

**Retail Choice Study**  
**Issues and Options for Electric Generation Service:**  
**A Report for Public Comment**



**The Belmont Electricity Supply Study Committee**

**Belmont, Massachusetts**

**June 2, 2004**

Prepared by  
*La Capra Associates*

**Retail Choice Study**  
**Issues and Options for Electric Generation Service:**  
**A Report for Public Comment**

**TABLE OF CONTENTS**

1. EXECUTIVE SUMMARY .....	1
2. STUDY CONTEXT AND OBJECTIVES .....	5
2.1 What is Retail Choice? .....	5
2.2 Restructuring Act Requirements .....	7
2.3 Electric Supply Study Approach .....	8
2.4 Electric Supply Study Objectives .....	9
3. BELMONT'S ELECTRICITY SUPPLY TODAY .....	10
3.1 Belmont's Electric System Characteristics .....	10
3.2 BMLD's Recent History For Overall Electricity Prices.....	11
3.3 BMLD's Recent History For Generation Service Costs .....	12
3.3 BMLD Generation Costs Outlook .....	15
4. OVERVIEW OF RETAIL CHOICE AND ELECTRIC DEREGULATION .....	18
4.1 Retail Choice Development in US Electric Markets .....	18
4.2 Massachusetts Retail Choice Developments .....	21
4.3 New England Retail Choice Developments .....	23
4.4 Other US Retail Choice Developments .....	26
4.5 Retail Choice and Public Power .....	29
4.6 Key Observations for Belmont's Situation .....	30
5. RETAIL CHOICE OPTIONS.....	31
5.1 Potential Benefits and Costs from Retail Choice for Belmont.....	31
5.2 Approaches to Retail Choice for Belmont.....	35
5.3 All Customer Opt Out Approach .....	37
5.4 Large Customer Opt Out Model.....	39
5.5 All Retail Supplier Approach .....	41
5.6 The "Status Quo" Approach.....	42
5.7 Retail Choice Implementation Issues .....	45
6. POLICY ISSUES FOR THE TOWN OF BELMONT .....	47

## **Appendices**

A. Bibliography of Retail Choice Reports, Studies and Articles .....	51
B. The Restructuring of New England's Wholesale Power Market .....	53
C. Competitive Suppliers of Retail Generation Service in Massachusetts .....	56
D. Examples in Retail Choice .....	57
E. Financial Performance Assurance in the Electric Power Industry .....	62
F. Retail Choice Implementation Issues .....	66
G. Glossary of Terms .....	73
H. About La Capra Associates .....	78

## 1. Executive Summary

The Belmont Electricity Supply Study Committee (the “Committee”) was formed in 2003 following a vote of the 2003 Annual Town Meeting. The Committee has been asked to:

1. conduct a study of the potential for opening Belmont’s electric system to allow electric consumers in Belmont the option to take generation service from competitive suppliers (“retail choice”);
2. hold a public hearing on this matter; and
3. make recommendations regarding the future of retail choice in Belmont.

This study was initiated to comply with a requirement in Massachusetts’ 1997 Electric Industry Restructuring Act. The Act granted customers of the Commonwealth’s investor-owned utilities the ability to select suppliers of generation service of their choice, rather than take the generation supply offered by their electric utility. The Act also required municipal utilities to conduct a study addressing whether they should offer their customers the same choice.

The Committee has found that this is an appropriate time to address that statutory requirement for a study, and to develop a longer-term vision of the electric supply preferences of the community. Substantial changes in the regional electric markets have been made in recent years and more changes are expected in the next few years. The Belmont Municipal Lighting Department (“BMLD”) supplies are set under favorable terms through 2007. However, BMLD will need to make significant decisions in the next two to three years on longer-term power supply for Belmont – decisions that would best reflect the community’s power supply preferences.

The required study, documented in this report, has been conducted to assess whether retail choice, in any form, has the potential to deliver benefits to the Town and its electricity consumers. The Committee, with support from BMLD and the consulting firm La Capra Associates, assembled information on (1) BMLD’s power supply, (2) retail choice systems in Massachusetts and throughout the US, and (3) New England’s power markets. With this information, the Committee has produced this report to describe the context, and set forth the most realistic options and policy questions that Belmont should consider in deciding whether it wishes to pursue retail choice.

The municipal utility approach to power supply has served the community well over time. In particular, this approach has provided a generation supply at prices that were lower and more stable during the past several years when compared to the prices paid by customers of investor-owned utilities in the Commonwealth. As a municipal utility, BMLD has had, and may continue to have, advantages as a buyer of power on behalf of the Town. These advantages include access to inexpensive hydropower made available to public power entities and a good credit position in the market. In addition, BMLD

currently holds a favorable supply contract through 2007. Nevertheless, looking forward into a fundamentally changing market environment, it is not certain that BMLD's traditional approach to power supply will maintain the advantages in the longer term.

Since its beginning in 1998, 17 states and Washington, D.C. have opened their retail electric generation markets to competition, Massachusetts being one of the first three to do so in March 1998. Because each state has adopted its own, unique approach to retail choice, good information is available on several alternative approaches to implementation of retail choice for Belmont to consider.

However, the actual development of competitive retail markets is still a work in progress. Most states, including Massachusetts, are still in a "transition" from regulation to full competition. Much like telephone deregulation in the 1980's, deregulation of electric markets has evolved and continues to evolve with time. The vast majority of the competitive market activity has been targeted to large commercial and industrial customers, with very low participation by residential and other smaller customers. Today, only one supplier in the Massachusetts market offers competitive supplies to residential customers.

Looking forward, it is possible that competition in retail power markets will develop more rapidly over the next few years. Massachusetts' "transition" phase is ending in early 2005. There is a continued commitment to the retail competition model throughout New England. These factors are expected to provide a more attractive opportunity for competitive suppliers, an opportunity that has been largely absent over the past few years because of the constraints that developed during the transition phase. While some states in the US have backed away from the move to retail competition or have extended their transition periods, Massachusetts and much of New England remain on a path to develop retail competition. However, it is not entirely clear how this competitive retail market will develop and on what timeframe.

The reasons that retail competition has been pursued in many states are several. Primary among them is the prospect that, through competition, costs of generation service to consumers will be lower than under continued regulation. Competition also is expected to bring a broader range of electricity products and services to consumers. In addition to the benefits that might accrue to consumers participating in choice, there also may be benefits to BMLD deriving from reductions in costs or exposures to market risk.

There are costs associated with the design, implementation and administration of a retail choice program. Based on typical costs for implementation of retail choice incurred by small, investor-owned utilities, BMLD's costs to implement a retail choice system are likely to be in the \$500,000 to \$1,500,000 range. There is some potential for substantially more costs, depending on the billing system requirements and the design of the program. The time required to design and implement a retail choice system, based on experience in other locations can be as much as two to three years.

If Belmont is to pursue retail choice, there are a number of approaches that can be considered. Three distinct approaches that Belmont might consider are:

All Customer Opt Out Approach – all customers in Belmont would have the option to choose a supplier or take standard service from BMLD. This model is similar to the approach used in Massachusetts today.

Large Customer Opt Out Approach – the ability to participate would be limited to the largest customers. All others would receive service from BMLD similar to the current arrangement. This option is similar to an approach used in Oregon. It may reduce the cost and preserve certain benefits.

All Retail Supplier Approach – the entire customer base in Belmont would take service from a competitive supplier. This approach is used in Maine.

These options are not the only ones available to Belmont or the only ones considered by the Committee. However, they are representative of the range of options that have been used elsewhere, and appear to be best-suited to the Belmont situation. The benefits and costs of these approaches should be weighed against the continued reliance on BMLD to provide supply for the entire town. As noted, BMLD has some distinct advantages as a buyer in the market. However, in the changing market environment, BMLD faces increasing financial risks and market risks that should also be considered. We also note that some of the benefits that are associated with retail choice may also be obtained through modifications to BMLD's traditional approach. For example, BMLD could increase reliance on renewable supplies, or offer different pricing options.

The Committee presents this study to the community for consideration and comment. The attached report and associated appendices and reference materials provide additional information and context. These materials are available at BMLD's offices, on BMLD's web site, at the Town Clerk's Office, and at the Belmont Library. The Committee invites any and all comments and specifically seeks input and comment on the following questions for its consideration in forming recommendations.

1. Should the Town of Belmont pursue retail choice?
2. If Belmont does pursue a retail choice approach, what benefits to the Town or consumers in the Town are most important to obtain in a retail choice program?
3. If Belmont does pursue a retail choice approach, what timeframe should be considered?
4. If Belmont does pursue a retail choice approach, what approach should be pursued?
5. If Belmont does not pursue a retail choice approach, are there alternative power supply approaches or services, to be provided by BMLD, that are of interest?

Written comments on these policy questions or any other aspect of this report should be submitted to the Belmont Electric Supply Study Committee by August 15, 2004. Written comments can be delivered to the Committee at the BMLD offices, as follows:

By mail: Belmont Electricity Supply Study Committee  
c/o Timothy McCarthy  
Belmont Municipal Lighting Department  
40 Prince Street  
Belmont, MA 02478  
By E-mail: [tmccarthy@town.belmont.ma.us](mailto:tmccarthy@town.belmont.ma.us)

The Committee will present the study to the Belmont Board of Selectmen in June and receive public input in a hearing to be conducted in September 2004.

Following consideration of the public input received, the Committee intends to issue its recommendations to the Belmont Town Meeting by October 1, 2004.

## 2. Study Context and Objectives

This study addresses the prospects for implementing retail choice in electric generation service in the Town of Belmont. The Belmont Electric Supply Study Committee (“Committee”) was commissioned to conduct this study and a public hearing in response to requirements set forth in the Commonwealth’s electric deregulation statutes. The Committee has taken this requirement as an opportunity to assist the Town of Belmont and the Belmont Municipal Light Department (“BMLD”) take a comprehensive look at Belmont’s electricity supply future. This section of the report provides a summary of 1) retail choice; 2) the statutory requirements for the study; 3) the Committee’s approach to the study; and 4) the objectives established by the Committee in anticipation of developing recommendations to the Town. Appendix A provides a list of reports, studies and articles that offer useful background on the topic of retail choice.

### 2.1 What is Retail Choice?

Retail choice opens one major component of traditional electric supply – the “generation” service component – to competition from non-utility, competitive suppliers. This enables customers to “shop” for alternative electricity products (i.e., generation service) in a competitive marketplace.

Generation service pertains to the production of electricity (as measured in kilowatthours, or “kWh”) at power plants. With retail generation service, a retail supplier buys the output from a number of power plants to develop a reliable supply that is able to meet customer needs for electricity as they vary by hour, day and week. To actually reach customers, the electricity that is produced at power plants is transported along high voltage transmission lines (i.e., via “transmission service”), then lower voltage distribution lines (i.e., via “distribution service”) to those consumers. In Belmont and throughout Massachusetts and the US, electric utilities traditionally have had the exclusive right to provide all aspects of electric service (i.e., generation, transmission and distribution service) to all consumers located within their defined service areas. For investor-owned utilities, states have regulated the prices paid by consumers, based on the costs to provide the service plus a reasonable return. This price regulation was intended to ensure that utilities did not abuse their monopoly positions.



Throughout much of their history, electric utilities have operated the generating units that produced the electricity to serve their customers. When necessary, individual electric utilities purchased supplemental generation supplies to augment “owned” generation supplies to meet their customers’ needs. The wholesale power market from which came all electricity sold at retail was thus fully the domain of electric utilities.

However, in the past 25 years, this (closely regulated) monopoly in the power generation portion of the utility business has been increasingly supplanted with a market that has most of the power generation facilities owned and operated by non-utility entities. Over the past decade, wholesale market systems have developed by which these non-utility generating companies can sell their output to wholesale buyers (primarily utilities, but not end-use consumers) at competitive, market-based prices rather than regulated prices. These changes were implemented by changes in Federal law and regulation governing the interstate commerce aspects of the power industry. These changes in wholesale markets altered the way in which state-regulated investor-owned utilities obtained their generation supplies, but they did not change the monopoly status of the utility as the sole provider of generation service to consumers in its service territory.

In the mid-1990’s, the concept of competitive generation service at wholesale began to be extended to competitive generation service at retail. Policy makers view competitive markets and retail choice as promising consumers access to improved prices and electric generation products. Consequently, to implement retail choice, some states began to change their laws and regulations to (1) eliminate electric utilities’ exclusive right to sell power to customers in their territories and (2) provide mechanisms to allow “open access” to utility-owned distribution systems to enable competitive suppliers to deliver their electricity to retail customers.

To implement retail choice for generation supply, the traditional utility service is divided into components, or “unbundled”. In simplest term, the steps to implement retail choice require the following changes:

---

### ***“Unbundling” The Electric Bill***

#### ***Generation:***

*Electricity (kWh), open to competition*

#### ***Transmission & Distribution:***

*The wires, poles, and local service*

#### ***Stranded Costs:***

*Utility investments in power plants and power supply contracts that would not be recovered if power is sold at market rates.*

#### ***Systems Benefits:***

*Fees collected to support renewable development, energy efficiency, and low income programs.*

---

1. Break or “unbundle” the utility’s costs of service into its components to segregate the costs of generation service;
2. Allow customers the opportunity to select competitive suppliers of generation service;
3. Allow competitive suppliers to use utility power lines to deliver generation supplies to their customers; and
4. Eliminate a utility’s charges for generation service where the customer obtains such service from a competitive supplier.

With retail choice, competitive suppliers can participate in the production, trading and selling of electricity in a retail choice system. Customers are free to select the electricity products of competitive suppliers, while the local utility remains the exclusive provider of the transmission and distribution services. In addition, the local utility generally offers a default generation service for those customers who do not opt for a competitive generation service. These “provider of last resort” (“POLR”) services assure continuity of service to all retail choice customers, including those who have not selected or are no longer receiving generation service from competitive suppliers.

## 2.2 Restructuring Act Requirements

The Massachusetts Restructuring Act of 1997 (“Restructuring Act”) established a competitive market for retail electricity in the Commonwealth in areas previously served by investor-owned utilities. Since March 1, 1998, electric customers served by those utilities have had “retail choice”, or the opportunity to choose their supplier of generation service.

Municipal utilities, including Belmont, were exempted from the retail choice requirements established in the Restructuring Act. Rather, municipal utilities had the option to continue serving power to consumers in their communities on an exclusive basis. The Restructuring Act preserves the local control over electric service that municipal utilities have had for many years.

---

*“ If a municipal lighting plant has not allowed retail customers served by it competitive choice of generation supply by March 1, 2003, the ... [town government] ... shall conduct a study, which shall include the holding of public hearings, and may make recommendations which may include, but shall not be limited to, conducting a referendum relative to competitive choice of generation supply for the customers of such municipal lighting plant .”*

*Massachusetts Restructuring Act of 1997 Chapter 164, Section 47A(f).*

---

The Restructuring Act requires a municipal utility to offer retail choice only if it elects to offer competitive generation service to retail customers in other utility areas. For the right to compete elsewhere, the Restructuring Act requires reciprocity. That is, a municipal utility competing in the market would also need to open its own system to other competitive suppliers.

To date, BMLD has maintained its service to Belmont consumers, has not offered competitive generation service in other service territories, and, thus, has not been obligated to implement retail choice or open its system to competitive suppliers. While the Restructuring Act does not require BMLD to implement retail choice, it does require that the Town conduct a study of the merits of implementing retail choice and hold a public hearing. This process assures that the citizens of Belmont have an opportunity to consider the merits of offering retail choice as an alternative to the existing municipal utility service.

## **2.3 Electric Supply Study Approach**

In 2003, the BMLD Board, recognizing the need to conduct this study, asked the Town to establish a citizen's committee to carry out this study. By vote at the 2003 Annual Town Meeting, the Town Moderator was authorized to appoint a committee to conduct a study, hold public hearings, and make recommendations regarding the options for retail choice in Belmont.

The Belmont Electricity Supply Study Committee (the "Committee") was formed to carry out the study and public hearing requirements of the Restructuring Act. In late 2003, the Committee decided to seek technical assistance and conducted a solicitation for consulting firms.

In January 2004, the Committee retained La Capra Associates to assist the Committee with the assessment of retail choice issues and options. The Committee, working with its consultants and BMLD, conducted a review and assessment of BMLD current power supply practices, of the developments in retail choice in Massachusetts and the US, and alternative approaches to retail choice. From this work, the Committee has prepared this report on issues and options to inform the citizens of Belmont about retail choice and the potential for its implementation in Belmont.

---

### *Electric Supply Study Committee*

*Ashley Brown, Chair*

*Patricia DiOrio*

*Robert Forrester*

*Robert Kenny*

*Gretchen McClain*

---

With this report as context, the Committee is soliciting input into the retail choice assessment process. The Committee seeks comments from the community on this report and will hold a public hearing in June 2004 for that purpose. Following the public comment process, the Committee will prepare a final report and recommendations. These recommendations, along with all public comments, will be submitted to the BMLD Board and the Board of Selectmen for their consideration.

## **2.4 Electric Supply Study Objectives**

The Committee views this study as an opportunity to take a comprehensive look at Belmont's electricity supply future and foster discussion in the community on that future. The citizens of Belmont have been served well over the years by the BMLD, both in terms of price and service, and the current supply arrangements are sound. This study does not come in the midst of a crisis requiring urgent action. BMLD currently has power supply arrangements in place that, based on current market conditions, appear to place the Town in a favorable position for the next few years.

However, this is an appropriate time to take stock and develop a longer term vision of the electric supply preferences of the community in the context of the substantial changes that are occurring in the regional electric markets. BMLD will need to make decisions in the coming months and years on power supply – decisions which should reflect the community's preferences for power supply options. In this context, the Committee has conducted this study to assess whether retail choice has the potential to deliver the following benefits, by providing the means to:

- 1) manage the cost of power supply in Belmont,
- 2) address the needs of specific customers or groups in Belmont, and
- 3) offer a renewable or "green" power supply option in Belmont.

In addition, the Committee has sought to balance the potential benefits with the costs, risks and implementation issues that may be involved, including:

- 4) BMLD infrastructure and administrative costs,
- 5) the transfer of costs among consumers in Belmont, and
- 6) market and financial risks to BMLD, the Town, or to consumers.

### **3. Belmont's Electricity Supply Today**

In assessing Belmont's options for receiving electric generation service, whether in the form of retail choice or otherwise, it is helpful to understand the situation as it exists today and how BMLD's circumstances compare to those of other utilities where retail choice has been implemented. To that end, this section of the report provides a summary of the characteristics of the electricity requirements of the Town of Belmont, recent prices, power supply sources, and near term outlook.

#### **3.1 Belmont's Electric System Characteristics**

Belmont Municipal Lighting Department ("BMLD") is a municipal utility serving all electric requirements within the Town as it has done for more than a century. BMLD is governed by a local Lighting Board. BMLD is one of 40 municipal utilities currently operating in Massachusetts. Today, BMLD provides retail electric service to over 10,000 customers in the Town of Belmont. Demand for electricity in Belmont is about 30,000 kilowatts (or 30 MW) during periods of heaviest usage. To put this in perspective relative to the New England market, Belmont's power requirements are a small fraction (i.e., about one-tenth of one percent) of the 25,000 MW of peak demand in the New England region.

BMLD obtains all electricity that it provides to customers by purchasing power in the New England power market from wholesale generation suppliers. It does not own any generation locally or in the regional market. BMLD periodically secures purchased power contracts in the regional wholesale power market (see Appendix B for additional information on the New England's wholesale power market). BMLD also delivers electricity. To accomplish this it builds and maintains utility poles, distribution wires, transformers and other equipment essential to the distribution of electricity. It also provides associated metering, billing, and administrative services to its customers.

Belmont's character as a residential community with small commercial businesses means that BMLD serves predominantly small and medium-sized electric consumers. BMLD's electric sales are approximately 60 percent residential, 6 percent municipal and 34 percent commercial, with no major industrial accounts (compared to those in other cities and towns). In contrast, state-wide electric sales include about 15 percent to industrial (large users) with the remaining 85 percent of sales split evenly between commercial and residential (just over 40 percent each). Belmont's high residential / low industrial customer mix means that usage patterns and customer preferences will differ from those of utilities with a significant industrial base and from the state-wide averages.

### **3.2 BMLD's Recent History For Overall Electricity Prices**

A desire for lower electricity prices has been one of the driving forces behind the move to retail choice across the nation and here in Massachusetts. The price of electricity is also an important issue in Belmont.

The Committee reviewed Belmont's recent price history and compared those prices to the neighboring markets that have been implementing retail choice.

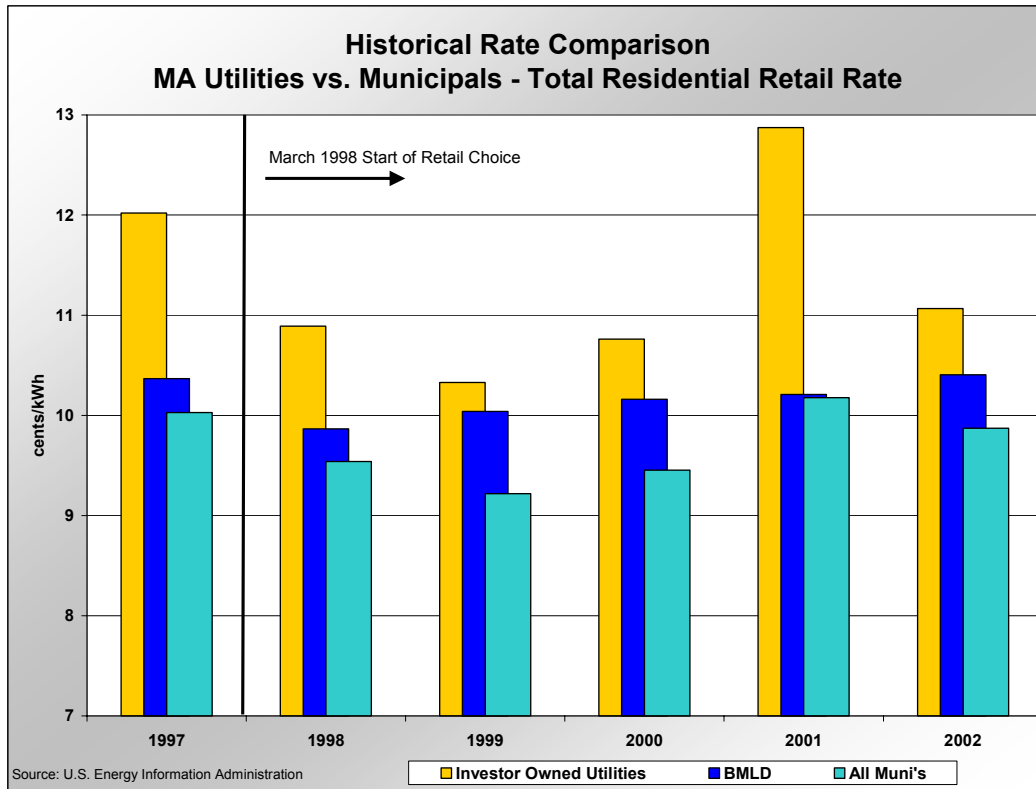
Massachusetts implemented retail choice in March of 1998 and, with that change, implemented policies for the 1998 to 2005 period to affect a transition from regulation to competition. Those transition policies have influenced the prices paid by retail customers of the Massachusetts investor-owned utilities since 1998. In addition to providing customers the opportunity to choose generation service from competitive suppliers, the Restructuring Act implemented statutory measures to reduce prices and establish a gradual transition to full competition over the 1998 to 2005 period.

Overall electricity prices to residential customers in Belmont were about 10 cents per kilowatthour in 1997 and across the 1997 through 2002 period, as shown in Figure 3.1. Across this period, Belmont's electric prices were stable and compared favorably to prices paid by customers of the Commonwealth's investor-owned utilities, even with the mandated price reductions.

BMLD obtained most of its power supply from a firm, indexed price contract that stabilized its prices. In 1997, average prices paid by residential customers of Massachusetts' investor-owned utilities were nearly 2 cents per kilowatthour higher than prices paid by customers of BMLD and other municipal utilities in the Commonwealth. In 1998, Massachusetts implemented retail choice and mandated an initial 10% reduction in rates to all retail customers of the investor owned utilities. Those mandatory rate reductions initially narrowed the difference in price between BMLD (and the municipal utilities, more generally) and the investor-owned utilities. However, fuel prices and market prices for power increased in 2001 and 2002, which offset the initial, mandatory price reductions, driving prices paid by customers of investor-owned utilities substantially higher than the BMLD rate.

Comparing Belmont's prices to investor-owned utilities in this timeframe is illustrative of the transition period price reductions mandated for the investor-owned utilities for this period. Unfortunately, because of mandated pricing policies, there is little that can yet be learned about the effects that retail choice has on prices paid by consumers. In Massachusetts and throughout the US, there is very little true competitive market operating experience that would give hard, statistical evidence on the effects that retail choice will have on prices consumers pay.

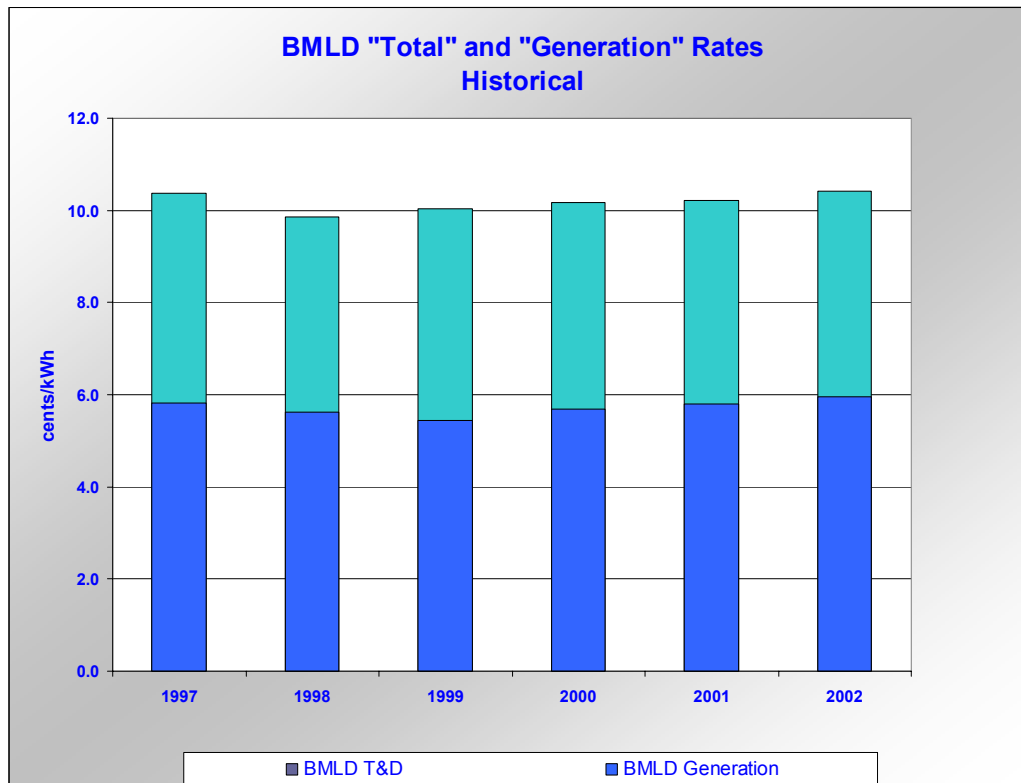
**Figure 3.1**



### 3.3 BMLD's Recent History for Generation Service Costs

A comparison of the generation service costs embedded in BMLD's rates to the generation service rates paid by Massachusetts consumers with retail choice shows that BMLD's generation service costs compare favorably. The differences in these historical overall electric prices are linked to the power supply or "generation" component of those prices. The total price paid by customers as represented in Figure 3.1 includes cost to generate electricity (i.e., for generation service), to transmit that power to customers, and to provide the metering, billing, maintenance, service, and other customer support functions that BMLD and other utilities provide. For Belmont, the "generation" costs have been slightly more than half of the total electric prices. Figure 3.2 provides a comparison of BMLD's average residential electric prices to the generation component of those rates for the period 1998 through 2002.

**Figure 3.2**

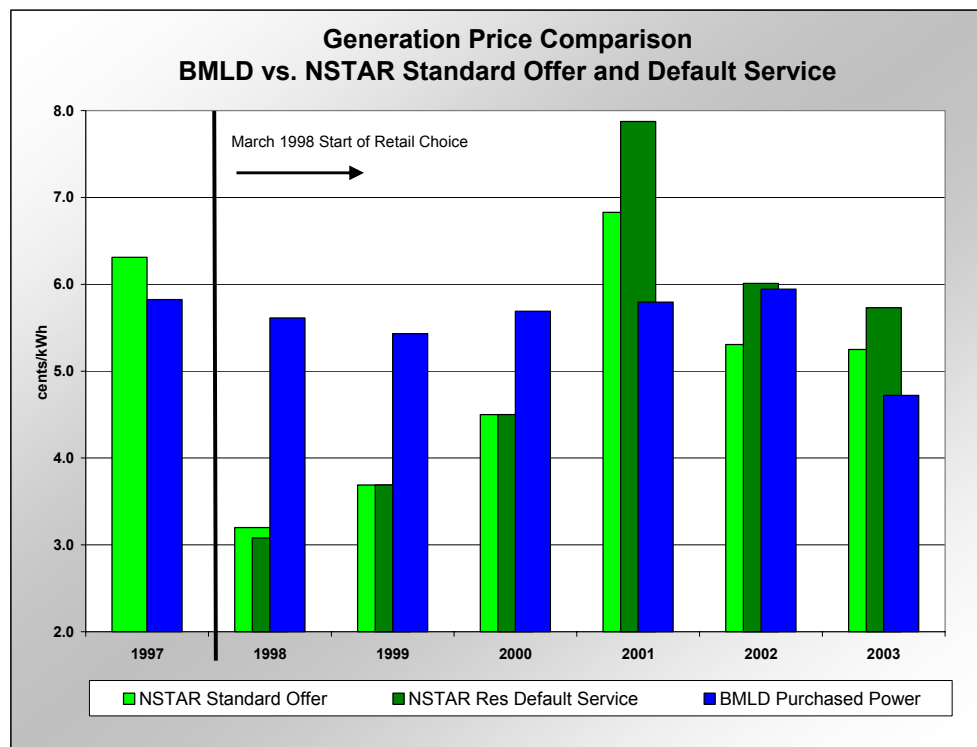


When retail choice was implemented in Massachusetts, the generation component of electric service, and only the generation component, was opened to competitive suppliers. To implement competition for that portion of the total electric service, the generation component of the investor-owned utilities' prices was separated, or "unbundled", from the other component of the service. That unbundled generation component was not initially set at market rates. Rather, it was set at an artificially low value to accomplish the rate reductions specified in the statute, beginning on March 1, 1998. That effect is depicted in Figure 3.3 by comparing BMLD's average cost of its generation to the prices for NSTAR's generation services over the period 1997 through 2003 (NSTAR, the investor-owned utility that serves most of metropolitan Boston and Cape Cod, provides Standard Offer and Default Service as POLR services to its customers without competitive suppliers).



In 1998 through 2000, the Standard Offer and Default Service prices were set to accomplish the statutory price reduction benefit and proved to be well below market prices. Standard Offer prices were not set at cost or at market rates, rather, mechanisms were implemented to allow deferred recovery of actual costs incurred above these levels. It is also important to note that the Standard Offer prices in these years were widely recognized to be below market and, as a result, competitive suppliers of generation service were generally unable to offer price competitive services. As a result of the rate cap and transitional rules in place, a comparison of the prices paid by BMLD customers and prices paid by customers on retail choice is not indicative of any price benefits that derived from competitive retail markets.

**Figure 3.3**



In 2001, Standard Offer prices were increased due to increased fuel costs, as well as planned increases in those prices as the transition to competition progressed. Also in 2001, Default Service supplies began being purchased in the market at competitively bid prices. These changes resulted in substantial increases to generation costs to customers in NSTAR's service territory and are representative of changes that were implemented in Standard Offer and Default Service pricing throughout Massachusetts. These changes resulted in substantial increases in 2001 and, to a lesser extent, in 2002 and 2003, as shown in Figure 3.3.

At this juncture, there is little to be learned about the price advantages or disadvantages of retail competition by comparing BMLD prices to prices paid by customers of retail choice utilities. The history of prices under retail choice to date, both in Massachusetts and in virtually every other state that has begun a transition to retail competition, is not representative of competitive retail markets at work. Rather, the laws and regulations put in place to affect a transition to competition have been the primary determinants of prices paid in retail choice systems thus far.

### **3.3 BMLD Generation Costs Outlook**

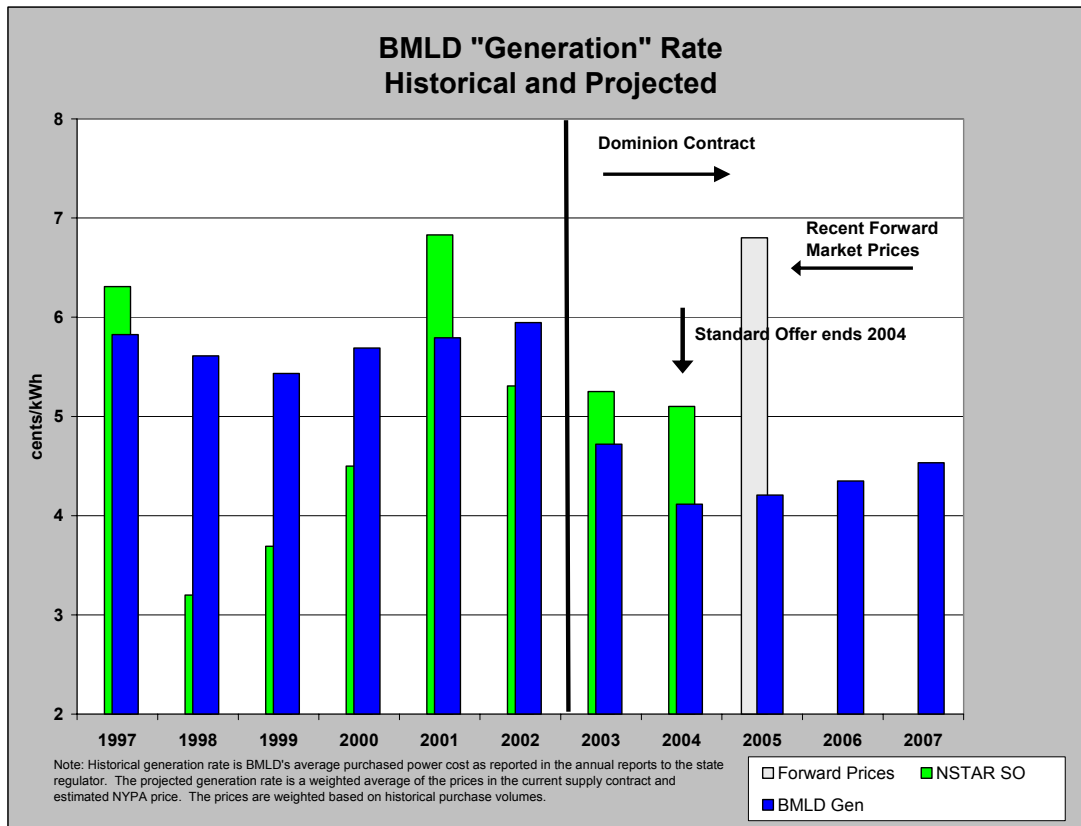
Looking forward, BMLD has a favorable power supply arrangement in hand through 2007. Two aspects of BMLD power supply contribute to this favorable outlook.

First, BMLD receives some of its supply from an allocation of energy from the New York Power Authority (“NYPA”). This is power made available to the residential customers of municipal utilities in the Northeast from federal hydropower facilities in New York. This supply is a small fraction of the total requirements of BMLD. However, it is supply that comes at a favorable cost and helps keep the power supply costs down.

Second, in 2002 BMLD contracted with Dominion Energy Marketing, Inc. (“Dominion”) at a time when wholesale market prices were relatively low. This contract provides most of BMLD’s required supply on a fixed schedule of energy prices through December 2007. This contract provides for the balance of the supply requirement not met by its NYPA allocation. The Dominion contract does not include renewable supplies, but does allow BMLD to reduce its purchase volumes somewhat if BMLD chooses to purchase energy from a renewable power supply.

The combination of generation supplies from Dominion and NYPA provides BMLD an attractive and stable price outlook through 2007. BMLD’s average generation costs through 2007 are depicted in Figure 3.4 and compared to the recent historical costs of generation for BMLD and NSTAR Standard Offer. BMLD generation cost outlook through 2007 is substantially improved over BMLD’s costs during the period 1998 through 2002; based on current market price information, it would appear to be favorable relative to wholesale market during this time.

Figure 3.4



Note: Historical generation rate is BMLD's average purchased power cost from its annual reports. The projected generation rate for BMLD is a weighted average of the prices in the current supply contract and estimated NYPA price. The prices are weighted based on historical purchase volumes. The recent forward market price data for 2005 is obtained from The 10X Group's *End of Day Report* (based on InterContinentalExchange trading platform), adjusted to reflect a full year, all requirements service delivered to Belmont.

The Standard Offer provision of the Massachusetts retail choice statute calls for an ending of Standard Offer pricing at the end of February 2005. Beyond that point in time, absent new legislation, all customers of investor-owned utilities will be on Default Service unless they have selected service from a competitive supplier. Default Service, as currently administered, is solicited from the market in six-month intervals.

Beyond 2007, BMLD has not made any commitments for power supplies. As a result, the price outlook for BMLD's generation supply costs, assuming continuation of the status quo beyond 2007, is difficult to predict with precision. It would be dependent on the market conditions at the time BMLD determines to secure additional generation supplies.

This analysis illustrates some of the timing issues associated with decisions on retail choice. Now, with 3 ½ years before the end of the current contract, BMLD is not pressed to sign additional contracts. However, as time passes BMLD may have attractive opportunities to secure supplies for 2008 and beyond. If Belmont's direction on retail choice is unresolved, there could be cost implications for BMLD.

BMLD's decisions in securing new supplies likely would be much improved if it is provided a clear statement of the Town's plans for implementing retail choice.

## **4. Overview of Retail Choice and Electric Deregulation**

Over the past decade, retail choice has been implemented in 17 states and Washington D.C., and has been actively studied or considered in many other states. In a retail choice environment, electric consumers can choose among competitive suppliers for the electricity they buy, rather than being obligated to buy the electricity from the utility that has exclusive right to provide service in the area where the consumer takes service. As is discussed in Appendix B, deregulation has been occurring in wholesale power markets in parallel with changes in retail electric markets. This section of the report presents a summary of the developments in retail choice in the US, in Massachusetts, and in the New England region.

### **4.1 Retail Choice Development in US Electric Markets**

The US experience with introduction of retail choice over the past decade provides a variety of approaches to this fundamental change in the way in which consumers buy electricity. The US experience is, in fact, a collection of state experiences, as retail electric service provided by investor-owned utilities is governed by state laws and regulations. Each of the states that pursued retail choice has done so in a manner of its own choosing. However, at the core, retail choice in each state establishes a mechanism for competition to develop for retail electric generation service.

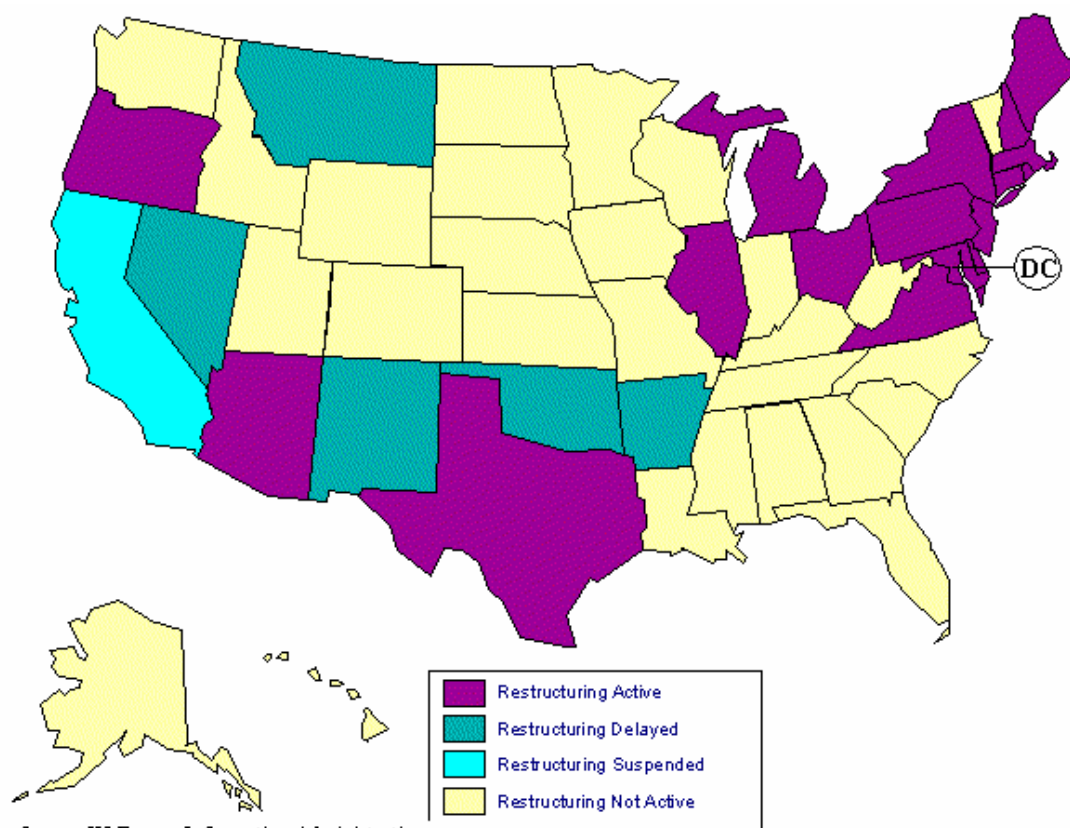
The unbundled components are nearly the same in every state that implements retail choice. However, the particular design of the POLR service, the treatment of metering and billing, and the business protocols between competitive supplier, utility, and consumers do vary from state to state.

The states that have pursued retail choice in some significant manner are listed in Table 4.1 and are shown in Figure 4.1. The move to retail choice has been extensive in the Northeast, with Vermont being the only state not currently offering some form of retail choice in the region. The Mid-Atlantic region and the upper Mid-West also have many states with active retail choice initiatives. Several states in the West and Southwest have also implemented or have actively considered retail choice.

**Table 4.1 Summary of Retail Choice Actions by State**

Jurisdiction		Start Date	Status
1	Rhode Island	January 1998	Transition extended to 2009.
2	Massachusetts	March 1998	Transition period ends March 2005.
3	Arizona	January 1999	Retail choice available, but future uncertain.
4	Pennsylvania	January 1999	POLR generation service remains available from the utility under capped, regulated rates.
5	New York	July 1999	Standard offer prices for individual utilities have been extended as initial standard offer terms end.
6	Delaware	October 1999	Retail choice active for large customers.
7	Illinois	October 1999	A "Post 2006 Initiative" is looking at the end of the transition period on December 31, 2006.
8	New Jersey	November 1999	Market fully open. Transition period ended on August 1, 2003.
9	Connecticut	January 2000	Standard Offer recently extended through 2006.
10	Maine	March 2000	Comp. suppliers provide Standard Offer service.
11	Maryland	July 2000	Standard offer rates end between 2002 and 2008, depending on the utility.
12	Ohio	January 2001	Extensions to standard offer prices pending.
13	New Hampshire	May 2001	Transition service pricing extends through February 2006.
14	Virginia	January 2002	2004 legislation extends rate cap.
15	District of Columbia	January 2002	Retail choice active for large customers.
16	Michigan	January 2002	Retail choice active for large customers.
17	Texas	January 2002	Customers shifted to utility retail affiliates.
18	Oregon	March 2002	Choice for industrial customers only.
19	Nevada	N/A	Suspended in 2001.
20	California	March 1998	Suspended in 2001.
21	Arkansas	N/A	Legislation repealed.
22	Oklahoma	N/A	Suspended.
23	Montana	N/A	2003 legislation suspended choice.
24	New Mexico	N/A	Suspended to 2007.

**Figure 4.1 States with Retail Choice Activity**



Source: US Energy Information Administration

Note: Activity shown as of February 2003.

At this point, retail choice and competitive retail market development is still a work in progress throughout the US. Most states that are active participants in retail choice implementation are still in the “transition” phase, a start-up period where special provisions are in place to ease the transition for consumers and the incumbent utilities. New Jersey is the only state that has fully concluded its transition period and has moved to a retail choice system where all customers are paying market-based prices. Few residential and small business consumers have opted to take service from a competitive supplier in any of the active states. Moreover, a report recently published by the Massachusetts Department of Energy Resources reveals that no state has achieved a robust competition in its market for retail generation services. State transition rules, coupled with cost and financial problems in wholesale markets, have limited the development of competitive retail suppliers and competitive alternatives to the service offered by the local utilities. Nevertheless, retail choice systems are moving ahead in the region and in many states across the country.

## **4.2 Massachusetts Retail Choice Developments**

Massachusetts was one of the first states to implement retail choice in the region and the country. Since March of 1998, all customers of Massachusetts’ investor-owned utilities have had the option of taking generation service from a competitive supplier. Unless and until a customer chooses to receive competitive generation service, the customer receives Standard Offer or Default generation service from his or her electric utility. As such, the Commonwealth has implemented an “all customers, opt out” model for retail choice.

Massachusetts’ approach to the implementation of retail open access was, by design, a “go slow” approach. At the outset, retail consumers were provided a 10 percent rate decrease and utilities were afforded a multi-year transition period to recover “stranded costs”, costs that utilities would otherwise not be able to recover at market-based prices. This effect is depicted in Figure 3.1 above. To accomplish the rate cuts and stranded cost recovery, the “generation” component of the rates was kept low through a transition period set for the period 1998 through 2005. This Standard Offer generation component was the initial POLR service available from the utilities to its customers. In Massachusetts, a second “Default” service also was established for new customers and customers who, for what ever reason, wish or need to return to the utility for service. The Standard Offer and Default Service prices became the price to beat for competitive retail suppliers. The prices for these services are depicted in Figure 3.3 above.



Generation asset divestiture was another significant feature of the Massachusetts approach. In the implementation of retail choice, each of the investor-owned utilities auctioned off their power plants to competitive generating companies. This had the dual effect of removing the utilities from the electric generation business and attracting a number of competitive generation companies to the Massachusetts and New England wholesale markets. As a consequence of divestiture, Massachusetts' investor-owned utilities are in a similar position to BMLD with respect to their dependence on the wholesale power market as the source of generation supplies to their customers.

Massachusetts' Restructuring Act also included provisions that allow municipalities located within the service territories of investor-owned utilities to aggregate their loads for purpose of choosing a single competitive supplier. In January 2003, the Massachusetts Division of Energy Resources published its *Guide to Municipal Electric Aggregation in Massachusetts*. Massachusetts' provisions for "municipal aggregation" are interesting in that they offer an opportunity for cities and towns in retail choice areas to achieve the same supply procurement status that Belmont enjoys today – namely, the ability to purchase a generation supply for the entire town directly from the wholesale power market (albeit with a statutorily-mandated opt out provision).

Metering, billing and information services are identified as potentially competitive services in the statutes. Some competitive retail suppliers see this as a critical step on the road to establishing healthy competition in retail power markets. Massachusetts Restructuring Act included a provision directing the Department of Telecommunications and Energy to, "no sooner than January 1, 2000," commence an investigation relative to the manner in which metering, meter maintenance and testing, customer billing and information services have been provided by electric utilities. If the DTE concludes that such utility services should be unbundled and provided through a competitive market, it would have to submit such recommendation to the Legislature for further action through the legislative process. It is possible that Belmont could encounter the issue of competition in metering, billing and information services as it considers opening generation service to retail choice, but this likely would be a difficult and complex undertaking.

As Massachusetts enters its seventh year of retail choice, competitive retail market activity remains small. As the competitive power industry has developed, few competitive retail suppliers have developed operations in Massachusetts. Competitive generating companies have not chosen to enter the competitive retail generation business. The businesses of owning and operating generating plants and selling output in wholesale markets is distinct from the business for retail customer marketing and service. In addition, competitive wholesale providers are accountable under federal regulations for business practices, while competitive retail suppliers are accountable to the Massachusetts Department of Telecommunications and Energy.

The customer and supplier activity in retail choice has been concentrated in the large commercial and industrial customer sectors. Customer migration data compiled by the Massachusetts Division of Energy Resources shows that, as of December 2003, competitive suppliers served a fairly large percentage (33 percent) of large commercial and industrial customers, representing over 50 percent of the load (i.e., total kilowatthours) for that customer class. By contrast, only 7 percent of small commercial and industrial customers, and only 3 percent of residential customers (2 percent, by load) were served by competitive suppliers. In addition, as of mid-2003, only one registered competitive supplier was actively offering a retail option to the smaller customer segments. A complete list of registered competitive suppliers currently registered and claiming to offer retail generation service in Massachusetts is included in Appendix C. At this time, only one has a competitive supply offering to residential customers.

Today, Massachusetts competitive retail choice is at a crossroads. Considerable effort has been devoted to developing policy options that might accelerate development of the competitive retail market for electricity. The original transition period and the Standard Offer pricing are currently slated to end in February 2005. Under current law and rules, beginning in March 2005, Default Service will be the only service offered by the local utility. Recently, legislative proposals have been considered to modify the form of retail choice following the end of the Standard Offer transition period. At this writing, no legislation addressing the post-March 2005 period has been enacted. Much of the discussion regarding legislation centers on ways to foster the development of a competitive retail market in Massachusetts. Absent legislative change, all retail customers of investor-owned utilities will soon be receiving either a market-based Default Service or taking service from a competitive supplier. In either case, it appears likely that retail market development will enter a new, more active phase in 2005.

#### **4.3 New England Retail Choice Developments**

Six years have passed since Massachusetts and Rhode Island became the first of the New England states to open their markets to competitive retail electric generation services. Connecticut, Maine and New Hampshire have each implemented retail choice, as well. At this juncture, Vermont is the only New England state that has not implemented retail choice.

As in Massachusetts, retail power markets in New England have fallen short of initial expectations. Many large commercial and industrial customers have secured generation service from competitive suppliers. However, few residential and small commercial customers in the region have chosen a competitive electric supply. In fact, many of the suppliers who registered with public utility commissions in the early days of retail choice are inactive in many parts of the market or have closed their doors to new business from residential and small commercial customers. This seems to be because competitive suppliers have been unable to offer retail generation products perceived as superior to the

Standard Offer and Default Service offerings and, as a result, have not made significant inroads into retail markets. As Massachusetts represents nearly 50 percent of the entire New England market, the competitive supplier activity in Massachusetts retail markets is reflective of the region overall.

### **Rhode Island**

Retail choice was signed into law in August 1996, phasing in retail choice in Rhode Island during 1997 and 1998. The mechanics of retail choice in Rhode Island are largely the same as those of Massachusetts. Customers are free to choose generation supply services offered by competitive retail suppliers, and have the protection of a utility-provided default service if needed. Rhode Island's initial restructuring law also included the divestiture of generation assets by the utilities. Rhode Island revised its restructuring law in 2002, making changes to Standard Offer and Last Resort services and extending these services through 2009. Under the new law, utilities can offer a variety of utility generation service options. In addition, the public utility commission is authorized to approve the return of non-residential customers to standard-offer service, and utilities are allowed to recover the costs of fuel risk hedges in standard offer rates.

One program enabled by the 2002 legislation is the "Green Up" program, a renewable energy supply service offered by the utility. Through the revisions to the law utilities were allowed to broaden their offerings beyond the basis Standard Offer and provider of last resort service. This is important in that it suggests a path for Belmont, if there is interest in expanding reliance on "green" or renewable generation sources via the utility (i.e., BMLD) rather than competitive suppliers in a retail choice environment.

In 2003, just under nine percent of the Rhode Island's total retail load (i.e., kilowatthours) was served by competitive retail suppliers. As in Massachusetts, most of that is larger commercial and industrial load.

### **Connecticut**

Retail Choice was signed into law in April 1998. Connecticut also implemented a phased approach to retail choice. Large industrial customers were allowed choice beginning January 2000, and all other customers beginning July 2000. Divestiture of generation assets was implemented, as in Massachusetts and Rhode Island.

The mechanics of retail choice in Connecticut are largely the same as those of Massachusetts. Customers are free to choose generation supply services offered by competitive retail suppliers, and have the protection of a utility-provided default service if needed. Connecticut's initial Standard Offer period ended at the end of 2003. As in Massachusetts, Connecticut municipalities are exempt from the requirements of retail choice.

The development of Connecticut's retail markets is also proceeding slowly. The Connecticut Energy Advisory Board recently reported that, as of July 2003, only about 1.5 percent of that state's overall load was served by competitive suppliers of generation services. Like Massachusetts, Connecticut also is seeking ways to stimulate the development of retail markets. Legislation enacted in June 2003 extended the transition period. As a consequence, a "transitional" Standard Offer based on competitive wholesale market rates will be in place in the 2004 through 2006 period. In the 2003 legislation, Connecticut also expanded its renewable portfolio system, extending the requirement for renewable content to the transitional Standard Offer and to competitive retail suppliers. This expanding market for renewable energy supplies may lead to increased opportunities for Belmont to augment its supply portfolio with green products, with or without retail choice.

### **New Hampshire**

House Bill 1392 was enacted in May 1996 and called for retail choice to be implemented by January 1, 1998. The bill established principles for restructuring, but left details to the New Hampshire Public Utilities Commission ("NHPUC"). Litigation of the NHPUC's Order implementing restructuring delayed its implementation for many New Hampshire customers. Choice for customers of Public Service of New Hampshire (about 70 percent of customers in the state) began on May 1, 2001, with implementation of a sixteen percent rate discount.

As it has been implemented, the mechanics of retail choice in New Hampshire are largely the same as those of Massachusetts. Customers are free to choose generation services offered by competitive suppliers, and have the protection of a utility-provided POLR generation service if needed.

Two features of restructuring in New Hampshire are noteworthy. First, in April 2003 Senate Bill 170 was signed into law prohibiting Public Service of New Hampshire ("PSNH") from selling its fossil and hydro generating capacity until April 2006 (when PSNH's standard offer service is scheduled to end). This suggests that policy makers saw value in preserving long-term supply resources for the stability that they would bring to consumer prices. Second, in May 2003 the NHPUC ruled that an industrial customer could be a self-supplier, buying energy directly from the New England Power Pool, and should not be subject to state regulations for retail power suppliers. This limited form of retail choice for large customers establishes a model that Belmont could choose to follow.

## **Maine**

Maine passed its retail choice law in May 1997, implementing customer choice beginning in March 2000. Maine also implemented divestiture of generation assets.

The mechanics of retail choice in Maine are largely the same as those of Massachusetts. Customers are eligible to take Standard Offer service and are free to choose generation supply services offered by competitive retail suppliers.

Maine's approach has two unique features, both related to the fact that the Maine utilities do not have Standard Offer service responsibility. First, its standard offer service is provided directly at retail by competitive suppliers under Standard Offer supply contracts procured through competitive bids conducted by the Maine Public Utility Commission. Second, the last resort service is a direct purchase from the New England wholesale spot market. The Standard Offer transition period, as currently planned, will end in 2005. As is discussed in later sections of this report, Maine's approach to retail choice represents an option for Belmont that may serve to limit BMLD's (or the Town's) exposure to financial assurance risk and the potential adverse consequences of taking title to a power supply through traditional power purchase arrangements.

Maine's large commercial and industrial customers have had significant participation in retail choice. In 2003, about 60 percent of the load in this customer group was served by competitive suppliers. Residential and small commercial customers in Maine have largely remained with Standard Offer service, consistent with results observed in other New England states.

## **4.4 Other US Retail Choice Developments**

As noted in Section 4.1, a number of states across the US have implemented retail choice of some form. The retail markets in those states have very little bearing on the retail markets in Massachusetts or New England. However, given that states have taken differing approaches to retail choice, their experiences may offer insight to design choices that Belmont might consider in implementing a retail choice system.

First, it is important to note, as is the case in each of the New England states, nearly all of the states in the US that have adopted retail choice are still in the transitional phase. Transition periods adopted by states are typically five to seven years in duration, and several states are now opting to extend those periods. For example, Virginia just enacted a law extending their transition period to 2011. This also means that virtually all of the historical information on retail choice (prices, customer shopping statistics, and retail competitor offerings) comes from markets in formation under transitional rules. There are no fully developed retail markets to examine and learn from at this point in time.

Nevertheless, there are several active states that offer experience with alternative retail choice approaches that can be of value. The following is a short synopsis of the distinctive features of the approaches from some of the states outside of New England that are most active in the advancement of retail choice. Of the states that have implemented retail choice, the states that have had the most retail activity include Texas, Pennsylvania, and Ohio. New Jersey and Oregon offer interesting features, as discussed below.

### **Texas**

Texas introduced retail choice to its power markets in January 2002. Texas is noteworthy because it is often cited as the state in which retail choice has met with some success. The defining feature of Texas' approach to retail choice is that each utility created a retail energy provider affiliate, to which customers who did not obtain generation service from a competitive supplier were transferred. The affiliated retail energy providers initially provided generation service pursuant to rates approved by the Texas Public Utilities Commission. However, rates for the generation supply service from affiliated retail energy providers recently have been deregulated, and appear high enough to create some incentive for customers to seek out other suppliers. Roughly ten percent of residential customers currently are receiving generation service from a competitive generation supplier.

It is not clear that Belmont could transfer its customers to another retail generation supplier, affiliated or otherwise, with the expectation that that supplier would someday serve customers at market-based prices. However, we identify this approach as an interesting strategy that many feel has been successful in bringing some measure of competition to retail markets.

### **Pennsylvania**

Pennsylvania was one of the first states to implement retail choice, opening its markets to competitors beginning in January 1999. Pennsylvania achieved what some viewed as substantial early success in retail competition, then subsequent retrenchment. Spurred by relatively high rates for utility generation supplies in some utility service territories (shopping rates in Pennsylvania did vary considerably by utility), penetration rates by competitive suppliers selling to residential customers reached as high as 15 percent in late 2000. However, retail generation market activity in Pennsylvania has cooled considerably in recent years as rising prices in wholesale power markets eroded the opportunity for competitive suppliers to price below the costs of utility generation supplies. By mid-2001, many competitive suppliers had abandoned Pennsylvania's retail markets. As of May 2003, only one competitive supplier in the entire state was offering a retail generation product priced below that of a competing utility generation service.

Pennsylvania's experience may offer lessons for Belmont. It is interesting in that it demonstrates that temporary strategies for increasing prices for utility POLR generation services may have only a temporary effect on the numbers of customers that choose to receive generation service from competitive suppliers. Moreover, customers demonstrated a tendency to return to the utility's POLR generation service when wholesale market conditions were at their worst. This behavior can lead to unanticipated costs to a utility and its "non-shopping" customers.

### **Ohio**

Ohio's retail choice approach has led to substantial activity in the area of municipal aggregation. In that state, municipal aggregation has emerged as the preferred mode of accessing competitive power suppliers. Municipal aggregation is, in essence a buying cooperative run by municipal governments. Municipal aggregation provides an opportunity for municipalities that are not operating municipal utilities to facilitate electricity purchasing for its citizens.

Retail choice was implemented for the Ohio utilities on January 1, 2001. In November 2000, voters in approximately 130 Ohio communities had approved referendums allowing opt-out municipal aggregation. The Public Utility Commission of Ohio approved rules for governmental aggregation in August 2001. Ohio has some of the highest residential shopping rates in the country; however, as of early 2003 the state's municipal aggregation program accounts for over 93 percent of the residential customers no longer receiving generation service from their local utility.

Ohio's experience in retail choice is interesting from several vantage points. First, it is remarkable the degree to which customers of retail choice utilities have looked to municipal load aggregation as a desirable approach to securing needed generation services. Second, as discussed more fully in Appendix D, Ohio offers a view of how municipalities seeking to make "green" generation services available to customers might approach the issue.

### **New Jersey**

New Jersey has had retail open access since late 1999. New Jersey has pioneered an auction system to secure supplies for their basic generation service. This has attracted a number of wholesale suppliers to the market. However, the shopping activity among small consumers has been light. In 2003, New Jersey amended its retail choice law to enhance the ability for municipalities to form buyer aggregations. New Jersey's auction processes represent an interesting approach to securing POLR generation services in a retail choice environment, but probably occur at a scale too large to be feasible for Belmont.



## **Oregon**

Oregon began offering retail choice to business and industrial customers beginning in March 2002 and has concluded that implementing retail choice for residential consumers and small farms would not be beneficial. Oregon's decision to refrain from retail choice for small customers was based on concerns regarding the costs to implement, limited retail supplier and retail market development in other states, and opportunities to provide desired services through programs offered by the regulated utilities. In addition, Oregon residential and small farm consumers obtain beneficial rights to federal hydropower projects in the Pacific Northwest that could have been lost if retail choice were implemented.

As is discussed in greater detail below, Belmont may find value in an approach that mimics Oregon's approach to retail choice.

## **4.5 Retail Choice and Public Power**

Municipal utilities in some states have been exempted from the requirement to provide retail choice. By contrast, cooperative utilities that are accountable to state regulatory commission have been required to offer retail choice (for example, the New Hampshire Electric Cooperative, and, as initially enacted, the cooperative utilities in Arkansas). There are only a few examples of public utilities that have elected to implement retail choice. Two examples are summarized here (please refer to Appendix D for further information):

The Pasadena Water and Power Department ("PWP") opened its service territory to retail competition in generation services, joining the investor-owned utilities in the broader restructuring of California's power markets. PWP officials report that no customers have been lost to competitive generation suppliers since that time. PWP offers a green power program to its customers; it recently signed a long-term agreement to buy a 6 MW share in the High Winds generation facility in Solano County in Northern California. In addition to the High Winds contract, PWP buys renewable energy from hydroelectric facilities in Azusa and at Hoover Dam.

The Salt River Project ("SRP"), a large public power entity, opened its service territory to retail competition beginning on January 1, 1999. SRP provides electricity service to 820,000 customers in the Phoenix (Arizona) metropolitan area. As a public power entity with significant generation holdings and a possible interest in offering retail generation service in Arizona, it appears that SRP elected to join Arizona investor-owned utilities' in opening its retail markets to competition in generation service.



#### **4.6 Key Observations for Belmont's Situation**

Experiences from around the country hold some important lessons for Belmont as it considers a move to implement retail choice in its market. These are presented in summary form below:

- Retail choice is likely to offer more options to Belmont's larger consumers. Retail choice is likely to bring them alternate generation service opportunities that they may find attractive and more suppliers are actively service such accounts now.
- In no power market in the US has a robust competition developed in retail generation services at the residential and small business level. Some states have met with limited success, measured in terms of the number of customers no longer receiving generation service from their electric utility. However, retail choice is not yet fully developed, with many electric utilities still offering (and even extending) transitionary Standard Offer pricing.
- At the present time, there are very few competitive retail generation suppliers offering products to residential and small commercial customers in Massachusetts. Belmont's customer base is largely residential and small commercial, which means the opportunity for real choices for most of Belmont today is limited.
- Policy makers in Massachusetts and Connecticut are seeking strategies to improve the competitive landscape for retail generation services for small customers within their markets. If successful, opportunities likely will result for residential and small business consumers of electricity in Belmont.
- Implementing retail access for residential and small business customers in Belmont, as with all other utilities, will require a significant commitment of BMLD time and financial resources.
- Municipal aggregation is the leading form of retail choice offering for small customers. This is similar to BMLD's current approach. An alternative could be to seek a larger aggregation with other municipalities to improve buying power and leverage resources, similar to some larger aggregation programs.
- Belmont could include "green" or renewable resources in its supply portfolio and even provide individual customers with the opportunity to obtain a "green" supply, without implementing retail choice. BMLD's present contract allows some opportunity to include renewable supplies today.

## **5. Retail Choice Options**

The many approaches to retail choice pursued in states around the country make the point that retail choice is not a single, uniform practice. Rather, there are a number of approaches to the implementation of retail choice that carry a range of potential benefits and costs. To understand the options for Belmont more clearly, the Committee has developed a menu of retail choice approaches that are representative of the range of approaches that could be implemented and has prepared an assessment of the key benefits and costs that might accrue to Belmont for each of these options.

This Section of the report describes the Committee's menu of approaches to offering retail choice in Belmont and discusses the potential benefits and costs associated with each approach.

### **5.1 Potential Benefits and Costs from Retail Choice for Belmont**

The Committee has conducted this study to assess whether retail choice has the potential to deliver benefits. The Town of Belmont has the option, but not an obligation, to implement some form of retail choice. In that context, the Committee has attempted to identify areas where clear benefits to the Town, to BMLD, or to BMLD's customers might be obtained by implementing retail choice.

Of course, it is equally important to understand the costs required to achieve the benefit, as well as any potential inequities within the Town pertaining to the allocation of the benefits and the costs. In this context, the Committee has identified areas of costs, risks and implementation issues that would be associated with implementation of retail choice.

The timeframe for consideration of benefits is, as a practical matter, longer term, beginning in 2008. As noted in the previous section, BMLD has a beneficial contract for all of the Town's requirements through 2007. The first window of opportunity to implement retail choice at a time that coincides with the need to secure new supplies would be in 2008. In addition, as we discuss further below, time will be required to make decisions on and to implement retail choice, making it difficult to implement retail choice prior to 2008 in any event. Thus, the potential for benefits to be derived from retail choice is viewed, not from the perspective of current conditions, but from the perspective of the potential for longer term benefits that could be obtained if retail choice is implemented in 2008 or later. Much of the costs to implement retail choice would be incurred in the months prior to initial implementation of retail choice and in the transitional period in the first few years of retail choice implementation.

The areas of potential benefits and costs that the Committee has identified are described in this section.

### **Choice**

One potential, but intangible, benefit of retail choice is simply having the freedom to choose electric suppliers. Belmont resides in a state and a region that is actively pursuing, and continues to be firmly committed to, the development of a competitive retail market environment. While the competitive retail options for most consumers are limited today, the Town could conclude that offering retail choice in Belmont provides an important long term benefit by affording consumers in Belmont the same opportunities that others in the region will have. Many advocates of retail choice espouse a belief in the long term value in market efficiency, product choices, and customer satisfaction that will be derived from choice.

However, retail choice cannot be implemented without design of new systems and procedures and, therefore, does not come without some cost. BMLD will need to spend time and incur costs to implement systems to administer the program, to provide ongoing support for the information exchanges necessary to support the choice activity, and to provide backstop service. In addition to these upfront implementation costs, other, ongoing costs may be incurred by introducing retail choice, possibly including the loss of entitlements to preference hydropower from the New York Power Authority and the requirement that a fee to support the renewable energy fund be collected.

### **Cost Savings/Price Reductions**

The primary, tangible benefit that would argue for implementation of retail choice is the prospect of cost savings. Cost savings benefits, if they can be realized, could be of the following types:

1. Customer Cost Savings – if, by introducing retail choice in Belmont, the customers of BMLD can individually and collectively lower their cost of purchased electricity relative to the costs that would be incurred by BMLD to secure that supply on their behalf, those savings would be a benefit of retail choice.
2. BMLD Cost Savings – if, by introducing retail choice in Belmont, the costs to operate BMLD can be reduced, those savings would be a benefit that should be considered in assessing the merits of retail choice. This would include savings that may be realized in managing purchased power costs, as well as in such areas as metering and billing, collections, or financing.

In assessing cost savings, consideration will need to be given to the possibility that retail choice may offer savings to some customers, but not all. In that case, the savings potential for some must be weighed against any added cost that may be carried by others to assure that net savings are realized and inequities are addressed in the design process.

In addition, the cost savings that BMLD or BMLD customers may realize must be weighed against the upfront and ongoing costs to implement retail choice described above.

### **Risk Management**

Retail choice can offer choice to customers in their approach to price certainty. A variety of contracting strategies can be utilized to manage exposure to risk. Just as some mortgage holders prefer long-term, fixed-rate mortgages and others prefer short-term, adjustable-rate mortgages, the buyer's view of the market and the risk trade-offs will determine the best approach to buying electricity supply.

Several factors affect the price stability that can be offered by BMLD or a competitive retail supplier. As noted in Section 3.4 above, spot market electricity prices are subject to considerable variability and volatility. Other risk factors for a buyer like BMLD include variability of the load that is to be served and financial performance assurance requirements (Appendix E addresses the emergence of financial performance assurance as an issue increasingly affecting electric power transactions).

Risk management benefits, if they can be realized, could be of the following types:

1. Customer Benefits – if, by introducing retail choice in Belmont, the customers of BMLD elect contracting strategies different than the approach that would be taken by BMLD to secure that supply on their behalf, any resulting benefit should be considered in assessing the merits of retail choice.
2. BMLD Benefits – if, by introducing retail choice in Belmont, BMLD's exposure to market volatility, load and credit risk can be reduced, it would be a benefit that should be considered in assessing the merits of retail choice.

As with the cost savings, there is potential for transfer of risk exposure among customers. In addition, retail choice could increase BMLD's risk in buying provider of last resort supply, which could increase costs of that service.

### **Type of Supply – Portfolio Choice**

Retail choice offers a way for individual customers to choose among types of power supply sources, or the supply “portfolio”, offered by competitive suppliers.

All competitive retail suppliers doing business in Massachusetts are required to maintain an amount of new renewable supply source in the mix of sources upon which they rely and to meet certain pollution emission standards. This “renewable portfolio requirement” assures a market for renewable power development. Each supplier’s portfolio is also required to comply with pollutant emissions standards set by the Commonwealth. As noted in Section 3.4, ISO New England administers the Generation Information System to support the tracking and verification of these portfolio characteristics.

Beyond these minimum requirements, retail suppliers can offer alternative portfolios. The marketing of “green” power options is a prime example of this option. In a retail choice system, individual customers would have the option to elect to take supply from suppliers offering supply meeting the minimum requirements or alternatives offering some form of “premium” content.

There are potential portfolio content cost implications of implementing retail choice. First, BMLD today is exempt from the portfolio content requirements that competitive retail suppliers must meet and, therefore, is not obligated to incur the added cost required to meet those requirements. Implementation of retail choice does mean that all consumers in Belmont would be committed to any added costs associated with compliance with the minimum portfolio requirements.

BMLD can also secure supplies to meet alternative portfolio content objectives if desired. Retail choice offers a way for consumers to choose premium portfolio power supply. A BMLD portfolio standard is another. To the extent that portfolio content is a key objective for the community, the costs and benefits of pursuing that objective by implementing choice should be weighed against the costs and benefits of alternative portfolio options that could be implemented by BMLD.

## 5.2 Approaches to Retail Choice for Belmont

As noted above, there are a number of potential approaches to retail choice that have been implemented in the US. The Committee has considered several alternative approaches in the context of Belmont's specific circumstances. Belmont-specific characteristics that will have bearing on the form of retail choice that might be best suited include:

1. Location in Massachusetts – if Belmont is to adopt retail choice, it will be important to consider standardizing Belmont's practices to those established in Massachusetts for the investor-owned utilities, particularly as it pertains to information exchange protocols between BMLD, competitive suppliers, ISO New England, and customers.
2. Customer Mix – Belmont's mix of customers is predominantly residential and small commercial. Belmont has a very limited number of small industrial customers. The largest BMLD customers are McLean Hospital, the Town of Belmont facilities, and the Belmont Hill School. Much of the activity in retail choice around the country to date has been in the large commercial and industrial customer segments.
3. BMLD Supply – BMLD does not own or operate any generation supply. All of the power supply is obtained through purchased power contracts. Beyond current contractual commitments through 2007, divestiture or stranded costs are not material issues.
4. Retail Markets – Belmont's load is not of sufficient scale to have any direct influence on the pace or direction of the development of the retail market place in Massachusetts or New England. The approach and timing of retail choice should consider the expected course of development of retail supply options for residential and small commercial customers in the broader, regional market place.
5. Community Preferences – to date, BMLD has not received strong expressions of interest in retail choice or in alternative portfolio content. The Committee's public hearings process will be an opportunity to obtain input on these preferences.

In this context, the Committee considered the following alternative approaches to identify the approaches which appeared to be the best options to consider in some detail:

1. All Customers Opt Out Approach – this approach is very similar to the approach implemented in Massachusetts for investor-owned utilities. All customers have the opportunity to select a competitive supplier with BMLD providing a provider-of-last-resort service.
2. Large Customers Opt Out Approach – a more limited variant of Option 1. The opportunity to select alternative suppliers would be limited to only the largest accounts. BMLD would remain the exclusive supplier for all other customers. This is analogous to the approach taken in Oregon.
3. All Retail Supplier Approach – this approach is similar to the approach implemented in Maine. BMLD would have no role in the power supply, but would remain as a distribution utility. Retail suppliers would provide all power supply.
4. BMLD as Competitive Retail Provider – Municipal utilities in Massachusetts that wish to sell retail power in other jurisdictions must open their own system to retail choice. This is analogous to a system implemented in Texas, where utilities created competitive supply operations when restructuring was implemented, and the Salt River Project case.

While not exhaustive, this set of approaches fairly represents the range of retail choice options from a very limited program to a very ambitious program. The Committee concluded that each of the first three of these options were ones that merited discussion and consideration in this process and have prepared additional discussion of those in the following sections. The Committee ruled out further consideration of the fourth option, as 1) BMLD does not have generation assets or long term contracts for power supply that would support a retail marketing effort; 2) BMLD does not have the current capabilities or systems to successfully operate a competitive retail supply service; and 3) this approach would expose BMLD, and perhaps the Town of Belmont, to additional market and financial risks.

The following sections include additional description and assessment of the first three options.

### 5.3 All Customer Opt Out Approach

Under an “all customer, opt out” approach, all residential, commercial, and industrial customers in Belmont would be granted the opportunity to shop for a retail generation supply provided by a competitive supplier. We describe the approach as an “opt out” model because BMLD would continue to plan and procure a generation supply (which may be termed a “Standard Offer” or “Default” supply) for those customers who do not choose to receive retail generation service from a competitive supplier. All customers would be free to “opt out” of BMLD’s retail generation service (pursuant to certain yet-to-be-defined terms) at their choosing.

Implementation of the “all customer opt out” model would require resolution of a range of important issues, most of which would have implications for the BMLD, the Town, and its customers. Decisions would have to be made regarding:

- the timing of the start of retail choice, particularly, in relation to the 2007 end of BMLD’s current supply contract with Dominion and the timing of BMLD’s efforts to procure supplies for 2008 and beyond;
- whether BMLD would offer a “Default” generation service to customers desiring to continue to receive generation service from BMLD or wishing to return to such service after receiving service from a competitive supplier;
- the design (e.g., fixed vs. variable pricing, load commitments, etc.) and term of the supply portfolio that would support BMLD’s “Default” generation service to retail customers;
- the terms governing when and how customers could depart from and return to BMLD’s “Default” generation service;
- whether any specific transitional provisions will be offered, such as a fixed schedule of “Standard Offer” rates for a limited period;
- how the costs of modifying BMLD’s administrative systems, and the ongoing costs of administering retail choice in the BMLD service territory would be treated.

As noted above, the “all customer, opt out” model is essentially that which has been implemented in Massachusetts for investor-owned utilities.

Based on experience with this model and its application in other Massachusetts locales, we anticipate that, at least for the present, a subset of the overall customer base is likely to engage competitive generation suppliers. Based on experience in other system, the customers that would participate might include:

- the larger customers in the system,
- smaller commercial customers that are affiliated with national entities that might aggregate loads as part of a corporation-based volume purchase strategy,



- individual residential customers who might choose “green” generation products offered by competitive suppliers.

These generalized categories of more likely shoppers does not reflect or represent any specific consideration or expressed intent of individual or groups of customers in Belmont.

### **Benefits**

The “all customer opt out” model of retail choice offers a range of pros and cons. It would offer all customers a ready access to competitive generation suppliers and the improved generation price/product combinations that they might offer. It would maximize the opportunity for all customers to eventually enjoy choice in a range of electricity products. In addition, because it is the approach that has been implemented for each of the investor-owned utilities in Massachusetts, the approach is both well established and well understood in Massachusetts. As such, time and resources can be saved in creating a competitive framework in Belmont that will be familiar to prospective competitive suppliers.

### **Costs and Risks**

The design and implementation of this approach will require substantial cost. The major activities required to implement this approach will include:

- An unbundling of BMLD services and rates
- Development of rules for shopping
- Design of Default or Provider of Last Resort Services (imposing market price and load risks on default generation suppliers can be expected to have a direct effect on the cost of the service)
- Customer communications and education
- Development of billing and information exchange systems and protocols with retail suppliers.
- Customer load information recording and reporting to competitive suppliers and ISO New England for settlement purposes.

Appendix F provides additional information on the design and implementation requirements that Belmont would likely require to pursue this approach.

The “opt out” approach has implications for the cost of the Default supply. Allowing customers to take or opt out of BMLD Default service increases the uncertainty BMLD would have in the amount of load to be served at any point in time. This uncertainty would tend to increase the cost to serve the Default service load relative to the current situation due to the added load risk. This can be mitigated with

rules that govern the notice required to leave or return to BMLD supply or in the pricing offered to returning customers. This cost becomes important if large numbers of BMLD customers remain with the BMLD service and less significant if most customers in Belmont are served by retail suppliers.

In addition to the load uncertainty issue, implementing this option may also jeopardize some or all of BMLD's entitlement to NYPA power and would require the collection of Massachusetts fees for renewable supply and energy efficiency.

This approach will work best only if a major improvement in the number of retail competitive suppliers and products develop in the regional market. Implementation of retail choice in Belmont before that has occurred could diminish the benefits, at least in the near term.

A variation on the "all customer, opt out" model might be a larger scale aggregation. The "all customer, opt out" approach is very similar to the approach many municipalities in Ohio have implemented in aggregating their loads for purchasing what is essentially a favorably-priced "default" generation supply that individual customers can opt out of if they find better alternatives elsewhere. Similarly, in Massachusetts, the communities on the Cape and Islands have formed the Cape Light Compact, which combines their loads in soliciting a cost-effective generation supply. In these aggregations, customers desiring to take advantage of other retail supply options are free to opt out. As an alternative, Belmont could explore participating in a larger scale opt out aggregation with other communities. The advantage in this approach is that of reducing costs through scale economies and leveraging BMLD's buying power by through load aggregation to improve "default" generation supply costs in the retail choice environment. We note that, to the extent that Belmont enjoys competitive advantages and a measure of cost savings attributable to its favorable credit position, these benefits might be diluted by virtue of participation in the larger load aggregation.

## **5.4 Large Customer Opt Out Model**

A second retail choice option for BMLD would be a "large customer, opt-out" model. Under this approach, the option to select a competitive retail supply would be limited to a small number of the larger customers. All small commercial and residential customers would continue to receive a "traditional" generation supply planned and procured by BMLD. As before and at least for a time, BMLD would continue to plan and procure a generation supply for those large customers who do not choose to obtain retail generation service from a competitive supplier.

In many respects, implementation of the "large customer, opt-out" model would require resolution of the same range of issues identified above for the all customer opt out model. The advantage

to this more limited approach would derive from simplification and cost reduction relative to the all customer approach.

The State of Oregon offers the best example of the “large customer, opt-out” model of retail choice. Similarly, the State of Rhode Island implemented retail choice by offering it first to large customers, then extending retail choice to all customers some months later.

### **Benefits**

The “large customer, opt-out” approach would be a more attractive approach than the all customer approach in the situation of a few larger customers having a strong interest in other supplier options while the balance of the community does not. The benefits of this approach, relative to the all customer approach, could include:

- Simplification of the unbundling process, rules for shopping
- Reducing the load uncertainty for BMLD’s procurement of supply
- Reducing the requirements of BMLD for information systems design, implementation, and administration
- Improving prospects for preserving NYPA power entitlements

Several competitive retail suppliers in the market today offer services to this larger customer segment. The prospects for this group of customers to obtain a supplier and have access to products and services tailored to their requirements are better than for residential and small commercial customers.

This large customer approach could also be considered the first step in a phased approach to retail choice. The approach could be modified at some later date if significant retail choice opportunities begin to emerge in terms of the retail generation market for smaller customers.

### **Costs and Risks**

The significant disadvantage of the “large customer, opt-out” approach lies in its segregation of customers. Residential and small business customers might feel that they are being denied attractive opportunities (whether real or imagined) that are being provided to larger interests. If allowing large customers access to competitive supplies results in either existing or new costs being shifted to smaller customers, equity concerns may be exacerbated. Thus, before implementing the “large customer, opt out” model, any issues of equity and cross-subsidies between customer classes should be addressed.

Also important might be the potential financial consequences to BMLD and the Town of Belmont if large volume customers were to choose to no longer receive BMLD's generation service. As is suggested above, any problems of this nature could be exacerbated if BMLD makes financial commitments to provide a "default" generation supply to large customers who subsequently depart in favor of competitive supply options. This effect can be mitigated in the design of the rules for leaving and returning to BMLD supply service and in the pricing of standby service.

## **5.5 All Retail Supplier Approach**

Under the "all retail supplier" approach, BMLD would step away from the retail generation supply function, placing the responsibility to provide a "default" generation supply squarely (i.e., contractually) in the hands of one or more generation suppliers. BMLD would be left with the singular role of operating its distribution system, but for the occasional exercise of (1) designing and implementing a means by which to secure a default generation supplier and (2) specifying the basic design features of the product(s) to be made available by the default generation supplier.

Implementation of the "all retail supplier" model would require resolution of a more limited range of important issues, in the sense that the financial burdens associated with BMLD taking title to generated power would be removed. Nonetheless, decisions still would have to be made regarding:

- the timing of the start of retail choice;
- the price and other terms by which the default generation supplier(s) would be obligated to provide service to customers, including the provisions by which customers could depart from and return to the "default" generation service; and
- how the costs of modifying BMLD's administrative systems, and the ongoing costs of administering retail choice in the BMLD service territory would be treated.

The State of Maine offers a ready example of this approach to retail choice. There, the utilities were legally required to divest of their generation assets leaving them without portfolios from which to provide "default" generation supplies. As a corollary provision, the Maine Public Utility Commission administers competitive solicitations by which competitive suppliers are selected to provide "default" (Maine uses the term "Standard Offer") generation supplies to retail customers of the utilities who have not chosen a competitive supplier. If Belmont were to adopt this form of retail choice, we anticipate that BMLD likely would have to fulfill a role analogous to the Maine PUC's role in administering the procurement of a default generation supply in Maine.

### **Benefits**

The major advantages of the “all retail supplier” model of retail choice lie in the fact that BMLD would be able to minimize its role in planning and procuring a generation supply for its customers. The time and resources that otherwise would be dedicated to these activities be saved.

A second area of benefit to BMLD would be the avoidance of financial costs and substantial risks of selecting and taking title to a generation supply. This reduced risk profile for BMLD also might benefit the Town of Belmont. The selected supplier presumably would be a financially sound provider in with a larger scope and scale in the power markets than BMLD.

In addition, a retail supplier engaged in this way could assume all of the information handling associated with the administration of retail choice. BMLD would not need to be in the position of developing that capability.

### **Costs and Risks**

This approach would offer retail choice functionality to customers similar to the all customer opt out option. The costs to BMLD would be less in this approach, however some of those costs would be incurred by the supplier and would, undoubtedly, be reflected in costs to customers. For example, the load risk associated with the retail choice program would be the same and the resulting cost of Default service would be affected by that.

As in the all customer opt out approach, implementing this option may also jeopardize some or all of BMLD’s entitlement to NYPA power and would require the collection of Massachusetts fees for renewable supply and energy efficiency.

## **5.6 The “Status Quo” Approach**

The attractiveness of retail choice to Belmont is, necessarily, determined relative to the option of not implementing retail choice. To that end, the Committee has considered BMLD’s current approach to supplying a generation service to the Town, and the outlook for continuing in that mode as an alternative to implementing retail choice. For purposes of this study, this is termed the “Status Quo” approach. If Belmont chooses to postpone or avoid retail choice, there are several alternatives to consider.

Over the past decade, BMLD has twice entered all-requirements, multi-year contracts as the primary means by which to ensure a reliable generation supply to customers. BMLD can continue with this approach of periodically turning to the wholesale power market to contract with a supplier to meet its power requirements. Some of the advantages that BMLD has as a buyer in the market include:

1. A strong credit rating (AA) – BMLD’s financial strength enables it to enter into multi-year contracts and to minimize its supply costs.
2. Access to a Range of Products – BMLD’s flexibility to consider short- and long-term contracts is an advantage in the market today. Much of the power bought in New England today is through short term contracts (i.e., of six months to one year duration) supporting Standard Offer or Default Service. The implication for BMLD is that a number of suppliers might wish to contract long-term, and considering the dearth of buyers willing or able to enter into long-term agreements, these suppliers may offer more attractive prices and terms as an inducement.
3. Municipal Exemption – As a municipal utility, BMLD is exempt from collecting fees to support the energy efficiency or renewable energy funds, and from the renewable portfolio requirements.
4. NYPA Power – As a municipal utility serving residential customers, BMLD is entitled to receive an amount of low cost power from NYPA.
5. Load Risk – The customer mix in Belmont has a predicable load characteristic that, when coupled with an exclusive right to serve, reduces the uncertainty that BMLD and its contracted supplier have with respect to the amount of load that is to be served.
6. Procurement Management – The long-term, all-requirements contract approach simplifies the requirements for BMLD to manage the matching of supply to demand.

In addition to these advantages, the Status Quo approach also poses some challenges:

7. Price Continuity – Volatility inherent in wholesale power markets create the potential for the price difference from one longer term contract to the next to be significant.
8. Price Stability – Volatility in the wholesale power market also can lead to a price premium to secure a stable, fixed price contract.

The “Status Quo” approach to supplying the Town of Belmont is very similar to the municipal aggregator model of load aggregation that is being actively pursued in Ohio, New Jersey and elsewhere. BMLD’s role as a buyer on behalf of the entire community is, in fact, an aggregation. The only material distinctions are BMLD’s role as the local utility and the current lack of an “opt out” provision for BMLD’s customers.

Finally, there are alternative approaches that BMLD could pursue, if desired by the Town, to obtain some of the benefits that might otherwise be sought through retail choice. Some of these include:

1. Renewable Portfolio Content – BMLD could, if desired, develop a portfolio standard for the power it buys. Alternately, as is now being done in Rhode Island, BMLD could offer generation service options to customers with varying renewable contents. The new renewable energy credit markets would facilitate these options.
2. Portfolio Management – BMLD could develop alternative purchasing approaches to manage the exposure to volatility, much like investors might pursue a dollar-cost-averaging approach to investing.
3. Alternative Pricing Options – Some pricing provisions that customers might seek from competitive suppliers could possibly be developed and offered by BMLD.

These alternatives are offered as examples. Each of these could potentially impose a level of costs that might make it impractical. However, in considering whether to move to a retail choice option, it is important to focus on the desired benefits and explore alternative ways to accomplish those objectives. If Belmont chooses to adhere to the current approach to obtaining a power supply for its customers, a number of notable benefits, costs and risks may result. These are assessed below.

### **Benefits**

Because competitive retail suppliers in Massachusetts currently are offering relatively few generation service options to residential and small commercial customers, a decision to maintain the status quo – at least until significant numbers of such options do materialize – likely would offer the benefit of minimizing confusion among that set of customers. They also would benefit to the extent that the implementation costs that BMLD would incur to make retail choice possible can be deferred or avoided. BMLD would benefit from maintaining the status quo because the disruption in business activities that would occur if a transition to retail choice were implemented could be avoided. The Town of Belmont may benefit from the status quo if BMLD determines to offer “green” power supplies, or to implement an alternative portfolio standard consistent with preferences determined by Town.

### **Costs and Risks**

If BMLD continues in its current role of procuring power supply on behalf of Belmont electric consumers, it will continue to incur the costs of conducting that role. In addition, BMLD will have exposure to market risk and financial risks.

BMLD obtains nearly all of its supplies by purchasing power from suppliers in the regional wholesale market. In the near term, BMLD has a fixed contract on favorable terms and its costs of power supply are not subject to volatility in the wholesale power markets. However, in the longer-term, the periodic return to the market for additional supplies exposes BMLD and its customers to significant

“market risk”, as future prices will be determined by prices available in the market at the time that additional purchase are made. While wholesale markets have always been variable, New England’s new, competitive market structure may lead to added market risks that were less pronounced when most suppliers were regulated utilities. See Appendix B for additional information on wholesale market issues.

BMLD supply procurement decisions have the potential for adverse results if long-term commitments are made at times when wholesale power market prices are high. Under such conditions, customers faced with higher prices from BMLD may exert considerable pressure to exit BMLD’s generation supply service to access to lower wholesale power prices that might be available if market prices turn down and competitive suppliers are offering lower prices. Circumstances such as these led to calls for retail choice in most of the states that now have retail choice.

Since the collapse of Enron in late 2001, contracting for power supplies in wholesale markets has become increasingly intertwined with financial security. Concerns among all market participants, buyers and sellers, regarding the creditworthiness of its contracting partners in the market has changed the nature of the financial risks in the market. For example, these risks can lead to increased costs, particularly for longer term contracts. See Appendix E for additional information on credit risk issues.

## **5.7 Retail Choice Implementation Issues**

The implementation of retail choice in Belmont will require several significant design and implementation activities. Typically, the more significant of these include:

- Unbundling BMLD rates
- Establishing rules for customers shopping
- Establishing rules for authorizing suppliers to offer services in Belmont
- Establishing a default (provider of last resort) generation service
- Establishing electronic data systems to support billing and account settlement
- Customer communication and education

The implementation of retail choice in Belmont will take some time. A typical design and implementation schedule (from the time a decision is made to proceed with retail choice) would be two to three years. The time required will depend on the complexity of the retail choice option to be implemented and the extent to which new systems are needed. Assuming a decision to proceed by January 2005, the earliest reasonable date to begin offering retail choice (assuming an all customer approach) is likely to be mid to late 2006.



There are significant and potentially costly changes to BMLD's current operations that would need to occur to allow retail choice. Smaller investor-owned utilities have spent as much as \$8 to \$10 million on a range of related tasks. How complex and costly these changes are will vary depending on the form that open access takes. While estimating actual costs specific to Belmont was beyond the scope of this study, a range of estimates was developed by scaling the costs incurred by other utilities. On this basis, full retail choice (i.e., the "all customers, opt out" model) would likely cost Belmont between \$0.5 million and \$1.5 million, assuming a complete replacement of the BMLD billing and customer information system would not be an added cost (assuming it would be relatively easy to modify BMLD's current billing and information system to accommodate retail choice). Before definitive commitments to retail choice are made, a Belmont-specific estimate of the cost to implement would be needed.

Some options exist that could limit the costs of implementation. If Belmont chooses an approach to retail choice that is more limited (e.g., the "large customer, opt out" model), it might be able to avoid or limit some of the implementation costs. For instance, if only the largest customers were offered retail choice, the billing and customer accounting system might need little adjustment, and the customer education effort would be much smaller. Electronic data interchange and other necessary modifications would still probably be costly. Suppliers may be able to perform the load estimation and data provision function, but this will still require that BMLD develop a method to resolve disputes.

Appendix F contains a more detailed presentation on the steps to retail choice, their associated costs, and presents a timeline for implementation.

## **6. Policy Issues For the Town of Belmont**

The future of retail choice and, more generally, the approach to electricity supply in Belmont is ultimately a matter of public policy. An informed policy choice will require consideration of significant economic and technical factors, but will not be dictated solely by such factors. The community's preference for the future of its power supply, and the role of BMLD and competitive suppliers in providing that supply, also will play an important role in the decision to implement retail choice.

With this report, the Committee is inviting public comment and input on the questions of policy that Belmont must address as it considers its options relative to retail choice. The Committee has been asked to conduct a study (contained in this report), hold public hearings, and make recommendations with respect to the future of retail choice in Belmont's electric supply. Prior to making those recommendations, the Committee now seeks comment and input on the preferences of the community.

The preceding sections of this report develop information pertaining to the technical and economic context for consideration of retail choice in Belmont. This section contains the key policy questions identified in the study process. The Committee invites any and all comments, and specifically seeks input on the following questions for its consideration in forming recommendations. Written comments on these policy questions or any other aspect of this report may be submitted to the Belmont Electric Supply Study Committee, at BMLD's offices, by August 15, 2004. Oral comments may be provided at the public hearing to be held in September.

### **1. Should the Town of Belmont pursue retail choice?**

This study began in response to a statutory requirement for the Town to study and consider retail choice, rather than in response to expressed community interest in pursuing this approach to power supply. Any further investigation or implementation of community-wide retail choice should be done only if there is strong interest in the community. The Committee is interested in receiving comments from the community regarding interest in retail choice, including comments on the following:

- i. Is it in the long term interest of the community to offer electric consumers their choice of retail generation suppliers in Belmont?
- ii. Is it in the long term interest of the community for Belmont's municipal utility to secure power supplies on behalf of most or all consumers in the Town?

**2. If Belmont does pursue retail choice, what benefits to the Town or electricity consumers in the Town would be most important to target?**

As is shown in the review of retail choice policies from around the country, retail choice can be used as a mechanism to pursue a range of desired benefits. These desired benefits can include:

- i. Consumers' opportunity to select an alternate supplier of their choice.
- ii. A means by which consumers might achieve lower electricity prices and better control of the prices that they pay for electricity.
- iii. A means to access a range of products and services that are, or will be, available from competitive suppliers.
- iv. A means to access "green" or environmentally preferred supplies and suppliers.

The Committee is interested in receiving comments regarding the types of benefits that would be most important to the community to obtain from retail choice. These comments should also address any benefits that are associated with the current approach that should be preserved in the event that retail choice is pursued.

**3. If Belmont does pursue retail choice, what timeframe should be considered?**

The Committee is interested in receiving comments regarding the preferred timing of the implementation of retail choice, if it is to be pursued. The range of options includes:

- i. Implement retail choice at the earliest practical date. In other words, a process should be established now to design and implement a retail choice program within the next two to three years.
- ii. Plan to implement retail choice when the market for retail generation service in eastern Massachusetts is reasonably well-developed. This approach would initiate a design process now to better position the Town to implement retail choice as soon as competitive suppliers are offering a meaningful number of alternate generation products in adjacent markets.
- iii. Defer further action on retail choice and conduct a follow-up study in a few years. This approach would establish an interest in actively monitoring developments in the retail market and formally revisiting the question once the market is more fully developed.
- iv. Indefinitely postpone a move toward retail choice. This approach would establish the community's intent to continue with the current municipal utility approach to providing power supply to the entire community for the foreseeable future.

**4. If Belmont chooses to implement retail choice, what approach should be pursued?**

The Committee is interested in receiving comments regarding the preferred approach to retail choice if it is to be pursued. Section 5 of this report describes three alternative models:

- i. All Customer Opt Out Approach.
- ii. Large Customer Opt Out Approach.
- iii. All Retail Supplier Approach.

As noted above, these are not the only approaches that could be considered. Comments need not be limited to these three models, but may suggest other approaches that may be of interest.

**5. If Belmont does not pursue retail choice, are there alternative power supply approaches or services, to be provided by BMLD, that would be of interest?**

The Committee's study process is primarily intended to collect public comment on retail choice issues and preferences. However, it is also an opportunity to collect public comment on power supply issues more generally. If retail choice is not pursued, the primary alternative is to have BMLD continue to act on behalf of the community to secure power supplies.

The Committee is interested in receiving any comments regarding the BMLD's current power supply services and on alternative services or approaches to power supply that BMLD should consider, including:

- i. Should BMLD continue to seek longer-term, stable pricing arrangements, shorter-term pricing that seeks lower near term electricity rates (the choices here are analogous to a choice between shorter term adjustable rate and longer-term fixed rate mortgages), or a mix of both? Is price stability preferred, even if it comes at a somewhat higher cost?
- ii. Should BMLD secure a significant portion of the power supply from renewable sources, even if it comes at a somewhat higher cost than conventional supplies?
- iii. Should BMLD offer additional energy supply services, such as time-of-use pricing, energy efficiency, or renewable supply options that can be selected by individual consumers in Belmont?
- iv. What role should demand-side management and conservation have in Belmont's future electricity supply approach?

# **Retail Choice Study**

**Issues and Options for Electric Generation Service:**

**A Report for Public Comment**



**Appendices**

## Appendix A

### Bibliography of Retail Choice Reports, Studies and Articles

#### A Massachusetts Focus

*Guide to Municipal Electric Aggregation in Massachusetts*, Division of Energy Resources, January 2003.

*Market Monitor 2000, A Report by the Division of Energy Resources*, An Annual Report to the Great and General Court on the Status of Restructured Electricity Markets in Massachusetts, February 2002.

*Massachusetts Electric Restructuring: Beyond the Standard Offer, Mass Market Development Policies Culled From Other Markets' Experiences*, Prepared by Plexus Research, Inc. for the Massachusetts Division of Energy Resources, November 14, 2003.

*2003 Electric Power Customer Migration Data for December '03*, Published by the Division of Energy Resources, Data Added February 5, 2004.

#### Specific To Other States

*Evaluation of a Competitive Power Market for Residential Consumers, Report to the 72<sup>nd</sup> Legislative Assembly*, Oregon Public Utility Commission, December 2002.

*Ohio Regulators Report to Legislature Claiming Ohio's Market is Among the Best: Credits Community Choice Aggregation as Key to Making Ohio's Electricity Market Successful*, Paul Fenn, Local Power News, Copyright 2003.

*Ohio Retail Electric Choice Programs Report of Market Activity, 2001-2002*, Public Utilities Commission of Ohio, May 2003.

*October 2003 Report Card on Competition*, Public Utility Commission of Texas

*Stakeholders' Views on Competition: From Transition to the End State*, New York Public Service Commission, undated.

#### General

*An Analysis of Opt-Out Aggregation in Massachusetts and Ohio*, Matthew H. Brown, September 2002.

*An Analysis of Residential Energy Markets in Georgia, Massachusetts, Ohio, New York and Texas*, Barbara Alexander, September 2002.

*Can Competition Replace Regulation for Small Utility Customers?*, R. Green, Centre for Economic Policy Research, March 2000.

*The California Electricity Crisis: Lessons For Other States*, Eric Hirst, (prepared for the Edison Electric Institute), July 2001.

*Competitive Retail Power Markets Advance Rapidly in 2003, Surpass 50,000 Megawatt Mark*, PR Newswire, January 29, 2004.

*The Difficult Transition to Competitive Electricity Markets in the U.S.*, Paul L. Joskow, AEI-Brookings Joint Center For Regulatory Studies, July 2003.

*The Effect of Price on Residential Customer Choice in Competitive Retail Energy Markets: Evidence From Specific Markets To Date*, Kenneth Train, Anne Selting, National Economic Research Associates (prepared for the Edison Electric Institute), March 2000.

*Electricity Retail Energy Deregulation Index 2003, Addendum, Details for Jurisdictions in the United States, Canada, New Zealand, and portions of Australia and the United Kingdom*, Center for the Advancement of Energy Markets, April 2003.

*Municipal Aggregation: The Alternative to Surging Energy Prices*, Seema M. Singh, Director, New Jersey Division of Ratepayer Advocate, New Jersey Municipalities, February, 2004.

*Retailing Residential Electricity: A Concept That Makes Sense?*, Cairine MacDonald, EPCOR Executive in Residence, School of Business, University of Alberta, July 2003.

*Why Do We Need Electricity Retailers? Or Can You Get It Cheaper Wholesale?*, Paul L. Joskow, MIT Department of Economics, Sloan School of Management, and Center for Energy and Environmental Policy Research, February 13, 2000, A "Revised Discussion Draft" provided on Professor Joskow's website.

*Why We Need Electricity Retailers: A Reply To Joskow On Wholesale Spot Price Pass-Through*, Stephen C. Littlechild, August 22, 2000.

*2003 Performance Review of Electric Power Markets*, Kenneth Rose, Institute of Public Utilities, Michigan State University (under contract with the Virginia State Corporation Commission), August 29, 2003.

## Appendix B

### The Restructuring of New England's Wholesale Power Market

New England's wholesale power market have been subject to substantial restructuring in recent years and in parallel with the changes to retail electricity markets that have been implemented in many states. This wholesale market is integral to the operations of all retail suppliers in the region, including competitive retail suppliers, utilities serving as providers of last resort, and utilities such as Belmont Municipal Light Department ("BMLD") that serve customers in exclusive franchise areas. Through their effects on retail suppliers, changes to the wholesale market impact all consumers of electricity in the region.

New England is served by a single, integrated wholesale power market that comprises spot markets for electric energy, capacity and ancillary services. The wholesale market currently is operated by ISO New England, an independent operator of the regional transmission system and administrator of the region's spot power markets. ISO New England was formed in 1998 as part of the Federal Energy Regulatory Commission's ("FERC") efforts to establish competitive wholesale market rules and regional transmission organizations ("RTOs") to administer wholesale power markets. Over the past six years, significant changes have included the establishment of open access transmission tariffs and the implementation of new market rules and mechanisms intended to expand competition in wholesale markets.

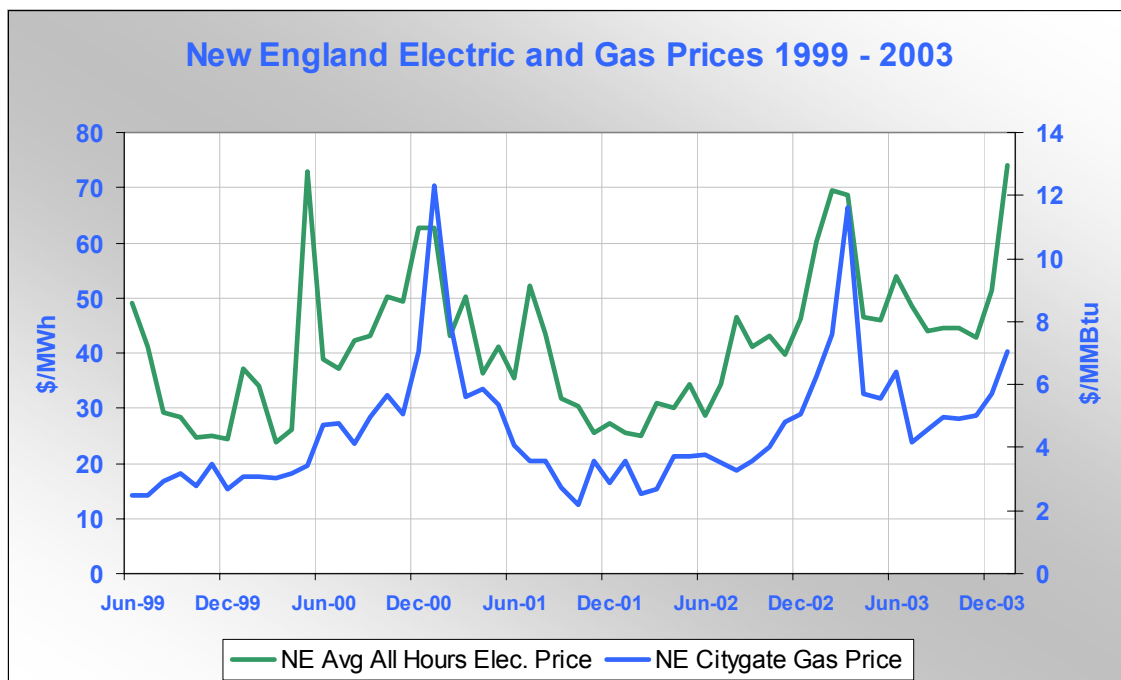
ISO New England is currently establishing a location-based pricing that will cause prices within the region to vary based upon the generation and transmission costs to serve load in specific locations. The BMLD system is located within ISO New England's Northeast Massachusetts ("NEMA") pricing zone. As long as NEMA remains designated as a congested zone, which is ISO New England's current designation, BMLD's power supply costs will be increased to some degree because of transmission congestion. Currently, BMLD is paying some costs for transmission congestion, and proposed market changes will probably increase those costs further.

In addition to the changes in market rules and administration, there has been a substantial change in market participants. The New England states' broad adoption of a divestiture approach to retail choice has resulted in the transfer of a substantial majority of the generation in the region to competitive generation companies. Further, the changes in both wholesale and retail markets initiated during the period 1996 through 1998 attracted substantial investment in new generation projects. Since that time, nearly 10,000 megawatts of new generating capacity has been built in New England by competitive generation companies, representing about one third of the total peak requirements of the region, resulting in a surplus of capacity that has enhanced reliability and reduced power prices to consumers. However, nearly all of this new generation is fueled by natural gas, making the region substantially more reliant on natural gas for its electric supply.



ISO New England administers the “spot” market for wholesale electricity in the region, which includes only power bought and sold within a day or two of actual usage.<sup>1</sup> This market has experienced notable volatility in its first years of operation, much of which is to be expected in a competitive spot market for power. Figure B presents the monthly average price results from the ISO New England spot market since mid-1999 along with the corresponding market price for natural gas in the region. This figure illustrates the relationship between volatility in natural gas prices and electric prices.

**Figure B**



New England wholesale power markets are currently working reasonably well, by most competitive measures and in contrast to the problems encountered in Western markets.<sup>2</sup> However, further

<sup>1</sup> ISO New England’s spot market clearing prices reflect the cost of balancing supply and demand after accounting for “bilateral” contracts that buyers and sellers occasionally enter, such as BMLD’s current contract with Dominion.

<sup>2</sup> Other US regional wholesale markets have had significant problems. The extraordinary run-up in prices in wholesale power markets in the West during 2000 and 2001 is well-chronicled. California’s retail choice program was undone because of extreme problems in its wholesale market system. Some very substantial utility buyers (for example, Pacific Gas and Electric, Nevada Power, Southern California Edison) in those markets suffered large losses. Major suppliers were found to have manipulated market prices. More limited market problems have occurred in other markets, as well.

changes in New England's wholesale power markets are to be implemented by ISO New England to improve the overall effectiveness of the market.

Regional reliability issues will merit close attention as the current surplus of generating supplies is absorbed by load growth and generating unit retirements. At the present time, few new generation projects are under development.

Credit and financial issues have substantially changed the environment for competitive generation companies and wholesale power trading companies over the past two years. The collapse of Enron in late 2001, the corporate financial crises of WorldCom and others, and the ensuing bankruptcy of several major national generating companies have substantially changed national power markets. This affects New England directly as financial markets are national and because several of the bankrupt generating companies own significant generation in New England. While the worst of the financial crisis appears to be over, the financial distress experienced by the industry and the lessons learned from the crisis are expected to substantially limit the ability of generating companies to finance and build new generation in the near future. In addition, both buyers and sellers of wholesale power now place much greater emphasis on the credit quality of their trading partners.

These wholesale market issues have a very direct bearing on the ability for competitive retail suppliers to expand into New England and on the pace at which that expansion can occur. The issues will also have a direct bearing in BMLD and other existing buyers in the wholesale markets.

It is also noteworthy that ISO New England administers the Generation Information System ("GIS"). The GIS provides the basis for tracking the attributes of power generated in the region, such as pollutant emissions characteristics and renewable power characteristics. This system allows each state to implement a verifiable renewable portfolio standards (or "RPS") and enables a market for renewable energy credits ("RECs"). The REC market makes it easier for retail competitive suppliers and buyers (such as BMLD) to secure a renewable component to their supply portfolio without direct involvement in a renewable energy project.

## Appendix C

### Competitive Suppliers of Retail Generation Service in Massachusetts

Below is a table that identifies competitive generation suppliers currently doing business in Massachusetts. It also distinguishes suppliers from brokers (who would not take title to the electricity in transactions that they arrange for customers) and indicates which suppliers are offering products to residential customers.

Supplier	Supplier/Broker	Sell to Residential?
Affiliated Power Purchasers	Broker	N
APS Energy	Broker	N
American Powernet	Broker	N
Axess Group	Broker	N
Bay State Consultants	Broker	N
Better Cost Control	Broker	N
Chamber Energy Coalition, Inc.	Broker	N
Competitive Energy Services - Mass., LLC	Broker	N
Constellation New Energy	Supplier	N
Dominion	Supplier	Yes
Energy Rebate	Broker	N
Global Companies, LLC	Broker	N
James Devaney Fuel Co.	Broker	N
Market Direct Energy	Broker	N
Mirant Americas Energy Marketing LP	Supplier	N
Northeast Energy Partners	Broker	N
Patriot Energy Group, Inc.	Broker	N
Power Management Co. New England, LLC	Marketer	N
Select Energy	Supplier	N
Sempra Energy Solutions, Inc.	Supplier	N
SourceOne	Broker	N
Strategic Energy, LLC	Supplier	N
Supreme Energy LLC	Broker	N
Tractebel Energy Services Inc.	Supplier	N
TransCanada Power Marketing, Ltd.	Supplier	N
U Source	Broker	N
World Energy Solutions	Marketer	N

## Appendix D

### Examples in Retail Choice

This Appendix provides additional details on three topics relevant to BMLD and retail choice: (1) public power and retail choice; (2) aggregation by geography and by affinity group; and (3) green power programs.

#### I. Public Power And Retail Choice

The Pasadena Water and Power Department (“PWP”) opened its service territory to retail competition in generation services, joining the investor-owned utilities in the broader restructuring of California’s power markets. PWP officials recently reported that no customers have been lost to competitive generation suppliers since that time. This could be the result of a number of factors, including the crisis that resulted from California’s transition to competitive power markets. At present, PWP offers a green power program to its customers; it recently signed a long-term agreement to buy a six megawatt share in the High Winds generation facility in Solano County in Northern California. In addition to the High Winds contract, PWP buys renewable energy from hydroelectric facilities in Azusa and at Hoover Dam.

The Salt River Project (“SRP”) represents a large public power entity that opened its service territory to retail competition beginning on January 1, 1999. SRP provides electricity service to 820,000 customers in the Phoenix (Arizona) metropolitan area. In March 2004 it announced that it is adding geothermal energy to the resource mix of its EarthWise Energy green power product. Under a five-year agreement, SRP will purchase 25 MW of geothermal power from plants operating in California's Imperial Valley, which will provide enough power to meet the annual electricity needs of 3,500 residential customers. Currently, more than 4,500 SRP residential customers participate in the green pricing program, through which they purchase 100-kilowatthour blocks of renewable energy for an additional \$3.00 per month or 3 cents per kilowatthour (“kWh”).

The Lansing Board of Water and Light (“LBWL”) has considered joining Michigan’s investor-owned utilities in implementing retail choice. In February 1998 LBWL’s Board of Commissioners adopted a set of fundamental principles for utility restructuring. Before deciding whether to participate in retail choice, LBWL determined to closely monitor Michigan's restructured retail markets to see if they satisfy the following principles:

- Support competition that encourages the maximum number of competitors and protects the rights of communities to form their own utilities;
- The safety, integrity and reliability of the electrical system must be preserved;

- The new industry structure must not tolerate market dominance by a limited number of competitors; and
- The Michigan electric utility industry must maintain or enhance environmental performance.

## **II. Aggregation**

### **Geographic Aggregation: Cape Light Compact Pilot**

The Cape Light Compact administers a “Municipal Aggregation default service pilot project,” as approved by the Massachusetts Department of Telecommunications and Energy through December 31, 2004. The Cape Light Compact has negotiated an electricity supply agreement with Mirant Corporation for consumers receiving NSTAR Electric Default Service in all 21 Cape Cod and Martha’s Vineyard towns. Under the current agreement, Mirant prices generation to all Cape Light customers at 5.751 cents per kWh. NSTAR’s bills for generation service to Cape Light Customers reflect savings from Mirant’s price relative to the price of NSTAR’s default service price.

Retail functions are provided by a combination of Cape Light (e.g., customer service) and NSTAR (e.g., billing for distribution, generation and other services). All 45,000 NSTAR default service customers in Cape and Vineyard towns are eligible to participate. Those who wish to opt-out and remain on NSTAR’s default service must return a signed "opt-out" card. Note that the Cape Light Compact acts as broker, aggregating retail customers and arranging for them to receive a generation supply. It does not take title to the power, thus it does not have to satisfy substantial financial performance assurance requirements that generation suppliers are increasingly imposing on wholesale power purchasers.

### **Affinity Group Aggregation**

In contrast to Cape Light, which aggregates customers in a geographic area, many customers in retail choice markets may choose to join some type of buying group to reduce their electricity costs through bulk purchasing by the group. The Massachusetts Health and Educational Facilities Authority (“HEFA”), through its wholly owned non-profit affiliate, PowerOptions Inc., sponsors an energy group purchasing consortium. PowerOptions Inc. administers the consortium and has negotiated master agreements with energy suppliers to provide members access to electricity (and natural gas supply and services) at predetermined prices and terms. HEFA claims that, over the first five years of PowerOptions contracts (March 1998 to March 2003), members have saved over \$100 million. Select Energy, which recently has been chosen to provide power supplies through March 2007, offers fixed pricing for smaller (monthly metered) accounts. Larger accounts (interval hourly metered accounts, generally rate G3 or T2) are priced to reflect both market conditions and the pattern of usage. We note that PowerOptions is launching a new green power supply program that aggregates the loads of non-profit and public entities. The new effort is funded in large part from a grant awarded by the Massachusetts Renewable Energy Trust.

There is increasing evidence of businesses in retail access states aggregating their loads to reduce their electricity supply costs. The president of the Maryland Retailers Association asserts that electricity costs are the second-largest operational expense for most businesses. The Mid-Atlantic Aggregation Group Independent Consortium has been encouraging members of various business groups in that region (representing 6,200 Maryland businesses, for example) to join its electricity buyers’ aggregation. Most who have joined are small to medium-sized businesses that hope to do better than the soon to be deregulated (but as-yet unspecified) rates of the local utility. MAAGIC recently contracted with Strategic Energy to provide a power supply to businesses participating in the aggregation. Strategic Energy is a Pittsburgh-based electricity supplier that offers customers a range of market-based energy services. For a management fee, Strategic Energy buys wholesale power under long-term contracts for direct delivery to retail customers who have signed long-term contracts. The company currently is marketing its energy management and supply services to customers in nine retail choice states, including Massachusetts. We note that it also targets “national” retailers in its promotional literature.

In a similar vein, about 400 public school districts in New Jersey (representing approximately two-thirds of all school districts in the State) have aggregated to reduce power supply costs. A December, 2003 press release indicates that the New Jersey School Board Association conducted a competitive solicitation to serve the aggregated load. It was won by South Jersey Energy, a New Jersey-based energy management company and the State’s largest energy marketer. The School Board expects to save “nearly \$5.9 million over 19 months.”

Six Texas Medical Center institutions joined together to form an aggregation group that collectively purchases electricity and thus has more leverage to bargain. The Texas Medical Center

Electric Aggregation Group was formed in the fall of 2001, and includes Baylor College of Medicine, Texas Children's Hospital, the Texas Medical Center, Texas Medical Center Central Heating and Cooling Services Cooperative Association, known as TECO, the Texas Medical Center Laundry Cooperative Association and TIRR Systems. They claim to have cut their collective electricity costs by 25 percent, or \$4.6 million last year, through the aggregation. The Texas Public Utility Commission maintains a list of aggregated loads that includes various groups of residential, commercial and industrial customers; municipalities; state agencies; educational institutions; churches; the Texas Hospital Association; McDonald's Corporation; etc.

There is mounting evidence that the major supermarket chains are also purchasing their electricity on an aggregated basis from retail generation suppliers. Supermarkets are the most electricity intensive of commercial buildings. Given the narrow margins of the business, they have powerful incentives to seek ways to cut power costs. Shaws, for instance, has a record of purchasing electricity from competitive suppliers. The company's 52 Shaws locations in Massachusetts and its Rhode Island Shaws stores were recently covered under a multi-year contract with Connecticut-based Select Energy Inc. Its 36 Star Markets in Massachusetts also have engaged in aggregated power supply procurements.

### **III. Green Energy Programs**

Green energy programs offer opportunities for customers and customer groups to acquire energy from renewable and other environmentally benign energy sources.

#### **Green Energy Programs In Retail Choice Markets**

The City of Cuyahoga Falls recently announced a "partnership" with American National Power and Green Mountain Energy Company in a new "green" pricing program. Green Mountain will provide 100 percent renewable energy to meet the requirements of customers that elect to participate in the program. Beginning in March 2004, customers were able to sign up to purchase a wind and hydropower option for an additional cost of 1.3 cents per kWh. The Cuyahoga Falls program is part of an ongoing program under the auspices of Hometown Connections, a subsidiary of the American Public Power Association, to develop customized green pricing options by which public utilities can offer a Nature's Energy brand of renewable electricity to their customers.

In the last several years, colleges and universities around the country have begun to support "green" energy either through direct purchases or through purchases of green certificates. Unity College in Maine, for example, claims a 100 percent renewable electric supply, achieved through purchases from retail energy suppliers marketing renewable power supplies. Similarly, over thirty Pennsylvania colleges and universities have committed to purchase wind-generated electricity from mid-Atlantic wind farms.

Pepco Energy Services, Inc. announced last summer a partnership with Community Energy, Inc. to supply an aggregation of New Jersey state agencies with Green-e certified wind-generated electricity. Under the 33-month agreement, Pepco Energy Services will supply the agencies with 54.9 million kWh or 20.6 megawatts of wind energy generated from wind farms in the mid-Atlantic region. More than 90 percent of the wind power could come from the 20-MW Bear Creek wind farm to be constructed near Wilkes-Barre, Pennsylvania, less than 60 miles from northern New Jersey. The renewable energy will supply nearly 180 New Jersey accounts beginning July 2003 including State of New Jersey Departments and entities such as Rutgers University, New Jersey Highway Authority, New Jersey Transit and the New Jersey Turnpike Authority. The agencies entered into the agreement in part to meet the 10 percent environmentally friendly green power purchase goal established by New Jersey's Governor. The public agencies joined together for the purpose of creating one electricity contract to obtain lower-cost Green-E certified electricity.

### **Green Energy Programs in Regulated Markets**

Retail choice is not a requirement for green energy programs. Traditional, regulated utilities can also offer green energy programs to their franchise customers. For example, the Washington Electric Cooperative ("WEC"), a small utility in Vermont, adopted a long-term power supply strategy focused on acquiring cost-effective renewable power for a significant portion of its supply requirements. A La Capra Associates study revealed that WEC's access to below-market public power financing, together with its ability and willingness to sign long-term power agreements, provided WEC with an opportunity to develop its own renewable supply portfolio at a cost competitive with or below other more conventional power supply options (e.g., a slice of a natural gas plant, forward contracts, etc.). WEC is now actively developing a 4 megawatt landfill gas generator in Vermont, and plans to participate in the coming years in the development of a Vermont-based wind project. As a result of newsletter marketing and public meetings over the last few years, its customers recognize and are very supportive of the environmental benefits of renewable power, due in no small part to the fact that WEC will be providing them stably-priced green power at or below market cost for the next 20 to 30 years. It is anticipated that, by 2008, WEC's power supply portfolio will be almost entirely renewable, save for a small amount of imbalance energy purchases and peaking requirements.

Various other non-retail choice distribution companies have also offered green energy programs, either by developing renewable projects themselves, or by partnering with third-party companies.



## **Appendix E**

### **Financial Performance Assurance in the Electric Power Industry**

This Appendix discusses the emergence of credit requirements and financial performance assurance issues as significant challenges for both buyers and sellers of power supplies in wholesale electricity markets.

#### **Why is contract financial performance assurance an issue?**

Prior to the advent of restructuring in the late 1990's, the electric industry was a relatively docile place. Vertically integrated utilities planned and assembled supply portfolios to meet their customers' needs. By and large, they were allowed to recover through rates the costs of owning and operating the generating plants included in those portfolios. Power purchase/sale transactions between utilities were undertaken regularly on an as-needed basis. However, for most large utilities these transactions did not represent a large portion of the power supply. Power purchase/sale transactions with retail customers (i.e., those outside of established rate schedules) were limited to special contracts with key industrial customers. Wherever generation purchase/sale contracts were executed, they were cost-based and thus varied little from the cost of competing options. In this environment, bankruptcies were a rarity. Power deals held, even when their pricing terms turned out well above or below market prices during the contract term.

The restructuring of power markets has dramatically affected wholesale power markets. Competitive pressures have imposed very thin profit margins on generation suppliers, and how those generators have managed (or mismanaged) their fuel supply and market price risk has become a determinant of their overall financial strength. Prices in power markets have proven far more volatile than those of other commodities, in part because of the lack of cost-effective options for storing electricity and because of volatility in the price of fuels used in power production. Hourly prices in New England's power markets have varied considerably (e.g., from 5 cents to \$10 per kWh) across a very few hours. Prices also have moved significantly for extended periods of time. It is these longer-term movements in wholesale market prices that can lead to very large financial exposures to power buyers and sellers because of the substantial sales volumes often involved. By way of example, consider a municipal utility with an average load of 15 megawatts that contracts for a three-year supply from a generation supplier at 5 cents per kilowatthour. If wholesale market prices subsequently increase by 1 cent per kilowatthour soon after the contract is signed, a failure by the generation supplier that delivers the power at the contract

price could cost the municipal utility as much as \$4 million in incremental replacement power costs if the failure occurs early in the three-year contract term.<sup>3</sup>

The new wholesale market is a risky place. The market has witnessed bankruptcies of some electricity buyers. These include utilities such as California's PG&E with large stranded cost obligations and/or above-market contracts executed to cover substantial short energy positions. Bankruptcies have also included nationally-known generation suppliers such as NRG and Mirant. In addition, some gas-fired generators are struggling to remain solvent in a New England market that, at least temporarily, does not offer revenues sufficient to cover their all-in costs of operation (including coverage of debt obligations). In recent years, failures of generators have resulted in millions of dollars in losses (or, at least, substantial financial risk) for shareholders and buyers that were not adequately protected.<sup>4</sup>

The resultant market shakeout has caused a decline in the number of generation suppliers available to power purchasers, and has reduced the liquidity of various wholesale market products. These factors combine to make more challenging for buyers to secure the power supplies they need. It is possible that the generation suppliers that have successfully weathered the turmoil to date are financially stable, but buyers are well advised to proceed cautiously. Moreover, the remaining generation suppliers likely are those that are more cautious in securing their financial position as they enter into new power purchase/sale contracts. As a consequence, credit and performance assurance requirements have become a key focal point in power contract negotiations.

### **To whom do performance assurance requirements apply?**

Performance risk affects both buyers and sellers in power purchase/sale transactions. The example provided above focuses on financial risk to a municipal utility under conditions of rising wholesale market prices. Risks of similar magnitude affect generation suppliers. To continue the example from above, if market prices were to fall by 1 cent per kWh (i.e., from 5 cents to 4 cents per kWh) just after the contract is signed and the buyer is unable or unwilling to fulfill contractual commitments, the generation supplier may have to sell at the lower market price. In such case, the supplier's revenues may likewise fall by as much as \$4 million.

Changing market prices thus represent a substantial risk to both sides of every power purchase/sale transaction. A generation supplier whose customer is unable to meet its contractual purchase obligations could be forced to sell in a depressed market. A power purchaser whose generation

---

<sup>3</sup> An average load of 15 MWs equals 15,000 kW. When that figure is multiplied by 8,760 hours per year times three years, the total energy requirements (i.e., kWhs) across the term of the contract is almost 400 million kWhs. The \$4 million cost estimate is the product of 400 million kWhs and the 1 cent per kWh market price increase that the buyer would have to pay to replace the failed contract.

<sup>4</sup> Examples of New England power purchasers that have encountered difficulties with suppliers include VPPSA, Unitil, and CL&P.

supplier is unable to fulfill its contractual delivery obligations could be forced to make purchases at prices above the contractual rate. Either scenario can bring financial hardship, thus both sellers and buyers have powerful incentives to ensure that the other has the necessary financial strength or backing to comply with contractual obligations.

While there is a certain symmetry in the risk that movements in power market prices can impose on buyers and sellers, generation suppliers alone are exposed to a second type of risk associated with contract payment terms. Power purchase/sale contracts typically require buyers to make payment for supplies delivered during the course of a given month some time (e.g., 15 days) after the end of that month. A generation supplier is therefore at risk to the extent that a buyer may not make payment on energy purchases until about 45 days after the energy is delivered. Returning to the example of a 5 cent per kilowatthour contract price and average demand at 15 megawatts, the generation supplier's financial exposure from this "DSO" (days service outstanding) risk could exceed \$800,000. Contract negotiations typically also address the risk associated with this delay between product delivery and product payment (i.e., whether the supplier has sufficient working capital to absorb this cost).

### **What types of security? How large are required commitments?**

In the current power market, every power purchase/sale transaction brings different perceived risks and matches buyers and sellers with different levels of financial strength. Because each transaction is unique in this regard, each transaction typically entails ad hoc negotiations of credit and performance assurance requirements. Ultimately, a range of credit instruments are available to contracting parties. Where a trading partner (either buyer or seller) can be shown to be financially sound and well capitalized in relation to the level of risk implicit in a given transaction, contractual provisions requiring the trading partner to maintain its financial standing (e.g., an investment grade credit rating) may be a sufficient protection against non-performance. This approach would tend to be suitable for very large, financially healthy generation suppliers making relatively small power sales commitments. It also might apply to financially sound utilities that have a ready ability to adjust their rates if necessary to support increased costs. This approach represents a relatively low cost approach to assuring performance, but it does not provide explicit financial protection in the unlikely event that the financial position of the trading partner is weakened.

Other approaches to guaranteeing financial performance exist that bring increasing costs (and/or operating constraints) to the entity offering the guarantee. A power purchaser or seller with a larger, demonstrably financially sound affiliate can obtain a guarantee directly from the affiliate. Alternately, a letter of credit from a bank or other creditworthy institution can be obtained when credit quality of the contracting party and/or affiliate remain an issue. Finally, a contracting party may be asked to fund an account (by way of lump sum deposit and/or ongoing contributions) that would pass to the counterparty in conditions of contract nonperformance.

There is a range of options from which to establish a guarantee appropriate to a given power purchase/sales transaction. A more challenging issue lies in the question of what dollar level of guarantee is necessary to reasonably mitigate risks. Here, experience and expertise in power markets and counterparty financial evaluations is essential. Financial performance guarantees are increasingly achieved through mechanisms that react to changing levels of financial performance risk on an ongoing basis. That is, financial security requirements may change as market prices (particularly, established indicators of prices in forward markets) move above or below a contractually set bandwidth. When market prices track higher than a given contract's price creating financial risk to a power purchaser, the generation supplier may be obligated to set aside financial security in amounts that increase proportionally. Conversely, when market prices track lower than a given contract's price creating financial risk to the generation supplier, a power purchaser may incur a similar obligation.

Because long-term contracts bring increased financial risk, they are increasingly rare in today's power market.

### **What are the implications for BMLD?**

A focus on contract performance assurance is likely into the future. If BMLD continues to purchase power supplies, it is certain that generation suppliers will ask it to take steps to provide a measure of certainty that their financial exposure will be limited. This would apply whether BMLD remains in its current mode as buyer for all of the Town's customers, or if it implements retail access but chooses to provide some form of "standard offer" or "default" generation supply.

BMLD is an established buyer with a healthy financial situation. As such, it can expect to enjoy a strong position in negotiating financial performance guarantees for contract power supplies. We note that BMLD recently obtained a AA credit rating, the first time BMLD was required by a seller to establish a rating distinct from the Town of Belmont. Its current supply contract with Dominion includes favorable price and credit terms, reflecting BMLD's strong financial position. If BMLD remains a buyer of generation supplies, there will be continuing value in maintaining a solid financial position.

For its part, BMLD will want to take steps to limit its financial exposure to potential nonperformance of power suppliers. In such instance, BMLD should strive to maintain its ability to effectively assess the financial strength of potential generation suppliers, to accurately assess contract risks, and to negotiate the terms of power purchase/sale agreements accordingly. Where risks are difficult to quantify, mitigation measures can include diversifying suppliers, assessing the supplier's generation portfolio to ensure adequate and reliable generation to back up commitments, limiting the term of fixed-price contract supplies, and potentially establishing ownership rights in a physical generation resource.

## **Appendix F**

### **Retail Choice Implementation Issues**

#### **I. Introduction**

Should BMLD decide to pursue retail choice, its decision will impact both itself and several constituencies who interact with it, including customers, suppliers, and the independent operator of the region's bulk power system, ISO New England. In this document, we describe Belmont's current situation and the effects that a move to implement retail choice would have on Belmont's operations and costs to administer retail choice in its service territory.

#### **II. Current Situation**

Belmont bills most customers on the basis of metered information that measures how much energy customers use from one month to the next. Larger customers also have a "demand" meter that reads the single highest usage in the meter reading month. Because not all meters are read at the end of the month, meter data does not indicate exactly what was used during a particular month. The Belmont billing system produces a bill for each customer based on current rates. The total energy received by the Belmont system is read by meters at several points of entry to the system. These meters read and record usage at hourly and even shorter intervals and this information is conveyed electronically to the ISO New England. This is the basis on which the ISO bills Belmont for transmission and Belmont's power supplier, Dominion, for services associated with generation supply. The ISO bills depend on detailed interval data from Belmont's electronic interval metering, because various prices vary by hour. Belmont's bill from Dominion combines Dominion's charges with ISO charges (including the "congestion charges" that reflect the fact that transmission into the greater Boston area is limited, which increases Belmont's supply costs.)

#### **III. Changes Affecting Customers**

In order to offer retail access, Belmont would have to educate customers about the new opportunity and also establish a number of new rules and procedures. This would require a customer education effort and a number of actions in advance of the start date for retail choice. BELD must make important decisions about shopping rules (such as whether (1) BMLD will bill customers for all electric services, i.e., including generation service provided by competitive suppliers, (2) competitive suppliers will be allowed bill customers for all electric service, i.e., including those provided by BMLD, or (3) customers will receive one bill from Belmont and one from their chosen competitive supplier). BMLD will also have to make important decisions regarding whether and how it will provide a default generation service.

These decisions will impact on other tasks, such as how Belmont's billing and accounting (or customer information) system needs to be modified. Belmont's rates must be unbundled so that generation is priced separately from other services. If all customers are offered retail choice, Belmont's customer information system must be able to account for generation separately from delivery service, and must be able to provide data to the competitive suppliers to enable them to track their generation service customers' usage. This may require replacing the existing customer information system, or it may be possible to reprogram the existing system.

#### **IV. Changes Affecting Competitive Suppliers And ISO New England**

If retail choice is adopted, Belmont's role as a purchaser of generation service may also change fairly drastically.

There are certain tasks that must be undertaken to provide the same conditions for competitive suppliers as they are accustomed to in serving customers in the investor-owned utilities' service territories. As noted above, BMLD currently receives power supply services from Dominion Energy through a contract that ends on December 31, 2007. Given this existing contract, BMLD must either:

- 1) time the start of retail choice to coincide with the end of its current supply contracts, such that retail choice would begin on January 1, 2007,
- 2) compute a stranded cost mechanism to recover cost obligations to Dominion that might result from retail choice, if it begins sooner, or
- 3) procure additional power supply for some period after 2007 if the start of retail choice is targeted for some time beyond the beginning of 2008.

Once retail choice is in place, the amount of power that BMLD will need to purchase will change. If most customers choose to receive generation service from alternate competitive suppliers, BMLD's responsibility for managing a power supply portfolio for its customers would phase out. However, in any retail choice program, some customers do not wish to receive electricity supply from a competitive supplier, or need a back-up supply on an occasional basis. Consequently, a default or provider of last resort ("POLR") generation service offered by the utility can be a key component of the retail choice program. The POLR supplier could be BMLD or a supplier selected by BMLD to provide electricity service to any customer that is not served by a competitive retail supplier for whatever reason.

Belmont also should consider what type of POLR generation service it would offer. If it made no provision to acquire generation service for this purpose, it could expect to be billed by ISO New England for generation used by customers who do not have a supplier (the power will flow to such customers unless and until BMLD physically disconnects them from its system). BMLD should have a clear view of what it wants by way of a generation supply when it initiates POLR supply acquisition processes.

ISO New England requires each supplier that provides generation service to retail customers (they are often called “load serving entities”) to provide electronic interval data regarding what its customers have used in each hour (and perhaps smaller time intervals). Load serving entities are also required to provide ISO New England with a projection of the hourly loads for the next day. Currently, Dominion performs this function for BMLD. If more than one supplier were delivering energy to Belmont, the ISO would need to know how much was being supplied by each supplier, and also would need a projection loads for each load serving entity for the following day. This is very complicated, because most customers do not have meters that provide that information. Thus, someone must estimate what each customer is using on an hourly basis and accumulate that information to reflect different suppliers’ responsibilities. This is a crucial step, because of the aforementioned variance in hourly prices. If each customer choosing retail access had an electronic interval meter, then this data could simply be accumulated by supplier. However, as a matter of practice only large customers have installed interval metering, because electronic meters are very expensive. It may be possible to have this load estimation performed entirely by suppliers, but in this case BMLD will need to establish methods to resolve potential disputes between suppliers about their load responsibilities. It is also necessary to have electronic data interchange capability to communicate with ISO New England and with competitive suppliers, and to provide the ISO with the detailed hourly projection of the loads of customers served by different suppliers. There are a number of other tasks that would need to be undertaken if Belmont wishes to be consistent with what competitive suppliers face elsewhere in the state. If Belmont offers a different environment to suppliers, they may not wish to offer service in Belmont.

## **V. Summary Of Implementation Steps**

Below we present an outline of the steps that BMLD would take to implement retail competition in its service area:

1. Customer education
  - BMLD would inform customers of the availability of retail access through various means, probably including bill stuffers, open meetings, and other media.
2. Unbundle rates to expose generation charges, other costs avoidable by generation shoppers.
  - BMLD would need to “unbundle” existing rates to ensure that it would recover all delivery service costs even if customers chose alternative generation suppliers.
  - Transmission charges, in a manner consistent with the approach applied by the Massachusetts IOUs.



3. Establish a clear set of rules for shopping in Belmont, such as:
  - When service transfer requests can be made and will be implemented;
  - What happens when supplier does not perform;
  - What happens when customer does not pay or does not pay full bill.
  - Those rules should largely mirror rules that have been implemented by the DTE.
4. Establish a default (Provider of Last Resort or POLR) service.
  - BMLD would define the terms by which a POLR service would be made available to customers who do not shop, lose service from a Competitive Supplier, etc.
  - BMLD needs to determine its objectives for POLR service (stability, price, green supply, other.)
  - BMLD needs to establish process to acquire supply.
5. Provide customers with a list of Suppliers.
  - BMLD would periodically identify Competitive Suppliers and make such information available to customers (via bill inserts, website, etc.).
6. Provide appropriate historical usage information for customer choice.
  - BMLD would publish and provide to customers and Competitive Suppliers historical usage data, similar that required by the Department of Telecommunications and Energy.
7. Render bills to customers.
  - BMLD would issue bills for distribution service, and for BMLD POLR generation service, and on behalf of Competitive Suppliers seeking such service for their generation customers.
  - BMLD could allow Competitive Suppliers to issue separate bills for generation.
  - BMLD accounting and billing systems would have to be modified to accomplish this more sophisticated set of transactions.
  - BMLD customer service people can expect more confusion and complaints as a result of this more complex billing paradigm.



8. Maintain records of required data related to current customer and supplier services.
  - BMLD would implement the standards, technologies and services adopted in Massachusetts for defining transaction sets and transport mechanisms.
  - BMLD would implement the electronic systems necessary to accommodate transactions with Competitive Suppliers. Required transactions would include those related to (a) account administration (i.e., enroll customers, change enrollment details, identify successful enrollments, identify moved customers, identify errors, identify when customer drops supplier, identify when supplier drops customer, and confirm drop date), (b) usage and billing (i.e., the transfer of customer usage information and billing information), (c) customer payments and related adjustments, and (d) settlement.
  - BMLD would need to establish electronic provision of data to ISO New England.
9. Provide Competitive Suppliers with billing and usage data.
  - BMLD would accumulate and provide to Competitive Suppliers customer billing and usage data using established Electronic Business Transaction standards (see Item 4, above).
10. Provide Competitive Suppliers with payment information and funds collected under “complete billing options.”
  - BMLD would accumulate and provide to Competitive Suppliers customer payment information using established Electronic Business Transaction standards (see Item 4, above).
  - BMLD would accumulate and transfer funds to Competitive Suppliers where BMLD bills on their behalf for generation services provided.
11. Bill Competitive Suppliers applicable fees.
  - BMLD would bill Competitive Suppliers for services provided to them, in keeping with DTE protocols.
12. Perform daily and monthly aggregate load estimates for each Competitive Supplier and report estimates to ISO New England.
  - BMLD must maintain hourly load profiles to apply to competitive and BMLD loads for each customer class, by day-type, etc.

- BMLD would accumulate and provide to ISO New England customer load estimates for each Competitive supplier using established communications standards (see Item 4, above).
13. Identify a business contact and a technical contact person to facilitate interbusiness communications.
  14. Maintain an Internet web site, containing various standard documents, available for access by trading partners (e.g., tariffs, class average load shapes, scheduled cycle meter-read dates, relevant computer operations schedule, etc.).
  15. Monitor ISO rules addressing transmission rules and charges.
  16. Establish mechanisms for resolving disputes (e.g., between Competitive Suppliers with different views of BMLD's rules).

## VI. Potential Costs To Implement

The table below shows the approximate level of costs that have been incurred by other relatively small investor-owned utilities in implementing retail choice. Although BMLD is smaller than these utilities, these costs are likely to be fairly representative. We have estimated what costs to revise its billing system might be, not including the full cost of a new billing system.

Activity	Small IOU cost	BMLD estimate
Customer Education	\$1,000,000	\$30,000
Modify bill print systems	\$2,000,000	\$10,000
Account administration systems	\$1,200,000	\$50,000
Rates, billing & other systems & training	\$1,700,000	\$100,000
New collection & accounting systems	\$1,500,000	\$50,000
Special metering requirements	\$ 500,000	\$0
Load profiling & settlement systems	\$ 600,000	\$100,000
Electronic Data Interchange	\$ 400,000	\$100,000
Other, training	\$ 400,000	\$ 50,000

## VII. Sample Implementation Timeline

A sample timeline for implementing retail choice is provided below.

<u>Time</u>	<u>Event</u>
Day 1	BMLD decision to implement retail access for all customers.
3 Months	BMLD publishes market rules defining retail competition for generation services in its service area.
20 Months	BMLD begins customer notice and education processes.  BMLD completes revision of its customer information systems (i.e., billing and accounting systems).  BMLD issues RFP for default service generation supply to all customers
22 Months	BMLD signs a contract for a default service generation supply to all customers.  BMLD publishes rules and systems for competitive transactions for its service territory.
24 Months	Retail choice begins for all customers.

## VIII. Implementation Costs

These are significant and sometimes costly changes to Belmont's current operations that will need to occur to allow open access. Small utilities have spent \$8 to \$10 million on these tasks. How complex and costly these changes would be will vary depending on the form that retail choice takes. We would expect that to allow full retail access would cost Belmont between \$0.5 and \$1.5 million. This does not include a complete replacement of the billing and customer information system, since we understand that the current system is likely to be updated or replaced in the near future. It would be relatively simple to design a new system to accommodate retail access. We also assume that suppliers perform the load estimation function.

If Belmont chooses a model of retail access that is more limited than full retail access, it might be able to avoid or simplify some of the steps described above. For instance, if only the largest customers were offered retail access, the billing and customer accounting system might need little adjustment, and the customer education effort would be much smaller. Electronic data interchange and other necessary modifications would probably still be costly. Suppliers may be able to perform the load estimation and data provision function for ISO New England, but this will still require that BMLD develop a method to resolve disputes.

## Appendix G

### Glossary of Terms

<b>Aggregation</b>	In retail choice markets, the process of forming a collaborative power supply buying organization to secure a retail power supply for electric consumers participating in the collaboration.
<b>BMLD</b>	Belmont Municipal Light Department.
<b>BESSC</b>	Belmont Electricity Supply Study Committee.
<b>Competitive Supplier</b>	A energy supply company that offers power supply service to wholesale or retail buyers of power at market-based prices. Wholesale competitive suppliers obtain authority to sell at market prices from FERC. Retail competitive suppliers obtain authority to sell at market rates from state regulatory authorities (the DTE in Massachusetts).
<b>Creditworthiness</b>	The measure of the financial capability of a buyer or seller of power relative to the magnitude of the financial commitments made in a power contract.
<b>Default Service</b>	In Massachusetts, a generation service offered by the regulated investor-owned utilities since March 1998 as a provider of last resort service to customers not eligible for Standard Offer service and not taking service from a competitive retail supplier.
<b>Divestiture</b>	In the context of retail choice, the process by which investor-owned utilities in Massachusetts and in much of New England sold (divested) their generating assets to competitive wholesale power companies.
<b>Dominion</b>	An investor-owned electric and gas company with regulated and unregulated businesses, including Dominion Energy Marketing which is the current wholesale generation supplier to BMLD.
<b>Electronic Data Interchange</b>	In the context of retail choice, EDI is a set of data protocols for business interactions between competitive retail suppliers, distribution utilities, other market participants, and the regional market administrator.

<b>FERC</b>	Federal Energy Regulatory Commission is the federal regulatory agency with regulatory authority pertaining to wholesale power markets, regional transmission organizations, and transmission pricing.
<b>Generation Information System</b>	GIS – a New England regional system, administered by the New England ISO, which tracks a range of attributes of power generated in the region, including renewable content and environmental performance characteristics.
<b>Generation Service</b>	The electric energy (as measured in kilowatthours, or “kWh”) delivered to the point of consumption. The generation is produced at power generation facilities and moved along high voltage transmission lines (i.e., “transmission service”), then lower voltage distribution lines (i.e., “distribution service”) to end-use consumers.
<b>Green Supplies</b>	A term referring to renewable and environmentally benign power supplies.
<b>MA DOER</b>	Massachusetts Division of Energy Resources, a state agency of the Commonwealth of Massachusetts responsible for energy planning and policy.
<b>MA DTE</b>	Massachusetts Department of Telecommunications and Energy (MA DTE), a state agency of the Commonwealth of Massachusetts responsible for regulation of telecommunications and energy utilities.
<b>Market Rates</b>	Pricing of electric supplies based on competitive market pricing (in contrast to regulated rates based on cost). Also termed market-based rates.
<b>Municipal Aggregation</b>	In retail choice markets, the process whereby municipal governments form a power supply buying organization to secure a retail power supply for electric consumers in the municipality. A municipal aggregation need not be a municipal utility.
<b>MW</b>	Megawatt – a term referring to power capacity or demand, the instantaneous ability for power production (generation) or consumption (demand). 1 MW = 1,000 kilowatts (kW) = 1 million watts.
<b>MWH</b>	Megawatt-hour – a term referring to an amount of electrical energy produced or consumed. 1 MWH = 1 MW operated for 1 hour. 1 MWH = 1,000 kilowatt-hours (kWh).

<b>New York Power Authority</b>	NYPA – A state-owned generation and transmission organization providing power to public power systems in New York and New England.
<b>Non-utility entities</b>	Competitive wholesale are retail power generating and supply companies.
<b>NSTAR</b>	An investor-owned electric and gas utility serving communities portions of eastern Massachusetts. The company was formed in the merger of Boston Edison Company and Commonwealth Electric System.
<b>Opt-Out</b>	A term referring to a form of aggregation in which all consumers in the aggregation group are included until a specific election to leave the aggregation for supply from a competitive supplier is made.
<b>POLR</b>	See “Provider of Last Resort”
<b>Provider of Last Resort</b>	In a retail choice system, the provider of last resort is a generation service provider that stands ready to offer a supply in the event that an electric consumer does not have another supplier.
<b>Public Utilities Commission</b>	PUC – a common title for the state regulatory body that oversees regulated utilities. In Massachusetts, this regulatory entity is call the Department of Telecommunications and Energy (MA DTE).
<b>Renewable Portfolio System</b>	RPS – a system requiring retail generation suppliers to include a specified minimum percentage of renewable supplies in their overall supply portfolio.
<b>Renewable Supplies</b>	In Massachusetts, a renewable energy generating source is one which generates electricity using any of the following: (i) solar photovoltaic or solar thermal electric energy; (ii) wind energy; (iii) ocean thermal, wave, or tidal energy; (iv) fuel cells utilizing renewable fuels; (v) landfill gas; (vi) waste-to-energy which is a component of conventional municipal solid waste plant technology in commercial use; (vii) naturally flowing water and hydroelectric; and (viii) low-emission, advanced biomass power conversion technologies, such as gasification using such biomass fuels as wood, agricultural, or food wastes, energy crops, biogas, biodiesel, or organic refuse-derived fuel.

<b>Retail Choice</b>	An electric market system that allows retail electric consumers the option to select among competitive suppliers of retail power supply services.
<b>Retail Competition</b>	An electric market structure that allows unregulated power supply companies to compete for service to retail electric consumers at prices determined by market competition.
<b>Retail Open Access</b>	A utility regulatory structure in which competitive suppliers and retail consumers have access to the electric distribution system to arrange for the transfer of power supplies.
<b>Retail Market</b>	A retail power market includes power supply services provided to ultimate consumers of electricity.
<b>Risk Management</b>	In power supply, the process of developing strategies and methods to reduce exposure to market price volatility, to credit and financial problems, and to regulatory changes that can affect the cost or availability of the power supply.
<b>Shopping Rates</b>	In a retail choice market, the percentage of customers that have elected to take service from a competitive retail supplier.
<b>Standard Offer</b>	In Massachusetts, a generation service offered by the regulated investor-owned utilities during the March 1998 to February 2005 retail choice transition period to all customers of record in March 1998. More generically, standard offer is a term used to refer to the basic service available to consumers in retail choice systems that do not choose a competitive retail supply.
<b>Stranded Costs</b>	In the context of a transition from a regulated retail electric service to a competitive retail electric service, stranded cost refers to the difference between the market value of a regulated utility's power supply assets (generation facilities and contracts) and the unrecovered cost of those assets. The stranded costs are those costs that could not be recovered at market rates.
<b>Supply Portfolio</b>	The mix of power supply sources held by a wholesale or retail power supply company.
<b>Systems Benefits Charge</b>	A term referring to fees assessed on the electric bill to fund renewable energy, energy efficiency, and low income assistance programs.

<b>Time of Use Pricing</b>	A pricing option for electric service in which distinct prices are set for specified time periods to offer prices that better correlate to the variations in market prices by time of day, day of the week, or season of the year.
<b>Transition Period</b>	A term referring the period of time established in a state's retail competition statutes to allow for a transition from regulation to fully retail competition.
<b>Unbundled</b>	In the implementation of retail choice, a term referring to the separation of the competitive generation service component of retail electric service from the transmission and distribution components.
<b>Volatility</b>	In power markets, the degree of variability in market prices over time.
<b>Wholesale Market</b>	A term referring to the production and bulk transfer of power supply and the associated transactions among wholesale market participants.



## Appendix H

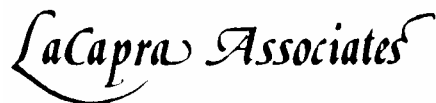
### About La Capra Associates

La Capra Associates, Inc. is a Boston-based consulting firm specializing in planning, market analysis, and regulatory policy in the electricity and natural gas industries.

La Capra Associates' experience blends broad, national experience in the implementation of retail choice with practical local experience advising small utilities and market participants in the New England market. The firm has substantial knowledge of all facets of retail choice, including regulatory policy, rate design and unbundling, provider of last resort service design, and functional separation issues. Project examples include La Capra Associates' comprehensive study of the benefits and costs of moving Arkansas to retail open access for the Arkansas Public Service Commission Staff; in Ohio, Pennsylvania, and New Jersey, analyses of stranded costs and rate unbundling in restructuring proceedings; and in the West, reviews of power procurement programs of large buyers in California, Nevada, and Wyoming.

La Capra Associates has extensive experience with the New England wholesale and retail markets. We have advised public agencies throughout the restructuring process in Massachusetts, in proceedings on Default Service design, and in the design of the Renewable Portfolio Standard system. The firm also serves utility clients and large institutional buyers in New England with market studies and assistance with planning and power transactions in the ISO New England market.

For additional information:



20 Winthrop Square  
Boston, MA 02110  
Phone: (617) 367-6500  
Fax: (617) 951-0528  
Website: [www.lacapra.com](http://www.lacapra.com)