer of each transaction including dollar amount. Each of these transactions will be discussed and documented at the next regularly scheduled Risk Oversight Council meeting. These are expected to be low frequency events. By anticipating and documenting that such events may happen, opportunities are not lost. The post transaction discussion will cover the underlying drivers of the event's occurrence, effectiveness, the results of the decisions that were made and whether any policy or procedure changes are warranted.

### **3.6.3 Credit Enhancements**

In establishing credit for counterparties, City Light may consider credit enhancements that meet the following criteria:

- Prepayment for the product or service. Prepayment is due within 5 business days of signing the confirm or contract; or
- An acceptable irrevocable standby letter of credit for the benefit of City Light from a United States office of a commercial bank or trust company organized under the laws of the United States of America or a political subdivision thereof or a foreign bank with a branch office located in the United States with at least a standard "A", or equivalent, credit rating from two or more major credit rating agencies; or
- An acceptable payment guarantee from a parent or otherwise qualified entity having standard investment grade credit ratings of at least 'BBB' or 'Baa2' from S&P and/ or Moody's, respectively. The Guarantor must meet City Light credit qualification requirements and qualify for the amount of credit support to be provided; or
- Other credit enhancement deemed acceptable by the CFO.

### **3.6.4 Reporting**

City Light will measure and report its counterparty credit exposure in the following ways:

Settlement Exposure: A rolling 60-day notional value. This is equal to the higher of existing Accounts Payable plus current delivered but unbilled plus scheduled to be delivered through the end of the current month (CM) or the CM plus next month notional value.

Mark to Market Exposure (MTM): The change in market value of undelivered obligations.

Current Exposure: The sum of Settlement Exposure plus Mark to Market Exposure.

A credit exposure that exceeds a credit limit due to the MTM component will be considered a passive exception by the Power Marketers; however, this excess credit exposure will be managed by the ROD.

The ROD will provide such reports to the ROC no less than once per month or more frequently if conditions warrant.

### **3.7 Procedures Manual**

The specific operating procedures and parameters for implementing the policies in this document are detailed in the Procedures Manual. Changes to the Procedures Manual will be reviewed and approved by the ROC for consistency with this Risk Policy within 60 days of the Council's approval and the City Light CFO making this Policy effective.

### **3.8 Risk Reporting**

The Risk Oversight Division will produce the following periodic reports:

- A monthly report documenting City Light's compliance with this Policy.
- A weekly report identifying Risk Policy violations or exceptions, if any, and summarizing the status of City Light's existing Hedging Plan, existing positions, forecast of resources, and credit exposures.
- A weekly position report that reflects resources, load expectations and forward positions by month and market locations for a rolling 24 month period.
- A weekly Mark-to-Market valuation report of forward positions, by month and market locations for a rolling 24 month period.

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These reports will be distributed to the ROC, the General Manager, the Mayor and the Council's central staff.

### **3.9 External Assessment**

The Mayor's staff and the Council's central staff will consult with the Director of Risk Oversight regarding the selection of an external party to conduct a review of City Light's adherence to this Risk Policy. This compliance review will be performed and reported annually to the Mayor and Council. In alternate years the scope of this compliance review will be expanded to include an assessment of the adequacy of City Light's wholesale energy risk management controls.



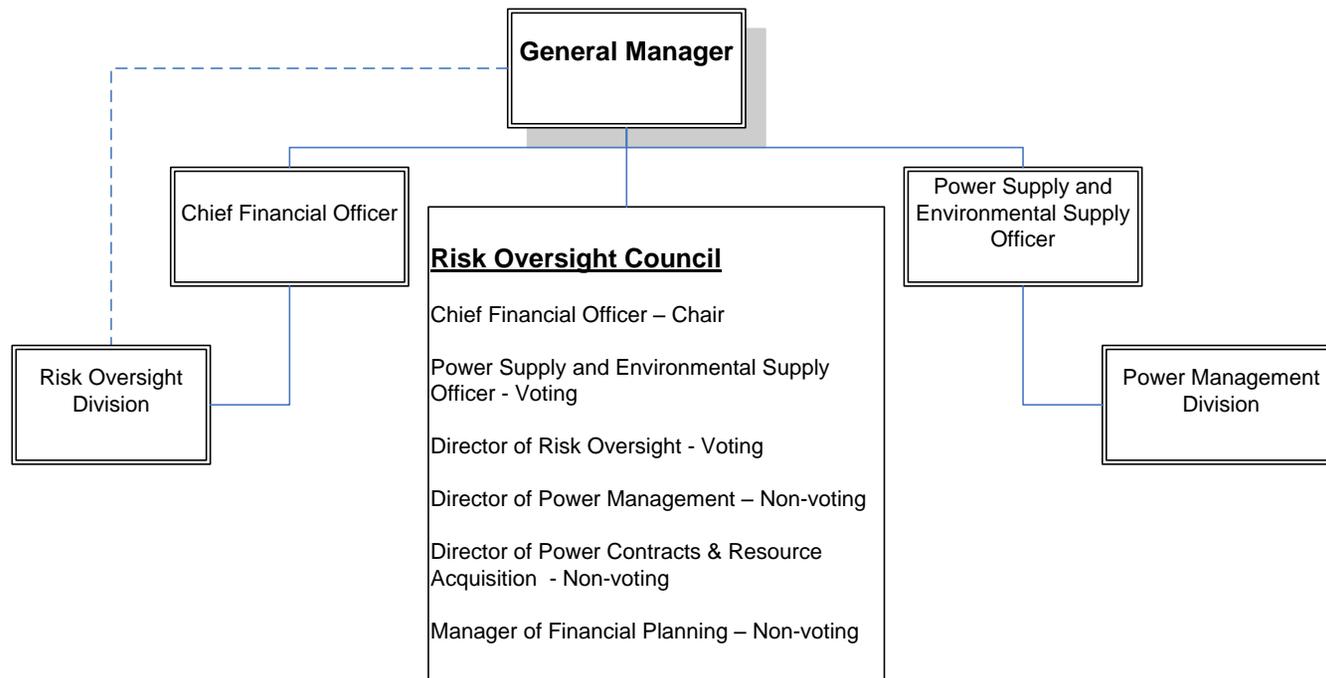
## **APPENDIX A WHOLESALE ENERGY RISK MANAGEMENT PROCEDURES MANUAL**

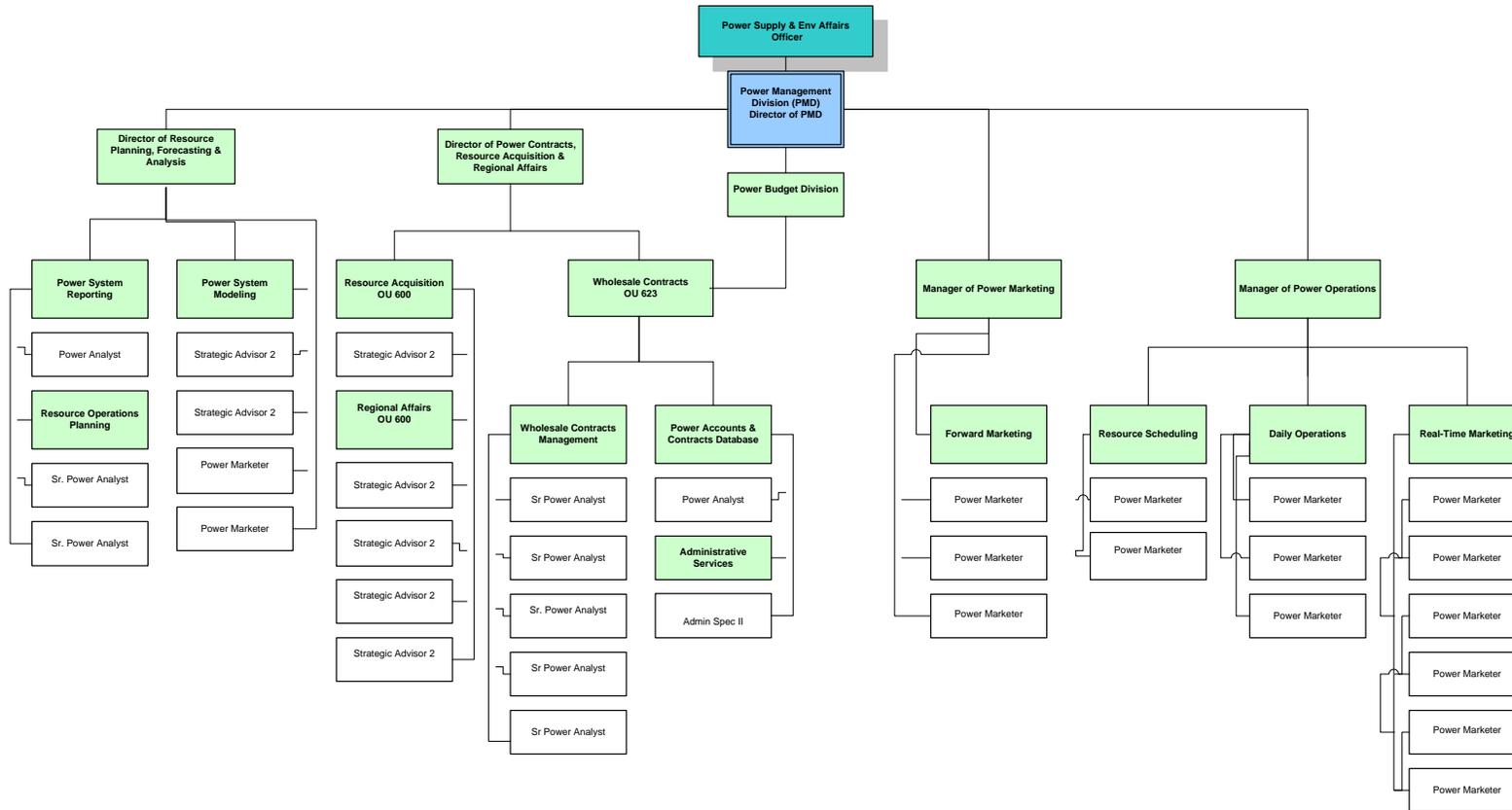
Refer to Wholesale Energy Risk Management Procedures Manual as of March 29,  
2013, VERSION 1.0.

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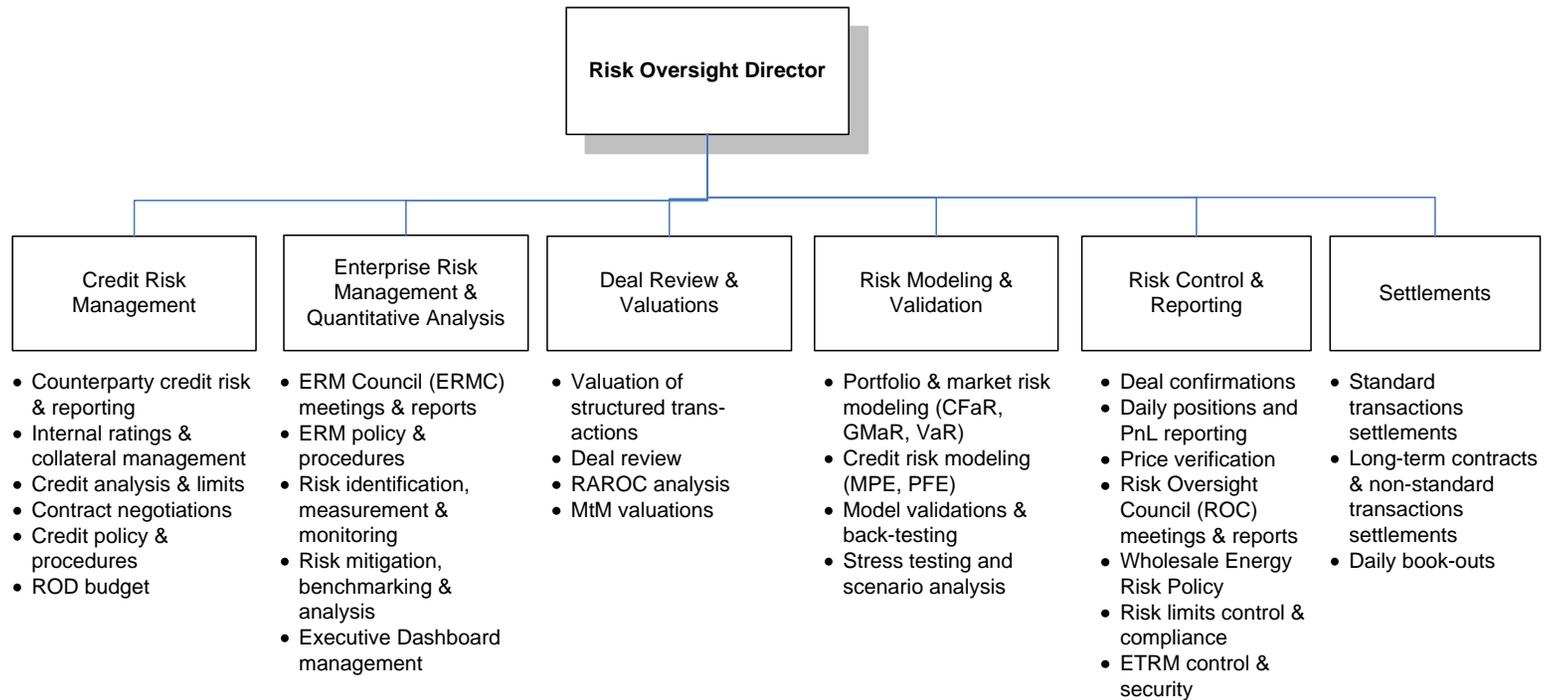
## **APPENDIX B CITY LIGHT'S ENERGY RISK MANAGEMENT ORGANIZATION CHARTS**

# Energy Risk Management Organization

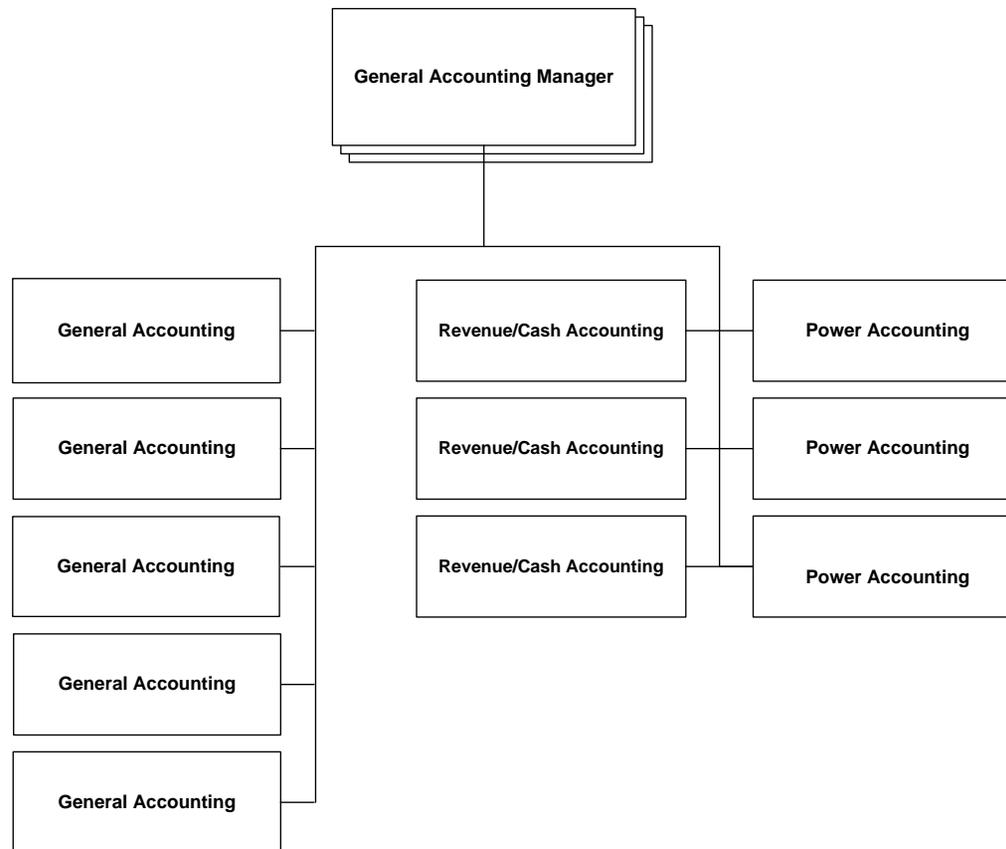




## Risk Oversight Division



## Accounting Division - General Accounting



## APPENDIX C GLOSSARY OF TERMS

5% Tail Risk: The risk metric produced from the Cash From Operations Model. It is the average financial outcome of the worst 5% of all outcomes.

Basis Risk: The uncertainty of an entity's financial performance due to fluctuations and/or uncertainty in price relationships between two products or instruments. Basis risk can be differentiated by type of product, time of delivery, quality or grade of a commodity, delivery point called for in the two instruments, etc.

Calendar Quarter: Three-month blocks of time, often referred to as "Q's." Q1 is comprised of January through March; Q2 contains April through June; Q3 contains July through September; Q4 contains October through December.

Call Option: Contracts that give the holder the right, but not the obligation, to buy a fixed quantity of energy at a fixed delivery point by a certain date and for a certain price. The price in the contract is known as the strike price (can include market index price) and the date is known as the expiration date. American options can be exercised at any time until maturity, and European options can only be exercised on the expiration date. This transaction type serves as a form of energy supply resource insurance.

Cash From Operations Model: The Financial Division's model that estimates net revenue available to fund capital requirements taking into account the variability of cash flows resulting from uncertainty of water conditions, market prices, and system load.

Cash From Operations: The net revenue expected from wholesale energy transactions, retail sales, other expenses, and incomes.

Correlations: A relationship between two variables, such as, two different commodity prices, power generation and electricity prices, weather and load etc.. In most power markets, an important price correlation is the relationship between natural gas and power prices.

Credit Risk: The uncertainty of an entity's financial performance due to the possibility of non-performance in payment or delivery by a counterparty.

Curve Risk: The risk that the relationship between two points on a forward curve (i.e., one month out vs. six months out) is not constant over time. Because the shape of a forward curve changes to reflect the market's expectations of spot and future prices, the relationship between any two points on the curve is not always constant.

Hedge Transactions: Transactions executed to alleviate, on an expected basis, the potential volatility of an organization's cash flow, earnings and/or asset values. Hedging transactions include activities that reduce risk or that convert one type of risk to another deemed more tolerable.

Hedging Plan: Specific plan of action derived from the Hedging Strategy.

Hedging Strategy: High level direction that serves as the framework for developing courses of action (Hedging Plans) that will lead towards achieving a goal.

Market Liquidity Risk: The risk of an adverse cost or return variation stemming from the lack of marketability of a financial instrument. Liquidity risk may arise because a given position is very large relative to typical trading volumes of like commodities and contract tenors, or because market conditions are unsettled. Liquidity risk is usually reflected in a wide bid-ask spread and large price movements in response to any attempt to buy or sell. A firm facing the need to quickly unwind a portfolio of illiquid instruments may find it necessary to sell at prices far below fair value.

Market Price Risk: The risk that arises from the uncertainty of movements in the level or volatility of market prices.

Modeling Risk: The uncertainty of an entity's financial performance due to inaccurate or incomplete characterization of a transaction or portfolio value due to fundamental deficiencies in the model(s) being used to perform such valuations.

Operational Risk: The risk of loss due to flawed or inadequate business processes.

Operational Transaction: Procurement or sale transaction entered into for the purpose of managing resources.

Operations Risk: The risk of loss due to physical assets failing to perform.

Procurement: Energy product purchase transaction in the Balance of Month or shorter time horizon for the purpose of serving City Light's native load.

Prompt Month: Closest calendar month that has not yet begun.

Put Option: Contracts that give the holder the right, but not the obligation, to sell a fixed quantity of energy at a fixed delivery point by a certain date and for a certain price. The price in the contract is known as the strike price (can include market index price) and the date is known as the expiration date. American options can be exercised at any time until maturity, and European options can only be exercised on the expiration date. This transaction type serves as an additional surplus resource sales tool that will be used to lock in a floor price (guaranteed bottom). This is a useful tool to protect from the market price dropping below a stated price for a specified quantity of energy.

Risk Tolerance Band: An acceptable variance, in either direction (positive or negative), from the 5% Tail Risk's calculated optimal position.

Volumetric Risk: The financial uncertainty resulting from the variations in generation output or customer demand.

Appendix C Glossary of Terms

## APPENDIX D COMPLIANCE STATEMENT

### Compliance Statement

The undersigned employee hereby acknowledges receipt and review of City Light's Wholesale Energy Risk Management Policy dated \_\_\_\_\_ and corresponding Wholesale Energy Risk Procedures Manual version \_\_\_\_\_.

The undersigned further acknowledges that this risk policy and corresponding risk procedures manual defines the standards of City Light's energy risk management efforts that the employee is expected to comply with, and that failure to comply with the Policy and procedures may result in, among other things, disciplinary action up to and including termination.

As Utility compliance with the Wholesale Energy Risk Management Policy requires the involvement and support of many City Light staff, employees who become aware of non-compliance with these policies are obligated to report such anomalies to the Risk Oversight Director, CFO, or Power Supply Officer.

Acknowledged by:

\_\_\_\_\_  
Employee Name (Print)

\_\_\_\_\_  
Employee Signature

\_\_\_\_\_  
Date

## APPENDIX E SAMPLE OF RISK REPORTS

*Note: Risk Reports are subject to changes from time to time. However, the content of the reports will always meet the requirements of the Policy for reporting.*



**City Light Risk Oversight Status Report**  
 As Of  
 Wednesday, XXX XX, 20XX

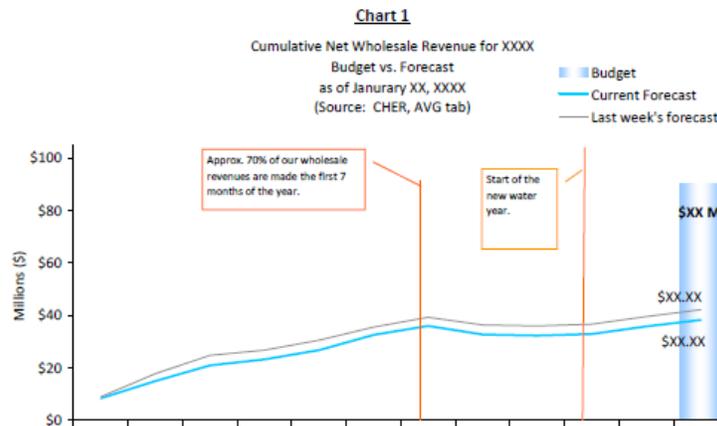
**Summary**

|                      | <u>% of 5 yr Avg</u> | <u>Current 'XX Avg</u> | <u>5 Yr Avg</u> |
|----------------------|----------------------|------------------------|-----------------|
| SCL Hydro Generation | XX%                  | XXX MW                 | X,XXX MW        |
| Peak Market Prices   | XX%                  | \$XX.XX                | \$XX.XX         |

**SCL Hydro Generation:** The total average generation per hour for Seattle City Light's three major hydroelectric resources (Skagit, Boundary, and BPA Slice) for the 20XX calendar year. This average includes actual generation for past months, and forecasted MW for future months. The 5 year average value is comprised of actuals for years 20XX-XX.

**Peak Market Prices:** The average peak market price for the nearest electricity trading hub (Mid-C) for the 20XX calendar year. The 20XX average is comprised of monthly peak forward marks for future months and averaged Dow Jones firm peak index daily prices for past months. The 5 year average is calculated using Dow Jones peak daily prices for years 20XX-XX.

**Wholesale Revenue Variance:** Chart 1 below compares the 20XX annual approved NWR budget of \$XX million with the latest NWR forecast of \$XX.XX. The NWR forecast decreased by \$XX M from the previous forecast of \$XX.XX million as a net result of decrease in resources and January actuals accounting for \$XX M and increase in prices accounting for \$XXM.



Published Date: X/XX/XX

## SAMPLE OF RISK REPORTS CONTINUED...

### Policy Compliance:

| Tail Risk Limit | Prompt Month & Within Month Limit | Forward Month's Resource Requirement Limit | Forward Sales Limit | Physical Options Limit |
|-----------------|-----------------------------------|--|---------------------|------------------------|
| Compliant       | Compliant                         | Compliant                                  | Compliant           | Compliant              |

**Tail Risk:** For the current calendar year, the Power Operations & Marketing Division (POMD) will conduct its hedging activity to maintain the Utility's position within an \$8 million Risk Tolerance Band (RTB) around the calculated 5% Tail Risk metric. For the prompt year (the year immediately following the current calendar year), the Utility's position will remain within a \$10 million RTB around the 5% Tail Risk metric. *(Section 3.3.2 Prompt and Within the Month (WERM))*

**Prompt Month & Within Month Volumetric Limit:** The Power Operations & Marketing Division (POMD) will maintain City Light's power portfolio position for any prompt month or any Balance of the Month period so that such position shall not exceed a 50 average megawatt deficit during such period. Such limit will be calculated as the net position of City Light's combined physical position adjusted for any call options (daily or monthly) that City Light has purchased for such month. If this limit is exceeded, the Division will take immediate action to reduce the deficit to under 50 average megawatts. *(Section 3.3.1.1 Prompt and Within the Month (WERM))*

**Forward Month's Resource Requirement Limit:** The Power Operations & Marketing Division (POMD) will immediately suspend any further forward sales for any future calendar quarter, which includes the next full 24 months, if the forecasted net combined system energy projected surplus for that quarter is less than zero calculated on a 75% probability of occurrence. Further, the POMD will take immediate action to purchase if the forecasted net combined system energy position for a future calendar quarter, which includes the next full 18 months, is less than zero calculated based on a 50% probability of occurrence. The corrective action shall reduce said deficit to zero at the 50% probability of occurrence. *(Section 3.3.1.2 Forward Month's Resource Requirement (WERM))*

**Forward Sales Limit:** The Power Operations & Marketing Division (POMD) will not sell forward a quantity of more than 1,750,000 net megawatt hours over a rolling four full calendar quarter year period. Such limit will be calculated as the net position of City Light's combined physical position adjusted for any call options (daily or monthly) that City Light has purchased for such period. *(Section 3.3.1.3 Forward Month's Resource Requirement (WERM))*

**Physical Options Volumetric Limits:** As the utility introduces physical puts and calls into its portfolio it will do so in a conservative manner. This will allow for the refinement of procedures and controls that these transactions will impact. The Power Operations & Marketing Division will limit its option volumetric position so that it will not transact more than the lesser of 300 average megawatts in physical puts and calls (including daily and monthly options) or spend more than \$2 million for option premiums for any calendar year. *(Section 3.3.1.4 Forward Month's Resource Requirement (WERM))*

## SAMPLE OF RISK REPORTS CONTINUED...

### 5% Tail Risk Metric, 20XX

In October 2007, City Light implemented a risk metric named the "5% Tail Risk". It is calculated as the average of the worst-case scenarios for City Light's cash from operations for the calendar year. Cash from operations is a bottom-line financial metric defined as the cash available to finance capital projects. There are numerous drivers of cash from operations such as retail revenue, investment income, debt service, and O&M expenses; however wholesale energy revenue is typically the primary driver of uncertainty in this metric.

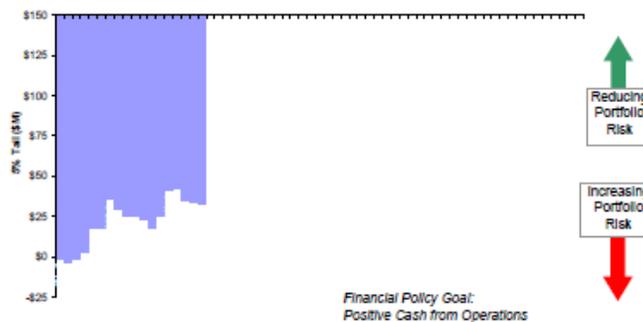
In 2011, the Rate Stabilization Account (RSA) became operational. The RSA is a cash reserve that is used to buffer the Utility from uncertainty in wholesale energy revenue. If the RSA becomes depleted, it is replenished via retail rate surcharges. The RSA significantly mitigates City Light's financial (i.e. cash from operations) risk associated with wholesale energy revenue; however retail customers are exposed in part to the wholesale energy revenue risk via RSA surcharges of up to 4.5%. To appropriately encourage management of risk borne by both City Light and retail customers, the cash from operations amount used in the 5% Tail Risk calculation excludes any effects of the RSA.

The 5% Tail Risk metric is used as a risk control measure in City Light's management of surplus hydro resources. It is used in concert with additional volumetric limits, as well as expert knowledge and analysis of western wholesale energy markets, river flow data, and generation unit outages, to inform power management decisions.

Every week, portfolio models are updated with the most current information and the 5% Tail Risk is recalculated for both the current portfolio (forecast position plus purchases, less sales) and planned portfolio (current portfolio plus remainder of existing hedge plan). The metric provides an indication as to whether the utility's portfolios include too much or too little surplus resources.

Chart 2 (below) illustrates the 5% Tail Risk metric values for the calendar year 20XX. During the course of the year, the 5% Tail Risk metric value has decreased from an initial projection of \$XX.XX million to the current projection of a worse case of \$XX.X million of Cash from Operations.

Chart 2  
**Tail Risk 20XX**  
5% Tail of Cash from Operations

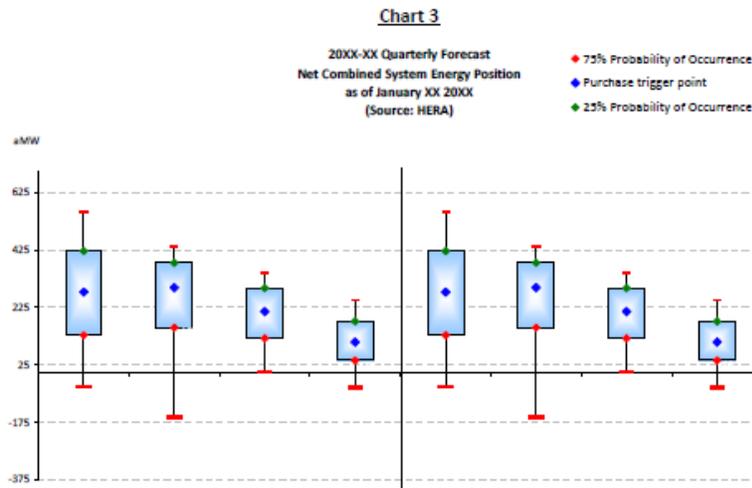


## SAMPLE OF RISK REPORTS CONTINUED...

### Hedging Plan & Position Status

Hedge Plan 20XX, Phase 1 was last proposed and approved by the Risk Oversight Council on December XX, 20XX.

Risk Policy Section 3.3.1b was amended by the Chair of the Energy and Environment Committee on March 8, 2010, changing the trigger point for purchasing power in the forward quarter-year periods to the 50th percentile (previously, it was the 25th percentile, or 75% confidence), when, at that level of expectation, the net position is below zero. On April 6, 2011, City Light's contracting authority was approved from 18 months to 24 months. Chart 3 shows the Net Combined System Energy Position for the next 8 quarter, 2 year periods to cover the full amount of City Light's contracting authority. The blue boxes represent the expected net energy position from the 25th to the 75th percentile. The dark blue diamonds inside the boxes represent the 50th percentile (the new purchase trigger). Under the amended rule, if the blue diamond is below zero, City Light must purchase energy to get back above zero.



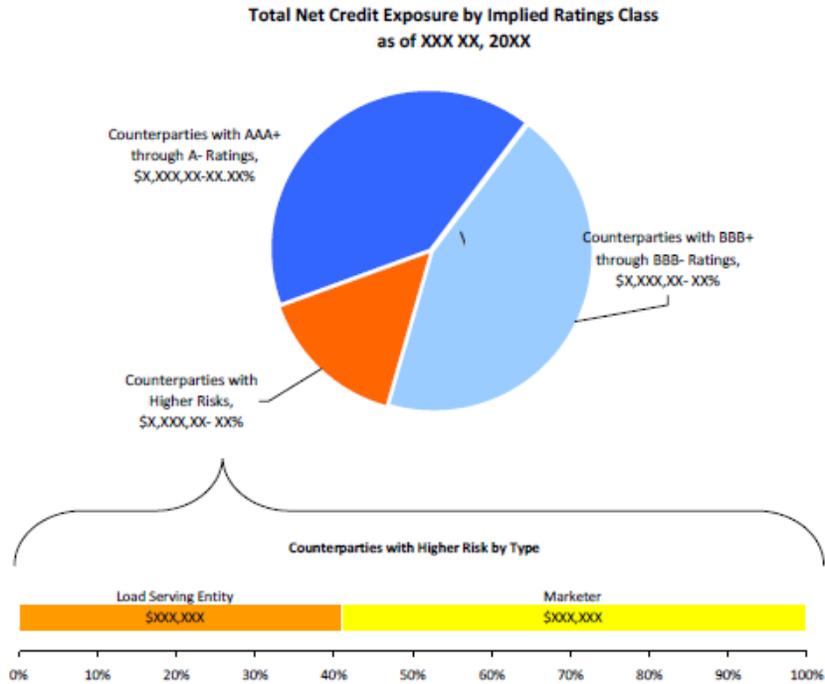
- 4 -

## SAMPLE OF RISK REPORTS CONTINUED...

**Credit**

City Light actively manages its wholesale energy market credit risk by: setting credit limits for each counterparty that are derived from credit scoring models and analysis; securing credit enhancements; monitoring industry news; and by tracking counterparty credit exposures. Beginning in 2009 the Risk Management Division began using an industry standard tool (Moody's KMV) to proactively measure changes in counterparty creditworthiness. This necessitated the use of implied (internal) credit ratings instead of the actual rating agency ratings for Chart 4, below. It is important to note that this represents the assessment of credit risk by the Director of Risk Management. Actual credit ratings by Standard and Poor's and Moody's Investor Services are higher.

Chart 4

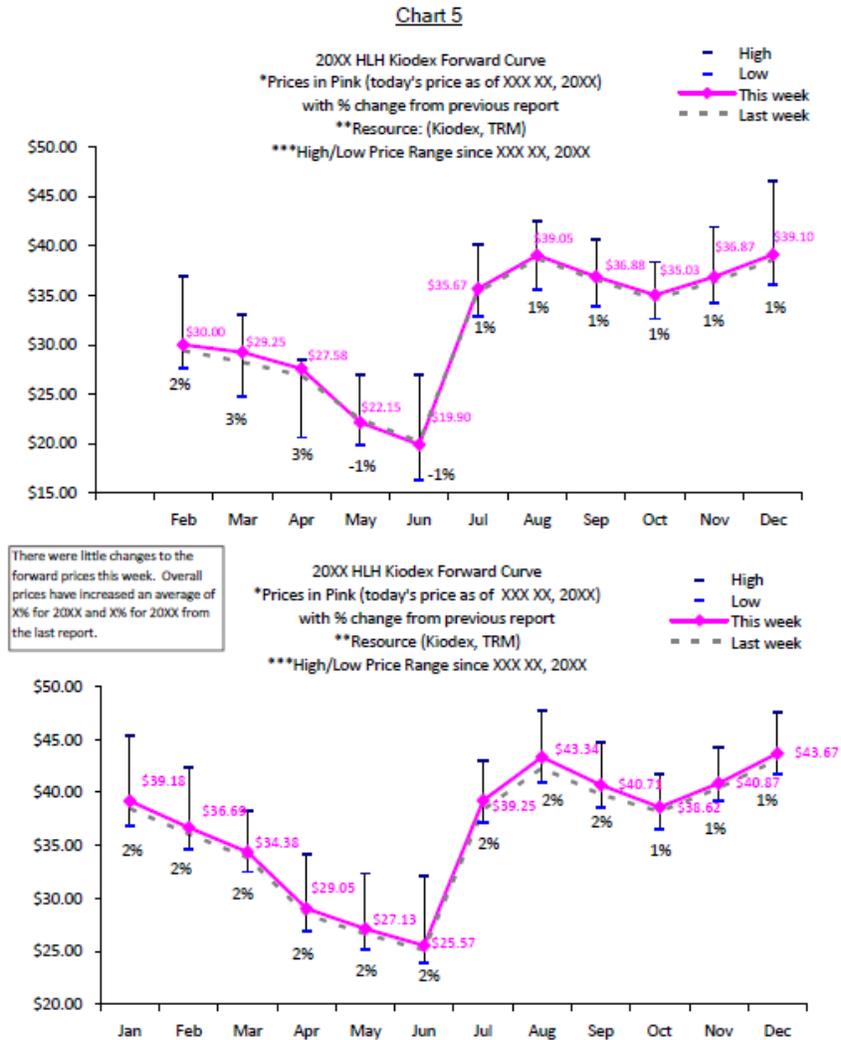


Credit Notes:

## SAMPLE OF RISK REPORTS CONTINUED...

### Price

To ensure that prices are independently developed, City Light's official forward price curve is prepared by KIODEX and used for internal analysis, valuation and modeling tasks. Chart 5 shows the forward price range (Mid-C HLH only) for calendar year 2013 and 2014.



Raman Vishwanathan  
SCL Risk Management Policy RES ATT 1  
March 29, 2013  
Version # 1

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