

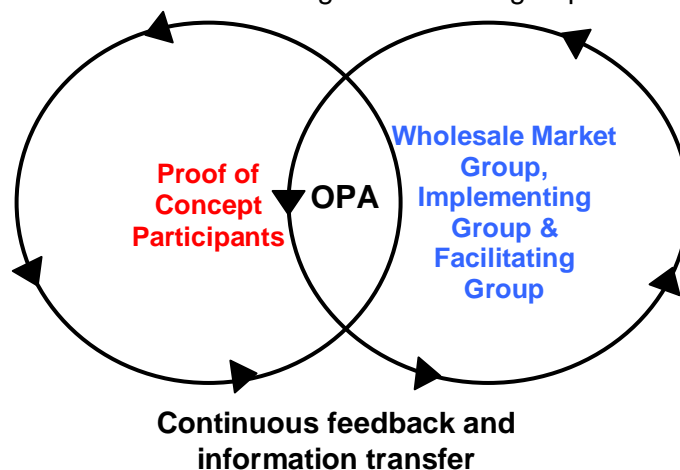
Load Serving Entity (LSE) Concept for Ontario's Electricity Market

LSE Overview

December 2006

INTRODUCTION

The Ontario Power Authority (OPA) is evaluating the potential role of Load Serving Entities (LSEs) within Ontario as a mechanism to provide rate stability and transparency for consumers and a means to facilitate proper management of the load risks in the forward market. In support of an evaluation of the LSE concept, the OPA will be conducting two streams of dialogue, both of which are equally critical to the effective design and implementation of a LSE program in Ontario. The OPA will be the common link between both streams interacting between the groups as illustrated below.



- A detailed analysis of the LSE concept will be achieved via a 'Proof of Concepts' that will meet monthly going forward. Meetings with participants were initiated earlier in 2006. Discussion and analysis focuses on **procurement, settlement and implementation issues** from the broader LSE process, as well as extensive data analysis and interpretation. The LSE PoC will work with **LDCs** including sufficient RPP load to allow a valid comparison to various forward price rates and **LSEs (wholesale market)** that will procure the supply portfolio based on the LDC target area load shape as well as undertaking rate pricing including forecast load shape risk.
- A broader base evaluation of the LSE concept will be achieved through discussions with three strategic groups that will meet approximately four to six times over the next 12 months. Issues to be discussed will focus on structural, financial and process considerations regarding implementation of the LSE concept. These groups are:
 1. **Wholesale Market Group**
 - e.g. energy retailers, marketers and generators
 2. **Implementing Group**
 - e.g. Local Distribution Companies (LDCs)
 3. **Facilitating Group**
 - e.g. Independent Electricity System Operator (IESO) and Ontario Energy Board (OEB)

The OPA intends to have an introductory meeting with these groups in January 2007 to discuss in greater detail the LSE concept and issues outlined in this paper. Feedback from the groups will be incorporated into an iterative LSE Discussion Paper and released prior to the next meeting. These phases of discussion process are targeted to end in **October 2007**. Discussion items that require further evaluation of data assessment will be integrated into the PoC activities.

LSE CONCEPT

The LSE concept is to have independent, financially stable, and energy-savvy entities take responsibility for the default electricity load and represent this load in the forward market providing a means of managing price risks for consumers.

An LSE program provides the opportunity to manage short-term price risks inherent in the hourly spot markets through purchases of longer term fixed price hedges. This allows the IESO to implement reliability, conservation, demand response and energy efficiency products more effectively, without creating price shocks for consumers.

Figure 1 provides a schematic of a potential LSE Settlement Model with a description of the LSE process. **Figure 2** provides an illustrative description of risk factors related to the LSE concept.

RATIONALE

The opportunity for electricity generators to sell fixed price forward contracts on a consistent and recurring basis provides financial backstopping for investment in the Ontario electricity market. Through transparent and tradable price signals, investment in new baseload and peaking capacity will occur, while minimizing the need for government backed contracts.

A LSE program is expected to deliver the following benefits to consumers, thereby fundamentally improving the electricity market in Ontario:

1. Price certainty and stability depending on the LSE term and rate setting mechanisms. It is expected that upwards of 40% of total Ontario electricity consumption (or 60 TWhs of the peak load in the market) will be procured over five-year terms. Rates would be firm within the prescribed periods. The rates may vary by time of day, day of week, and/or season in order to reflect load conservation and demand response incentives. No post-period adjustments or true-ups would be needed.

2. A strengthening of the forward price curve and potentially lower prices as a result of competitive procurement practices, hourly spot price avoidance, and procurement into the naturally 'backwarded' energy markets.

3. Effective implementation of meaningful demand response programs as a result of the ability to sell forward contracts. Current Regulated Price Plan (RPP) programs result in a delayed price signal from the hourly market to consumers, which provides few benefits for demand management. The LSE program will better align the desired load response to periodic higher prices.

4. Risk mitigation as a result of reducing the negative perception that arises from short-term volatile electricity prices by transferring risks that currently are borne by customers to the LSEs within the market.

ISSUES TO BE DISCUSSED:

PROCUREMENT ISSUES

RISKS

1. Who owns what risk; and how are they compensated?

- Volumetric (hedge shape to forecast, forecast to actual)
 - *Who bears the risk of unsuccessful DR programs?*
- Price
- Credit
- Regulatory
- Prudential
- Attrition
- Contract terms?

2. Is there additional financial exposure for an LDC, and if so, how can it be mitigated?

- Term of contracts
- Demand response as a hedge?

ROLES

3. Who would the potential LSE candidates be in Ontario?

- Wholesale market participants, affiliates of LDCs, generators/marketers, retailers
- Who do LSEs work for?
- Clarify their role in the marketplace

4. What are the respective roles and responsibilities of LDCs, retail customers and LSEs re consumer loads?

- Who is responsible for **forecasting**?
- Who makes the decisions?
- Who is responsible for customer care?

5. Who owns the load and what are the implications of ownership? What load asset will the LSEs be responsible for – all default supply or will there a volume break (i.e. 250 kWh)?

- What impact does ownership have on conservation demand response programs?
- What are the associated risks and on the use of smart meters?
- Is there a potential for shared savings and loss mitigation?

IMPLEMENTATION ISSUES

6. What are the implications for the overall electricity system if a LSE regime is implemented?

- What are the implications for:
 - *potential day-ahead markets and locational pricing*
 - *energy efficiency programs*
 - *renewable energy portfolios and*
 - *conservation and demand response programs?*

7. What implementation issues arise from the introduction of LSEs and how should procurements proceed (e.g. geographic area or for a percentage of load)?

- Does one LSE take the entire default load, or should the default load be split into geographic regions? Should all of or a percentage of the default load be auctioned?
- If procurement is determined by geographic area, what are the load shape and forecast risk mitigation issues?
- If using LDC territories, who has the responsibility to acquire LSE services?
- What is the pricing relationship between LSEs and LDCs?

8. What business practices and legalities need to be reviewed, including access to data and privacy obligations?

- Can an unregulated entity owned by a regulated entity be an LSE? If yes, what rules of conduct are required?
- What legislative and/or regulatory changes would be required?
- Is the OEB the party to "license" LSEs? Should they be licensed?
- What impact, if any, is there on prudential requirements imposed on LDCs by IESO?
- What back-stop mechanisms are available if an LSE declares bankruptcy?

VALUE/SETTLEMENT ISSUES

9. What value to consumers would a LSE program provide in Ontario and how are those most effectively captured?

10. Will an LSE program deliver lower prices than would otherwise have been the case?

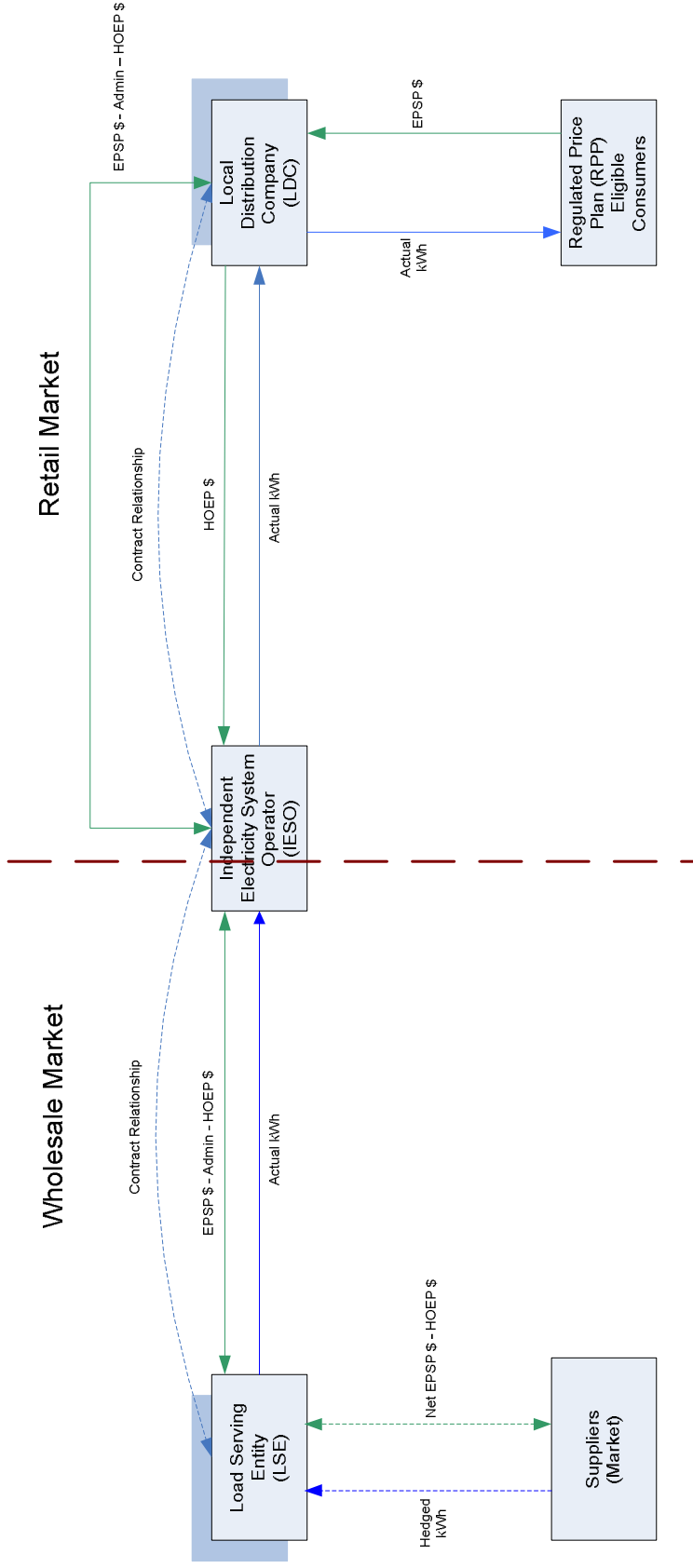
- What are the implications for retailers, and development of consumer retail products?

11. If a LSE system is applied in Ontario, what are the implications to the retail market?

12. If a LSE system is applied in Ontario, what are the implications to the wholesale market?

- Role of IESO?

Figure 1 – Load Serving Entity – Settlement Model

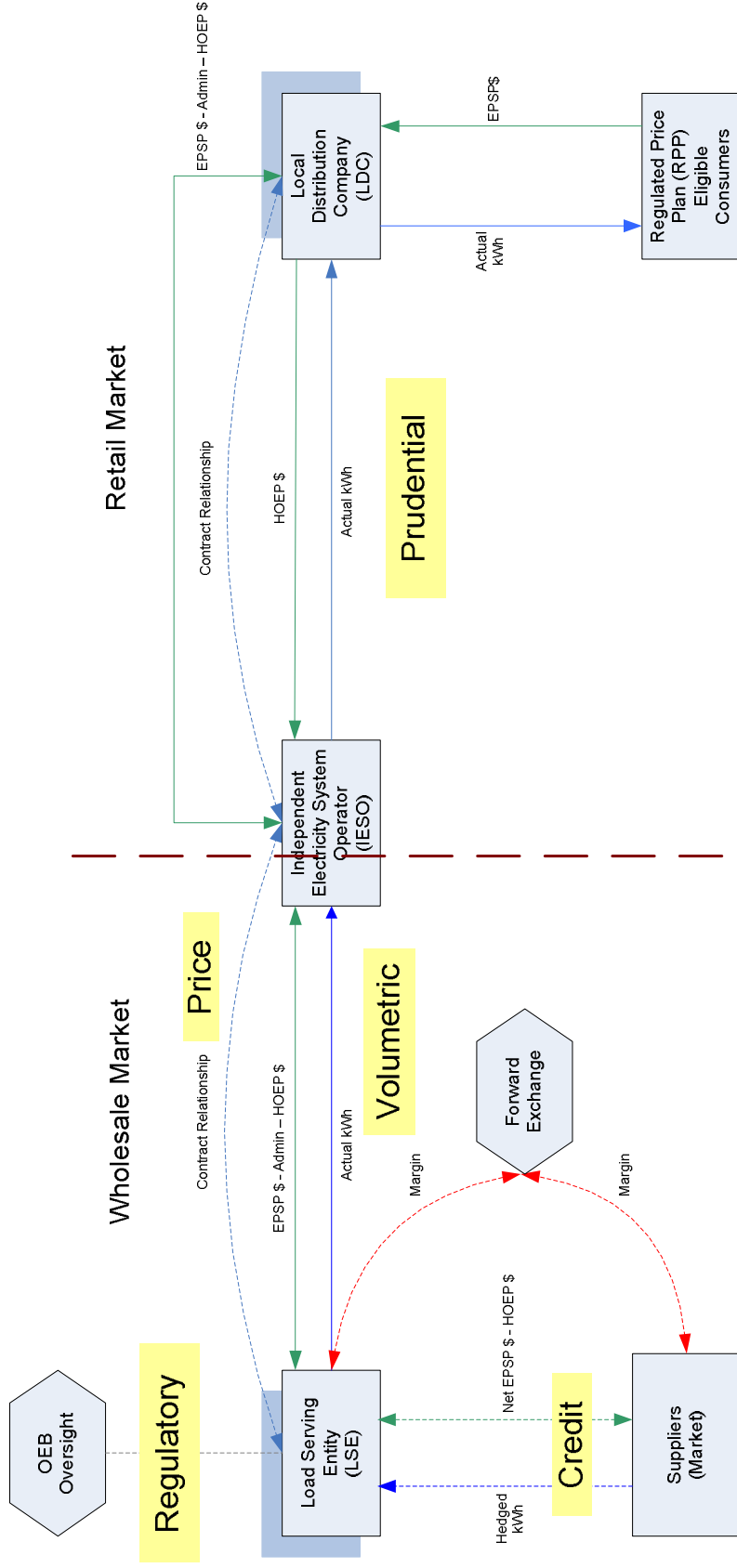


LSE Process

LSEs function in the wholesale market and not the retail market, LSEs would operate as follows:

- LDCs provide usage data for default customer load including site counts, load shape and historic volumes;
- LSEs would assemble the usage data into a forward portfolio including energy requirements and potential load variances;
- LSEs would procure forward contracts to cover the energy portion of the forecasts based on an agreed procurement plan;
- LSEs would mitigate all volumetric risks between procured energy and actual consumption for an agreed risk margin;
- LSEs would provide firm Rates to LDCs as a charge schedule for default load which may include prior agreed variances for season, day of week and time of day usage;
- LDCs would be compensated for any administrative costs either as an agreed add-on to the Rate or as part of their distribution tariff;
- Consumers would pay the agreed Rates for actual consumption to the LDCs;
- LDCs would 'acquire' energy from the IESO at HOEP for actual load;
- LSEs would settle any price variances between HOEP and the LSE Rate charged to default customers as a financial swap through the IESO (alternatively this could be done through a series of physical bilateral contracts); and,
- LSE would in turn settle any variances between forward hedges and actual consumption as a financial settlement with energy market suppliers (i.e. generators).

Figure 2 – Load Serving Entity – Risk Model



Volumetric Risk → Related to the differences between actual consumption and hedge portfolio

- Affected by factors such as weather, Time of Use (ToU), load shifting, attrition and growth in number of consumers
- Normally mitigated as a firm risk margin and settlement of variances within the hourly market

Price Risk → When LSE Rate set by the Price Setting Plan (PSP) and coverage supplied by forward hedges is inadequate to cover swap variances with the LDC and IESO
 → Can be mitigated by LSE carrying price insurance through reliability contracts or call options to establish fixed price ceilings

Credit Risk

- Bilateral credit risk between the supplier of the forward hedges and the LSE
- Based on the overall dollar magnitude of the portfolio and the term of the hedges
- Mitigated by use of Over the Counter (OTC) contracts (ISDAs) and/or forward exchanges with central clearing and mark-to-market margining programs entered into by the LSE

Regulatory Risk → Includes changes in program design and/or implementation processes or potential requirements to integrate new programs such as ToU pricing for demand response, new energy efficiency incentives or a renewable portfolio standard
 → Mitigated through periodic procurement of energy and phased integration of new programs into the PSP

Prudential Risk

- Remains unchanged and stays with the LDCs, mitigated through prudential postings with the IESO
- May be possible to establish a relationship between margin requirements for a central clearing facility and the IESO to establish some form of security posting offsets