

Appendix D-2

Energy Plan 2004-2013 Follow-up Studies and Reports

D-2



Appendix D-2.a

Energy Plan 2004-2013 Follow-up Studies and Reports

Wholesale / Retail Competition Study





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Wholesale and Retail Competition for Electricity on Long Island

Prepared for the
Long Island Power Authority

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INTRODUCTION

This report was commissioned by the Long Island Power Authority as a result of their LIPA Energy Plan 2004-2013. The report addresses the development of competition in the wholesale and retail markets for electricity on Long Island and in New York State. LIPA supports the development of competitive markets for electricity to the extent that such markets provide more choices for consumers, more economic use of resources, and a fairer allocation of costs and benefits among market participants.

The report is organized into separate sections for:

- Competition in the wholesale electricity markets in New York.
- Competitive procurement of generation and transmission resources.
- Development of competitive retail markets on Long Island.
- Limits to the Development of Competitive Retail Markets

The report recognizes that LIPA is only one of many market participants in the New York Independent System Operator (NYISO), and that the development of statewide rules often has a direct application to the Long Island Region (Zone K). The report also recognizes that LIPA is the dominant Load Serving Entity (LSE) on Long Island, the Provider of Last Resort (POLR) for generation service in Zone K (excluding the customers served by three municipalities: Freeport; Rockville Centre and Greenport) and the monopoly provider of delivery service (transmission and distribution) to all of the customers within its service territory.

LIPA has promoted competition in both the wholesale and retail markets on Long Island. LIPA's pursuit of competition takes on several characteristics:

- Sponsoring rules within the NYISO that allow more generators to offer generation service.
- Encouraging improvements in the NYISO administrative processes to ensure that the least cost alternative among competing suppliers is more frequently selected by the NYISO.
- Soliciting generation from a number of competing suppliers to meet its future requirements for incremental power.
- Creating more choices for retail customers to supply their energy requirements (including self generation), and allowing competing suppliers to craft

different packages of products and services so that customers enjoy a greater variety of choices.

The overall view of competition described in this report is that making more and different choices available in wholesale and retail market enhances competition, and makes it more likely that buyers will be able to find the best combination of price and service to meet their needs.

There are limitations on the degree of competition in the retail markets that result from market imperfections that cannot be ignored or assumed away. LIPA's policy is to minimize cross subsidies among and between customers. This policy discourages subsidies such as enrollment bounties and transferring costs and risks of customer receivables (bad debt) to non-participating customers. This policy tends to diminish the number of Energy Service Companies (ESCOs) willing to participate in the retail choice program. Also, the current characteristics of the locational capacity market on Long Island do not create a competitive situation, which limits LIPA's ability to fully open the retail generation markets to competition. LIPA continues to provide all of the local installed capacity (LICAP) to retail customers in its service territory, since no wholesale generation suppliers have stepped in to build generation without a firm Purchased Power Agreement with LIPA.

NEW YORK – AN INCREASINGLY COMPETITIVE WHOLESALE MARKET

New York has become an increasingly competitive market for wholesale energy transactions and LIPA has been a strong advocate of open regional markets. LIPA continues to advocate aggressively for market structures that promote efficient and competitive markets. LIPA has promoted numerous initiatives aimed at increasing the competitiveness of markets. Some of the initiatives that LIPA has supported since the inception of the NYISO include the following:

- Creating an Independent System Operator
- Adopting Locational Marginal Pricing
- Improving dispatch in real time markets
- Promoting virtual bidding
- Monitoring for market power abuses
- Resolving interregional energy market issues related to pricing differences, product definitions, and improved transaction scheduling
- Emphasizing deliverability of installed capacity
- Establishing Unforced Deliverability Rights
- Improving the Installed Capacity demand curve
- Resolving interregional capacity market issues
- Managing capacity de-listing
- Defining external market deliverability rights
- Establishing locational capacity markets
- Awarding rights for transmission expansion
- Negotiating Interregional transmission issues such as implementing external proxy buses and arranging scheduling protocols and limitations
- Raising and resolving comparability issues such as implementing generic proxy buses for new interties, payment for voltage support services for merchant transmission, and establishing transmission as reserve supplier

These initiatives have created an increasingly competitive market as measured by a variety of metrics: the number of generator bidders has increased, the number of market participants has increased, and the inflation adjusted costs associated with committing and dispatching units out of merit has decreased. While no one measure can definitively define competitiveness, taken together, these metrics point to an increasingly competitive market.

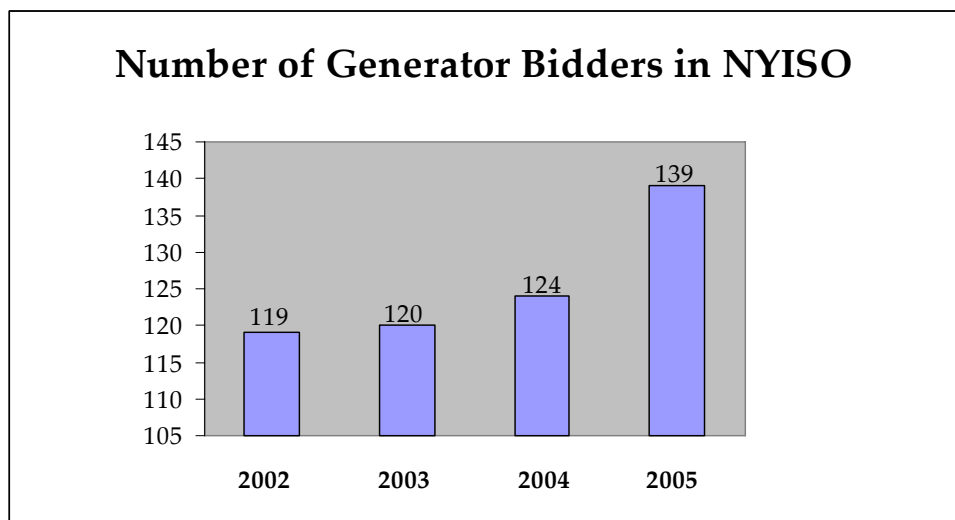
The NYISO Commitment and Dispatch Process

The NYISO uses a centralized, security-constrained, dispatch process to select the resources that minimize the cost of reliably serving load. In an on-going competitive process the NYISO energy market selects those generators or other resources that offer deliverable power at the lowest prices to serve the load. In its day-ahead and real time unit commitment process, NYISO also selects certain generators to operate at minimum loading. This assures that enough operating but unused capacity is available to meet anticipated and actual peak daily loads. This highly competitive process selects both a day-ahead unit commitment and hourly dispatch schedule and a minute-by-minute real time commitment and dispatch on the basis of price and other operational parameters.

Number of Registered Bidders

One measure of the robustness of competition in the NY market is the number of generation bidders that offer power into the market; it indicates the degree of choice among wholesale suppliers. The number of generator bidders sampled in November of each year is shown in Figure 1. The number of bidders has increased from 119 in November 2002 to 139 in November 2005.

Figure 1

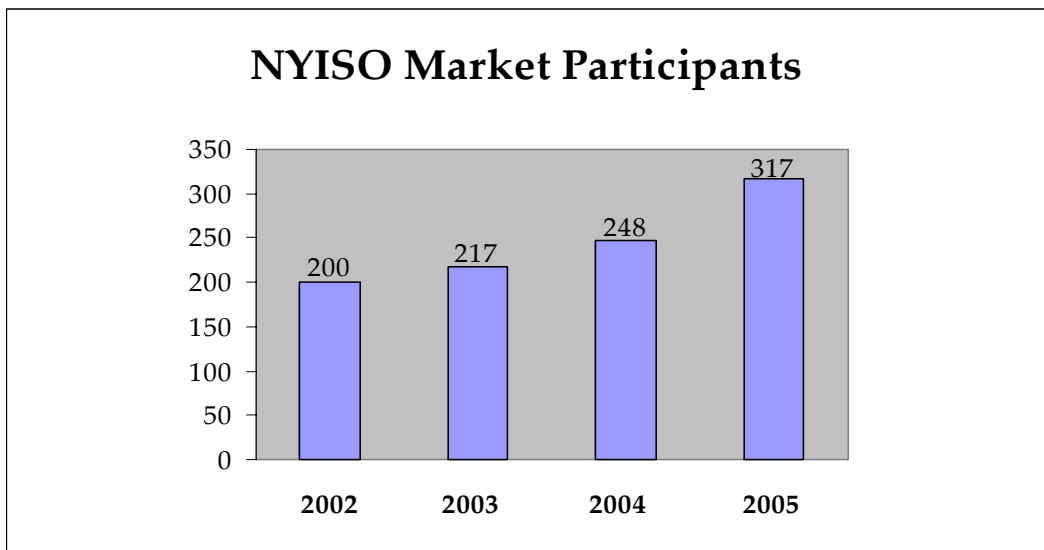


Source: NYISO Masked Generator Bidder IDs – November sampling

Number of NYISO Market Participants

The number of participants in the NYISO market is also increasing, as shown in Figure 2. Market participants include buyers, sellers, brokers, and energy traders. The number of market participants has increased over time. This reflects increasing robustness as trading entities, demand resource providers, LSEs, and generator entities enter the market. Market participants have increased from 200 in 2002 to 317 in 2005.

Figure 2

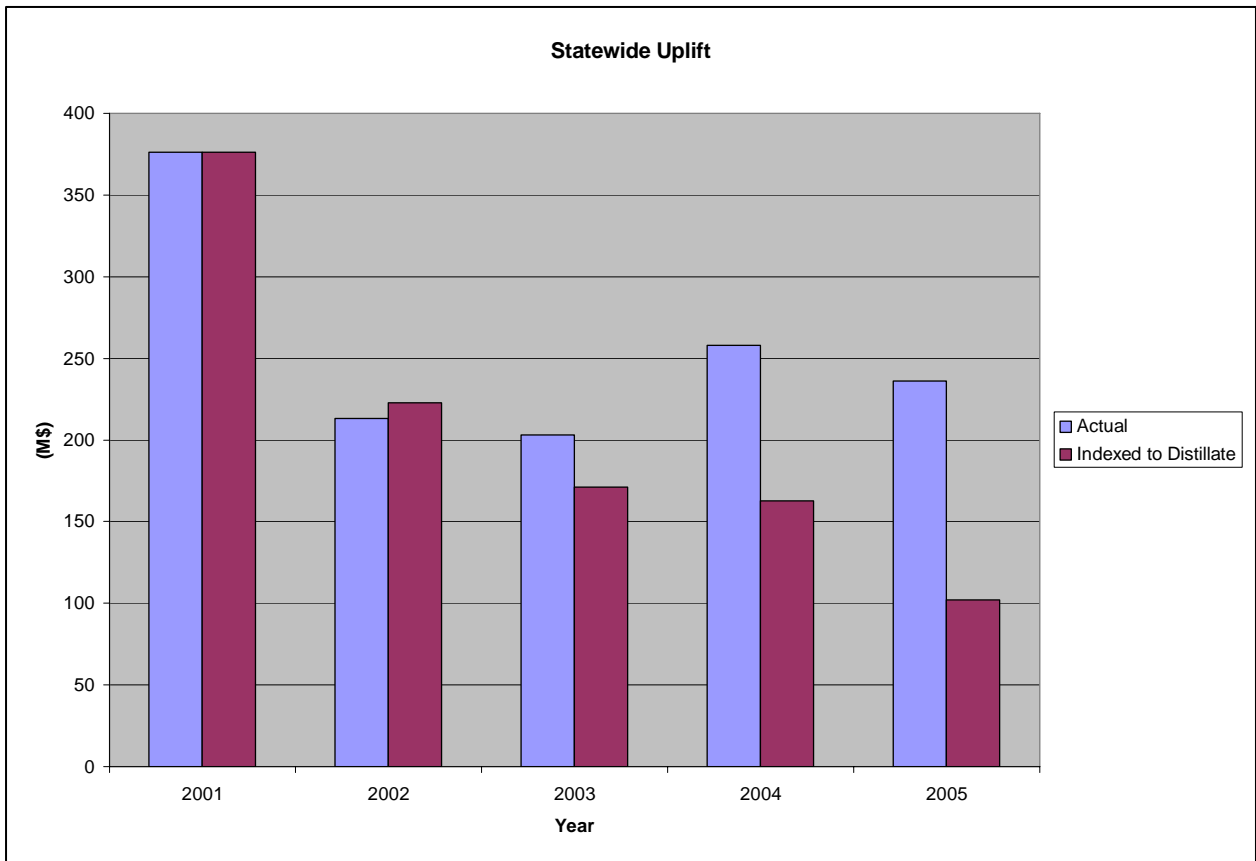


Source: NYISO annual reports

Statewide Uplift

Statewide uplift includes the costs of committing and dispatching generation resources (out of merit order) to assure reliability and is usually a small share of overall market revenues. Statewide uplift from 2001 to 2005 is shown in Figure 3, both before and after adjusting for the cost of distillate. Changes in statewide uplift as adjusted for the price of distillate measure how much a market reduces inefficient or uncompetitive outcomes. Significant reductions have occurred in the commitment and dispatch of out of merit resources since 2001, and improvement in NYISO market commitment and dispatch have contributed to these reductions.

Figure 3



While unadjusted uplift costs show both reductions and increases, fuel costs have increased significantly in the later years and have driven an increase in these costs. Indexing the uplift costs to the price of distillate separates the effects of these increases in fuel costs from systematic improvements in the efficiency of unit commitment and dispatch. Indexed to 2001 fuel prices, Figure 2 indicates that the quantity and cost of resources dispatched or committed out of merit would have decreased if fuel priced had not increased. Without these systematic market improvements, uplift costs would have been significantly higher.

Competitive Market Structure Initiatives

In addition to opening the LIPA system to wholesale competition in the energy and capacity markets, LIPA has been a strong advocate of open regional markets. LIPA continues to advocate aggressively for market structures that promote efficient and competitive markets. For example, having an increased number of bidders and a

higher quality of bidders furthers competition. Market rules that select the most cost effective resources in daily and minute by minute dispatch promote competition. While efficient markets select lowest cost resources based on participant offers, there have been times when inefficiencies in existing market structures have prevented competitive outcomes and have prevented lower cost resources from being selected to provide service.

The regional transmission system and the rules for the use of that system create a market in which a greater variety of generating resources can compete to provide service. Yet, at times, adding transmission itself can be a competitive alternative to providing service from higher cost local resources. This can be especially important during periods when transmission bottlenecks limit the quantity of inexpensive power that a local area can import from remote regions. LIPA has worked proactively to reduce transmission bottlenecks and to promote market rules that allow comparable transmission and generation solutions to compete to provide the lowest cost service.

In the Northeast, electricity markets are organized geographically with separate markets for New England (ISO-NE), New York (NYISO) and the Pennsylvania, Jersey and Maryland region (PJM). PJM has expanded recently to include some customers in Delaware, Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, Virginia, West Virginia and the District of Columbia. Long Island is geographically adjacent to these three major electricity markets and LIPA has expanded its transmission capabilities to facilitate transactions in all three markets.

Separate regional markets allow the ISOs to process a manageable number of transactions. Although many transactions cross the regional borders between these markets, separate markets also create economic inefficiencies in moving power from one region to the next. These cross-boundary inefficiencies are collectively known as "seams" issues. Fundamental differences in market rules and market structures in each market greatly exacerbate these seam issues. Because of its geographic location and because of its existing and planned transmission connections to the rest of New York, New England, and New Jersey, LIPA is especially sensitive to seams issues and continually advocates positions aimed at improving the efficient of cross boundary trade within each ISO and at the Federal Energy Regulatory Commission (FERC).

Energy Market Initiatives

LIPA has supported initiatives at the NYISO to improve the efficiency and competitiveness of energy markets, and LIPA continues to promote these and other ongoing market improvement initiatives. Some of these initiatives include the implementation of more efficient software for real time unit commitment and dispatch, shortening transaction lead time, and improving error detection for remote telemetry. LIPA also supported early initiatives designed to allow market participants to reduce differences between forward and real-time market prices through virtual bidding. Finally, LIPA continues to support market monitoring, where dedicated NYISO staff monitor markets for abuses in market power.

New York has an 'advance' energy market, where market participants sell expected energy supplies and buy for expected energy demand on the day before the energy is provided or required. This Day-Ahead Market (DAM) is where most supply offers and demand bids are matched. However, since neither demand nor supply act exactly as planned as generators go out of service or load is higher or lower than expected, NYISO also has a Real Time (RT) market where it settles differences between the quantity of actual supply and of actual demand and the quantities for which market participants made day-ahead commitments.

LIPA has supported a number of initiatives aimed at improving the efficiency of unit commitment and dispatch in the real time markets. Some of these worked to reduce structural differences in prices between DAM and RT markets. Structural differences between these markets can create the need to inefficiently change unit commitment and dispatch away from a more cost effective dispatch. For example, in rare instances where neither load nor generation availability changes from the day ahead projections, structural differences can cause the need to change the locations where generators are dispatched.

Improving Real Time (RT) Dispatch

LIPA supported a recent change in the RT market: implementing the Real Time Scheduling (RTS) system at NYISO. NYISO upgraded the legacy software for the RT market that had been used since before NYISO began operation. This upgrade, implemented in February 2005, allowed a reduced lead time for transactions, the ability to commit fast start combustion turbines and other fast start resources on 15 minute notice, a treatment of losses that was consistent with the DAM, and the co-optimization of energy and operating reserves also consistent with the DAM. This

new software reduced the need to commit uneconomic units and reduced associated local charges or 'uplift'.

Committing uneconomic units hurts competition by locking out more competitive alternatives. Previously, units had to be committed in 1-hour increments. During the commitment period, certain economic units were not dispatched. The new software shortened the look-ahead period, allowed units to be committed every 15-minutes, and reduced the costs of committing generators. Shortening the look-ahead for committing generators means that relatively expensive units that would have been started for reliability reasons can be started later and the costs of operating those units can be reduced. In a similar way, changes that were made to reduce transaction lead time allowed transactions to more appropriately and economically respond to up-to-the-minute changes in system conditions.

The new RT software also improved the simulation of losses. Improvements in the simulation of losses assure that least cost resources are used to serve the real-time load and the losses associated with that load. These changes improve competition by allowing the most competitive units to be committed and dispatched by reducing instances where non-competitive units must be committed or dispatched due to simulation limitations rather than real world operating limitations.

LIPA also supports changes being implemented by the NYISO to correct telemetric metering errors before they impact market prices. Previously, telemetric metering used to assess real time load and generation was fed directly into RT market software. There had been a potential for the software to misinterpret metering failures as generation outages and to incorrectly and expensively commit and dispatch resources for an outage that had not really occurred. This created uncompetitive outcomes as the software committed less competitive units and instructed more competitive units to reduce their dispatch. By using redundant metering and data filtering to distinguish metering failures from generation outages, this problem is being corrected.

Addressing Regional Market Seams

Regionally, there are a number of seams issues that create inefficiencies in the inter-regional trade in energy. LIPA continues to provide leadership to keep focus on these seams issue and continues to support efforts to resolve these seams issues. Issues include inefficient pricing dislocations, disparities in the timing of market clos-

ing, and issues associated with verifying interregional transactions or ‘transaction check-out’.

Each market calculates prices separately; they each calculate a price at each location based on the supply and demand bids made within their footprint plus those made at certain locations at their boundaries (known as “external proxy busses” or “external market nodes”). These external nodes are usually one or more key points within the neighboring market. The prices at these key points that are calculated in one market do not match the prices that are calculated in the other market for the same point. Thus, external pricing does not follow internal locational marginal pricing practices that allow a consistent pricing method to be applied to locations inside a market footprint. Lacking consistent prices, the markets cannot select economically efficient quantities of inter-ISO transactions.

While individual market participants can either gain or lose from these price dislocations, these price dislocations cause economically inefficient amounts of power to be exported from or imported into a market. These pricing signals can cause a higher priced internal power source to serve load when lower price external power is available. LIPA is addressing these issues by working to improve a variety of transmission and seams-related market rules described later in this document.

Transmission out-service charges are another source of inefficiency in interregional trade. These out-service charges act as an export toll and reduce the economy of interregional trade. These charges form a barrier to trade and reduce or prevent transactions that would otherwise be economic. They skew competition between similarly priced resources located on either side of the seam. LIPA has supported a successful effort to reduce and eliminate a transmission ‘out-service charge’ for transactions between ISO-NE and NYISO. Eliminating this charge levels the playing field for power purchased from New York and New England and in effect increases the number of generators that can competitively supply the LI market. PJM and NYISO have started discussions to reciprocally reduce such charges between PJM and NYISO, although some market participants benefit from such charges and oppose their elimination.

LIPA has also supported a variety of initiatives aimed at simplifying the process of scheduling cross border transactions. This involved supporting the implementation of software that allowed transactions scheduled in RT to be submitted on a single web-site, assigned a unique identification number or ‘NERC Tag’, validated and transmitted to market software in both ISOs.

LIPA also supported an early initiative to allow market participants without load or generation to participate in the day-ahead energy markets. Day-ahead bidders of load do not have to accept delivery of energy, and day-ahead bidders of supply do not have to produce energy, provided that they liquidate their positions in the RT market. This market rule, known as 'virtual bidding', helps DAM and RT prices to converge, helps dispatch to be efficient, and helps the market to identify and correct structural differences between DAM and RT markets that may lead to uncompetitive outcomes. Virtual bidding helped identify differences between DAM and RT dispatch, which led to the development of the RTS software improvement described previously.

Capacity Market Initiatives

The market structure for buying and selling capacity affect competitive market outcomes in the capacity market. LIPA has supported and continues to support several initiatives to improve the economic efficiency and competitiveness of capacity markets. New York has an installed capacity market designed to provide market signals for market participants to build sufficient capacity to reliably meet load given that some capacity is likely to be out of service at any given time for planned or forced maintenance. The New York Reliability Council sets statewide requirements for the installed capacity margin of surplus or 'Installed Reserve Margin' or 'IRM', typically at 18 percent of expected ISO-wide coincident summer peak demand.

Generation capacity added in different locations makes a different contribution to reliability; some locations or 'generation pockets' do not have sufficient transmission capability to allow all generation located there to serve load outside of the pocket. For example, there may be excess generation within a generation pocket but only limited capability to export that power outside of the pocket. Such 'exit-limited' generation would not make the same reliability contribution as a generator outside of the pocket. In a shortage inside the generation pocket either generator could help; however, in a shortage outside the pocket only the generator outside the pocket can make a full contribution. It can contribute to a larger number of shortages and can make a larger reliability contribution.

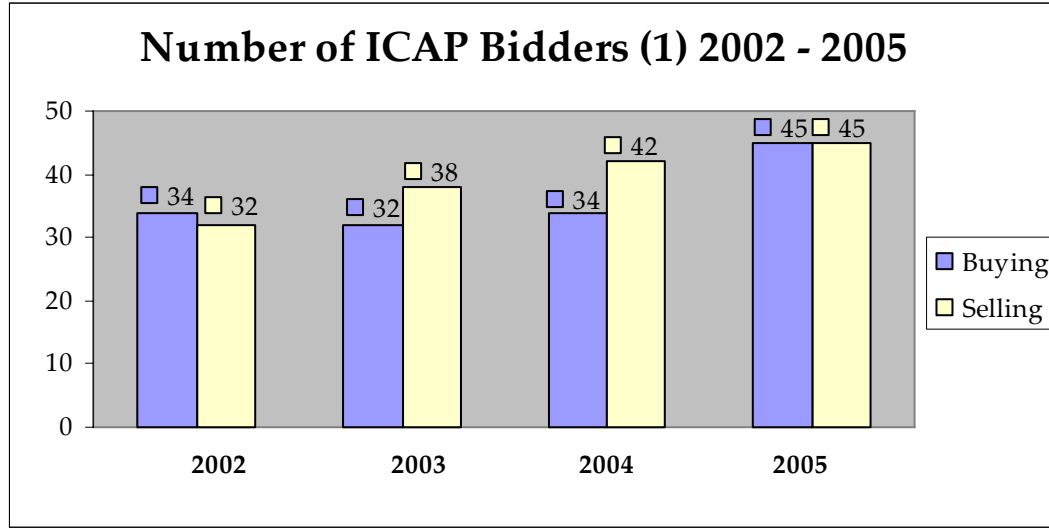
Acknowledging the limitations that allow capacity located in one part of the state to serve emergency needs elsewhere, the NYISO calculates separate locality reserve margins for three distinct regions: New York City (Zone J), Long Island (Zone K), and Rest of State. It maintains distinct installed capacity markets that match supply offers and demand bids in each locality.

LIPA has supported market rules that require new generation to assure deliverability within the zone by paying for transmission investments needed to deliver power to outside of any pocket in which the generator may locate. Each generation addition that wants to sell ICAP would be required to add transmission until the generator roughly matched the reliability contribution of other generation in the zone. Thus each potential generation addition would compete in the zonal capacity market on an equal footing with roughly the same incremental reliability contribution. Competition is furthered and usable choices are maintained. Whereas the old approach might inefficiently select a resource that provided a diminished incremental reliability contribution as the winning bidder, this outcome is prevented in the proposed approach.

The original NYISO capacity market structure had fostered a boom-bust cycle. LIPA supported the use of ICAP demand curves in the capacity markets aimed to smooth and stabilize ICAP market prices. Before this market structure was implemented, capacity market prices were volatile and varied quickly depending on whether a region was short or long on its zonal reserve requirements. With too much capacity, prices abruptly dropped to near zero, while capacity deficiencies resulted in short term prices above the cost of new entry. With an ICAP demand curve, capacity prices are set at a ramped rate that depends on whether there is more or less capacity than is required to cover peak load plus installed reserve requirements. The payment is calibrated so that a new entrant could expect to recover its capital costs (net of energy and ancillary services revenues) in a tight capacity market.

LIPA has also supported capacity market automation, designed to facilitate the ICAP auctioning, billing and settlement process. Collectively, capacity markets have become more competitive with the number of buyers and sellers increasing. The number of ICAP demand and supply bids for the obligation auction 2002 through 2005 is shown in Figure 5.

Figure 5



Source: NYISO Obligation Auction – Masked Bidder IDs

Partial ICAP De-Listing – A Regional Capacity Market Issue

One of the regional market issues associated with the capacity markets is the ability to de-list a portion of a generator’s capacity in one market for sale in another market. Partial de-listing requires the ISOs to monitor for market power abuse and in some cases to modify software to address ICAP unit must-bid requirements. LIPA has worked to fashion appropriate rules to allow capacity to be de-listed or partially de-listed for sale into external markets and has supported the competitive sale of capacity among ISOs.

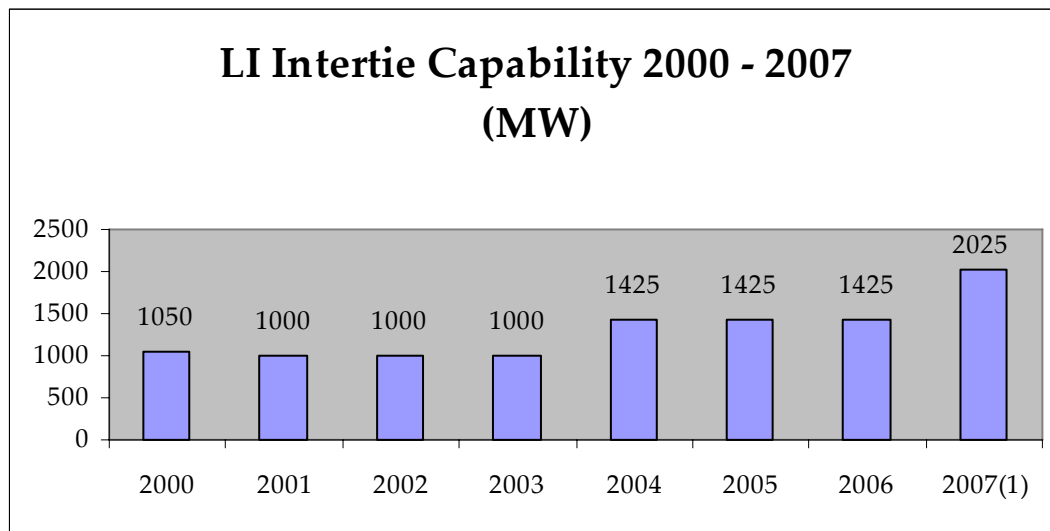
Transmission and Market Competitiveness

LIPA also promotes competition in the realm of transmission service by promoting correct market incentives and also by promoting comparable treatment of generation and transmission approaches to supplying local power needs. Transmission supports competition by allowing power from more supplier locations to reach load, increasing the available choices to serve this load.

LIPA has increased transmission capability both onto and inside of Long Island through key intertie projects (Cross Sound Cable, and the proposed Neptune Cable

and Norwalk-to-Northport “1385” cable replacement projects), and through an approximately \$200M annual expenditure on on-Island transmission and distribution capital expansion initiatives. The increase in intertie capability over time, extrapolated into the future to show firm capability associated with the planned installation of the Neptune intertie, is shown in Figure 6. LIPA has nearly doubled its intertie capability, enabling increased competition from generation sources outside of Long Island.

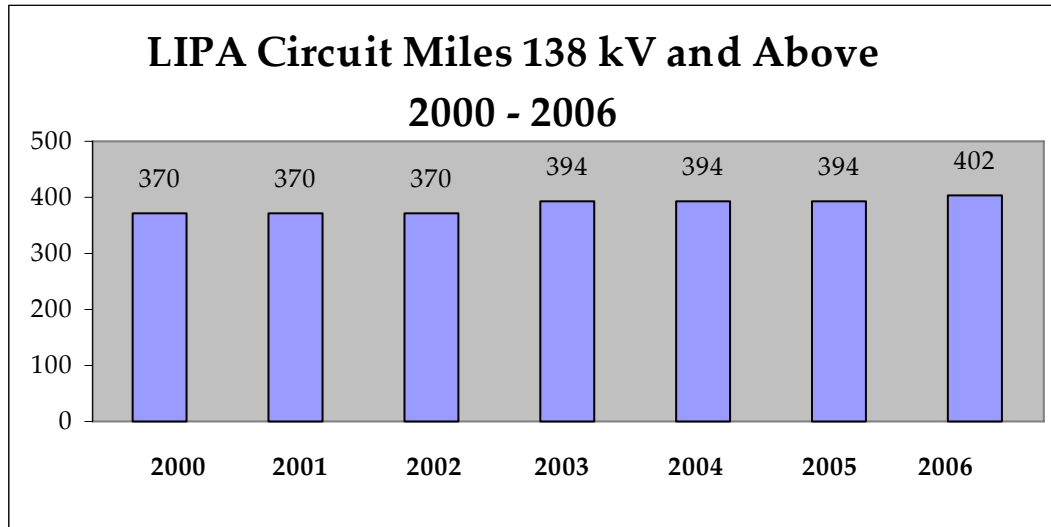
Figure 6



Source: New York ISO Load and Capacity Data

LIPA has increased transmission investment on the Island and has helped to assure that lower cost resources can serve load, and that resources are less encumbered by on-island transmission congestion. Circuit miles of on-island transmission are shown in Figure 7. LIPA has also re-conducted numerous transmission lines, increasing the capability without necessarily increasing circuit miles.

Figure 7



Source: New York ISO Load and Capacity Report

Transmission helps create competitive markets when appropriate rights are awarded to those expanding the transmission system. LIPA continues to promote the award of appropriate rights for transmission expansion, including expansion TCCs and 'Unforced Deliverability Rights' (UDRs). LIPA has also advocated for the ISOs to allow market participants to sell ancillary services such as 10-minute and 30-minute reserves from one ISO to another over new and existing transmission interties.

Rights Awarded for Transmission Expansion

Transmission expansion, coupled with remote generation or tied to remote markets, can compete with local generation to cost-effectively supplying power. To do so, those expanding the transmission system must be awarded appropriate financial rights. LIPA has worked to assure that those building transmission win the financial rights to congestion payments over those facilities, and the rights to count capacity deliveries from remote locations over those facilities against local installed capacity requirements.

Interregional Issues

LIPA has promoted several initiatives to address interregional transmission expansion issues and has promoted the development of generic proxy bus software that allows the NYISO to incorporate separate external trading nodes or 'proxy busses' associated with controllable lines. This software facilitates the recognition of new inter-ties, and allows quicker trading over new inter-ties. However, market barriers still prevent efficient use of inter-tie resources, and the NYISO committee process currently allows delay in implementing new proxy buses. For example, the markets have yet to implement a separate proxy bus for the Northport-Norwalk (1385) cable, and they continue prevent normal scheduling over this cable. LIPA continues to advocate for moving the adoption of new external proxy busses outside of the committee process, in much the same way that new bidding locations are added to the market software when new generation facilities are added automatically, without an extended market participant ratification process.

GENERATION AND TRANSMISSION PROCUREMENT

Power Supply and Need

As the predominant Load Serving Entity (LSE) in Zone K, and as the Provider of Last Resort (POLR) for all retail load in its service territory, LIPA has an obligation to plan for and obtain adequate generation capacity to meet the load requirements of its customers. LIPA has elected to rely upon the competitive marketplace to meet its capacity requirements. LIPA obtains long term generation capacity through Power Purchase Agreements (PPAs) with third party owners of generation and transmission intertie capacity. The capacity resources are selected through a competitive procurement process using Requests for Proposals (RFPs) structured to meet LIPA's load and capacity requirements.

LIPA's load requirements are established through a load forecasting process that is coordinated with the NYISO. LIPA's system manager produces an annual Forecast of Electricity Sales, Requirements and Peak Load, which include the expected sales and peak load requirements under a range of economic and weather conditions. The load forecast drives LIPA's supply planning process, which considers a range of resource and reliability conditions to determine the adequacy of its current resource portfolio and identifies the timing and magnitude of future capacity needs. This projection of capacity needs drives the LIPA generation and transmission procurement process and other related or integrated processes.

LIPA in 1998

In 1998, following the acquisition of LILCO, LIPA's power supply resources consisted primarily of long term contracts for the power supply resources in existence at the time. These resources included rights to the capacity and energy from the former LILCO generation facilities (KeySpan GENCO), contracts on-Island independent power producers (IPPs) and off-Island purchases from NYPA and other suppliers. In addition to these resources, LIPA acquired an 18% interest in the Nine Mile Point 2 nuclear facility. The GENCO generating facilities represented 87% of the capacity LIPA used to meet its requirements at the time of the acquisition.

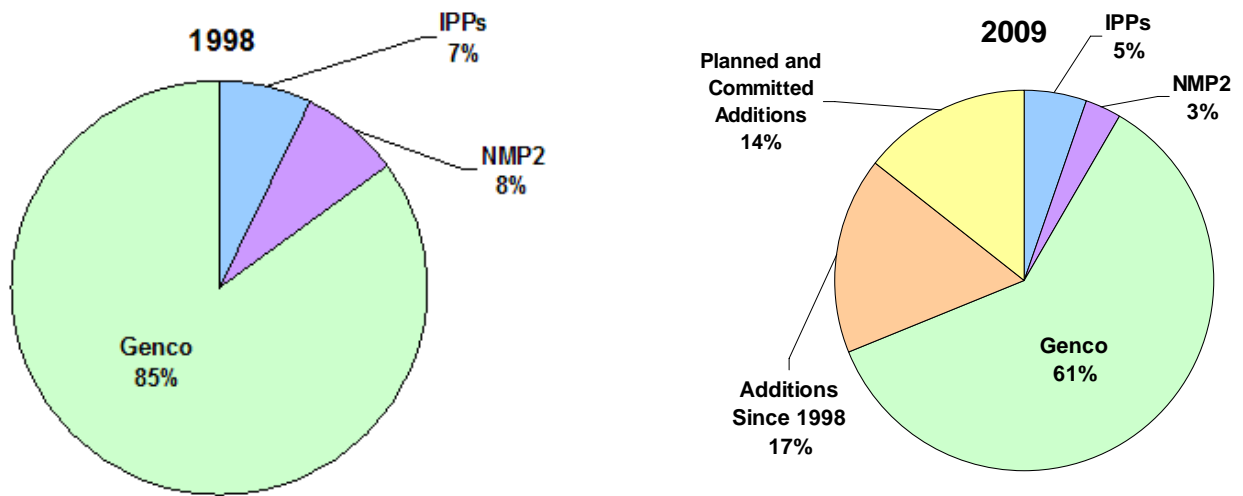
LIPA meets its longer-term capacity requirements through competitive solicitations (Requests for Proposals, or RFPs) for power resources. Rather than construct, own and operate its own generating facilities, as was typical of utilities prior to deregula-

tion, LIPA contracts with generators for capacity and energy resources through “Power Purchase Agreements” (PPAs). PPAs are contracts for the long term output of an electric generating facility. Unlike past investments of regulated utilities, rate-payers are not at risk for cost overruns or inefficient operations. PPAs mitigate risks for LIPA and give generators incentives, through liquidated damages and termination rights, to timely construct and efficiently operate their generation facilities.

Since 1998, LIPA has identified a need for additional capacity and energy resources to meet its growing requirements. In each case, LIPA has procured resources from the marketplace through a competitive procurement process. By RFP, LIPA solicits generation and transmission solutions that fit its requirements from the marketplace. LIPA benefits in the solicitation process by selecting proposals for generation and/or transmission which meet its requirements at the lowest price available. Generation and transmission developers have the opportunity to compete for a PPA with LIPA.

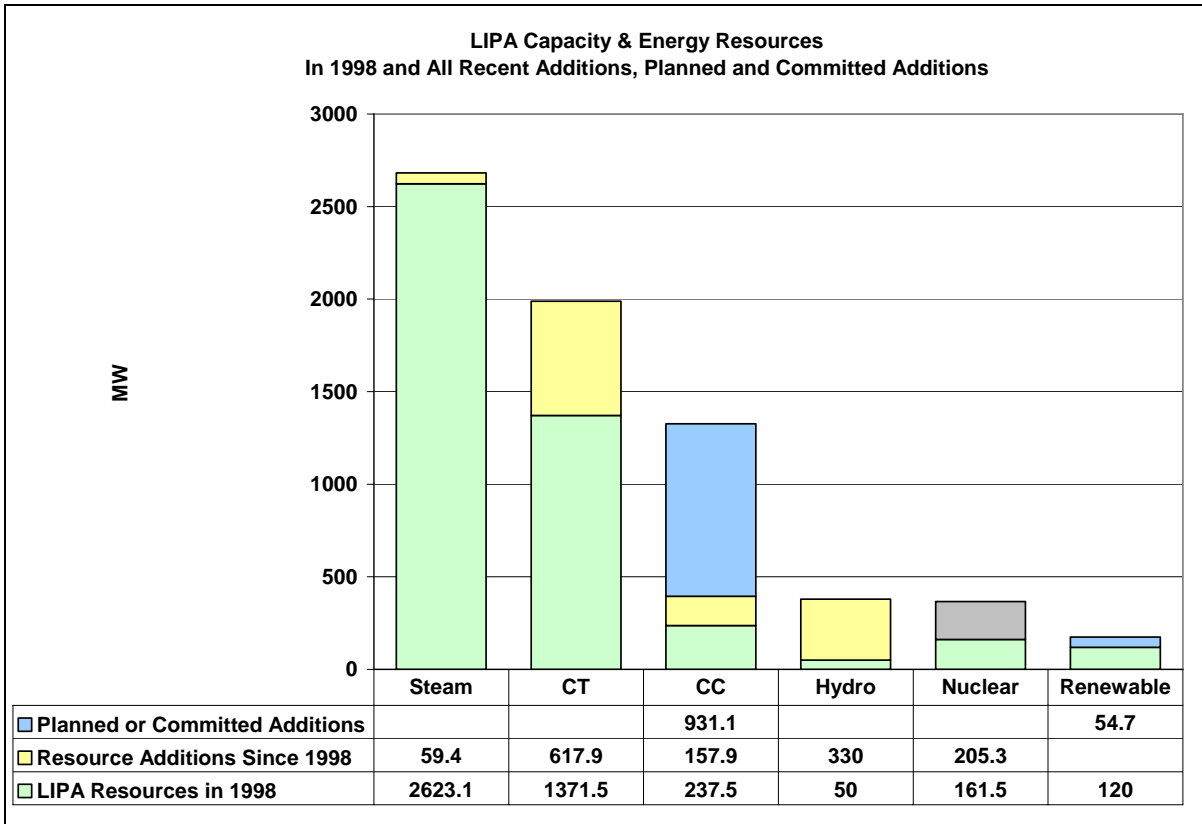
Through its use of the competitive procurement process, LIPA has continued to diversify its capacity resource composition. Figure 8 demonstrates this increase in diversity with the GENCO generating facilities representing 71% of the capacity LIPA used to meet its requirements at the time of the acquisition in 2006 and is projected to represent 61% in 2009.

Figure 8.
LIPA's Capacity Resource Composition in 2006 and 2009



In addition to a diversification of capacity resource composition, LIPA's use of competitive procurement process has resulted in a broader "portfolio" of generation. In 1998, LIPA was heavily dependant on steam and CT fired generation to meet the needs of its customers. Since 1998, LIPA has added resources such as combined cycle generators (generators that boost efficiency using thermal energy that was generally wasted in older generator to power a second turbine, dramatically increasing the power output without requiring more energy input), hydro resources, and renewable resources in the form of energy efficiency. A more diverse portfolio of generation gives LIPA flexibility in meeting the demands of its customer base with the most efficient and economic resources available.

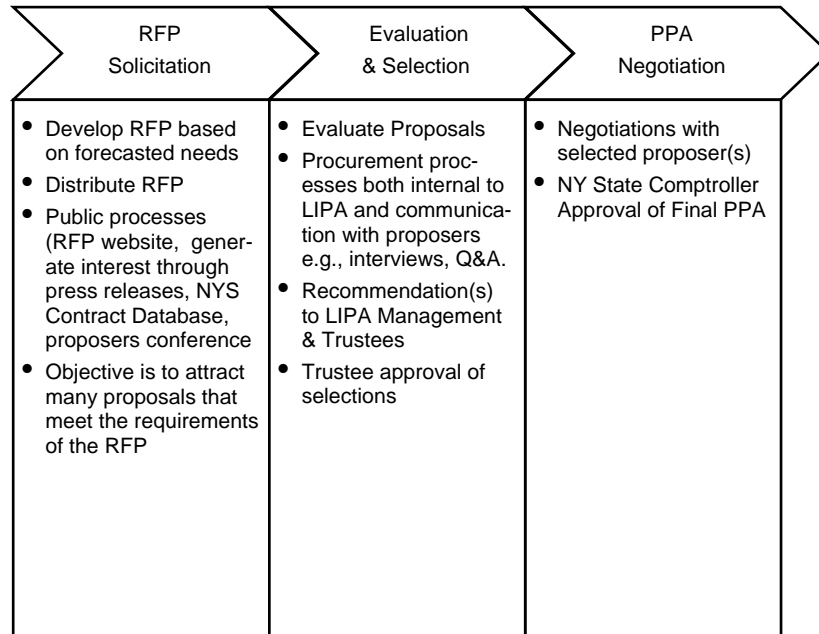
Figure 9
LIPA's Capacity Resource by Type:



Competitive Procurement

LIPA's RFP process encourages developers and owners of capacity and energy resources to participate in and compete for a long-term PPA with LIPA. Figure 10 is an overview of the LIPA procurement process, in each stage, the number of competitors is reduced, and the outcome is a contract(s) favorable to LIPA and its ratepayers.

Figure 10
Overview of LIPA's Competitive Procurement Process

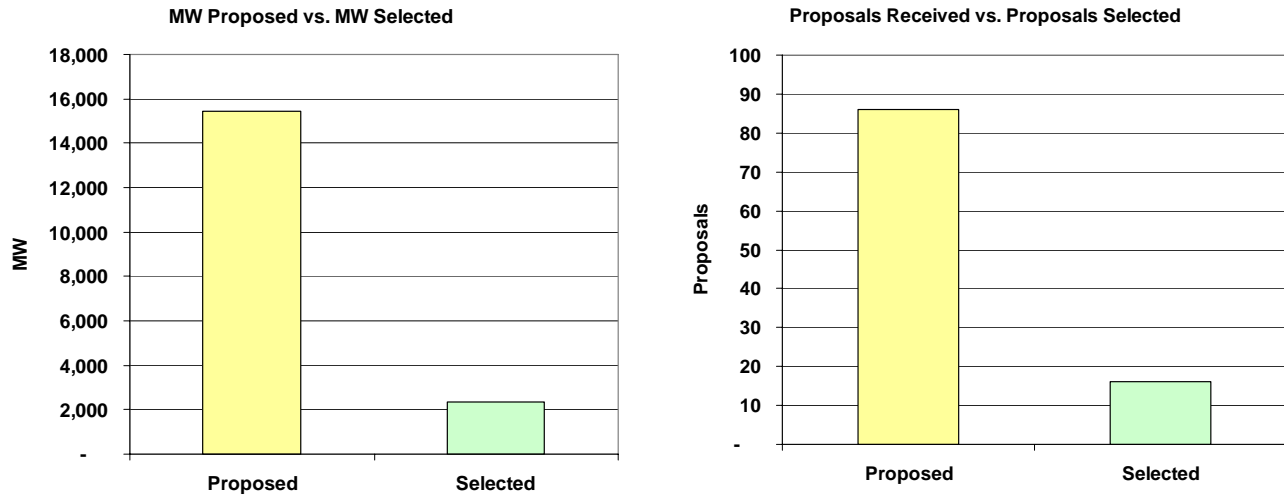


Since 1998, LIPA has issued and evaluated RFPs for capacity and energy resources to serve its growing demand and meet its requirements. Over 15,000 MW of resources have been proposed to LIPA through its RFPs and LIPA has selected 2,322 MW. Put another way, LIPA has seen that almost 7 MWs of capacity compete for every 1 MW required by LIPA, indicating a high degree of competition among generation suppliers.

Another way to look at the competition is the number of proposals received per RFP issued. LIPA has received almost 90 proposals for the 7 RFPs, listed in the table below Figure 11, or an average of over 10 proposals per RFP. Of these almost 90 proposals, 16 have been selected, or, put another way, over 5 proposals are competing for each proposal that is selected.

These statistics indicate a high degree of competition for generation and transmission on Long Island. To put these numbers in perspective, consider the admission rates for the Ivy League schools' class of 2008, where more than 6 applications were received for each applicant accepted to one of the schools.

Figure 11
Participation in LIPA's Competitive Procurement Process



Request for Proposal	MW Proposed	MW Selected
1999 Mid-Term RFP For Firm Peaking Capacity	1,950	160
2003 RFP for Power Supply From an Offshore Wind Park RFP	280	937
2003 RFP Capacity, Energy, & Ancillary Services	6,530	73
2004 RFP To Provide Up To 75 MW Of Energy Efficiency	193	140
2004 RFP for Combined-Cycle Facilities Beginning 2005	1,199	785
2004 RFP To Provide Up To 150 MW Of Mobile Generating Units	680	88
2005 RFP To Provide Off-Island Capacity and/or Energy	4,600	139
TOTAL	15,432	2,322

1999 Mid-Term RFP for Firm Peaking Capacity

In 1999, LIPA issued the “Mid-Term Request for Proposals for Long Island-Based Firm Peaking Capacity & Associated Energy (2001-2007)”. LIPA sought 75 MW generating units located on-Island to help meet the growing demand for electricity. LIPA received 26 proposals and selected 2 on-island simple cycle generation projects in March 2000.

1999 Cross Sound Cable RFP Phase 1

In November, 1999, LIPA issued an RFP “To Build, Own and Operate and to Provide Firm Transmission Capacity Over a New Off-Island Cable(s)”. LIPA sought up to 600 megawatt (MW) from a marine transmission cable that would run from New Haven, Connecticut to Shoreham, New York (Long Island). Transmission capable developers placed several bids, and in June, 2000, LIPA Board of Trustees authorized the selection of the TransEnergie Cross Sound Cable, a 330 MW undersea cable.

2003 RFP Capacity, Energy, & Ancillary Services (Base Load RFP)

In May, 2003, LIPA issued its “2007 RFP for Energy, Capacity, and Ancillary Services”. LIPA sought proposals from qualified entities to do one or more of the following: (1) develop a generating facility on Long Island and selling the capacity, associated energy, and ancillary services to the Authority; (2) develop a new transmission line to Long Island that would accommodate the reliable delivery of generation products from an off-Island generating facility; and (3) sell generation products from a new or existing generating facility located off-Island to the Authority using a new or existing transmission line to Long Island. Each such proposal was to supply the Authority with generation products, and/or new transmission capability of 250-600 MW for a term of ten, fifteen, or twenty years commencing no later than early summer 2007 under the terms of a power purchase agreement (or similar agreement for a proposed new transmission line). The Authority agreed to view favorably proposals with earlier in service dates, and to select one or more proposals pursuant to this RFP, or to decline to accept any or all proposals.

LIPA received and evaluated 14 proposals and selected 2 proposals:

- A 660 MW Transmission Cable between Long Island and New Jersey. Neptune Regional Transmission System, LLC, subsidiary of Atlantic Energy Partners, LLC
- A 277 MW On-Island Combined Cycle Generator - Caithness Long Island, LLC, subsidiary of Caithness Energy, LLC

2003 RFP for Power Supply from an Offshore Wind Park RFP

In January, 2003 LIPA issued its “Offshore Wind RFP”, which sought an experienced developer to build, own, operate and maintain – for a targeted 20-year period – an

offshore Wind Park. The wind park would consist of between 25 to 50 offshore wind turbines that would produce approximately 100 to 140 megawatts (MW) of electricity for Long Island. LIPA received and evaluated 2 proposals and selected the 140 MW Off-Shore Wind Park proposed by Florida Power & Light.

2004 RFP to Provide Up To 150 MW of Mobile Generating Units

In October, 2003 LIPA issued an RFP to “Provide Mobile Generating Units & Associated Services”. LIPA sought proposals from qualified vendors to install, operate and maintain up to 150 MW of mobile generating units on Long Island by no later than June 1, 2004 through Labor Day, 2007. LIPA received 6 proposals for evaluation and selected 88 MW of Cummins Generators proposed by Cummins Metro-power, Inc.

2004 RFP to Provide Up To 75 MW of Energy Efficiency Resources Providing Electric Energy and Capacity Savings

In October, 2003 LIPA issued its “Request for Proposals for Targeted Energy Efficiency Programs”. LIPA sought proposals for a comprehensive program that would provide 75 megawatts (MW) of electric energy and capacity savings to help stretch Long Island’s electric supplies and encourage development of innovative approaches and new technologies for providing electricity energy efficiency with the greatest coincident peak capacity savings. 12 proposals were received for evaluation. Six proposals totaling 73 MW were selected:

- 6.5 MW from Aspen Systems Corporation
- 9.8 MW from Custom Energy
- 15.0 MW from Ameresco
- 17.5 MW from CSGServices, Inc.
- 8.5 MW from Honeywell
- 15.2 MW from Johnson Controls

2004 RFP for Combined-Cycle Facilities Beginning 2005

In February 2004, LIPA issued an RFP to “Provide Power From New, On-Island, Combined Cycle Generation Project(S) Beginning Early Summer 2005”. LIPA sought to purchase beginning early summer 2005 for a term of up to 20 years 100% of the capacity, associated energy, and ancillary services ("Products") from one or more new generation project(s). Each generation project was requested to have a

maximum size of 79.9 MW and to include one or more natural gas and liquid fueled (if applicable) electric generating units operating in combined cycle mode. These were to be located at a site in Nassau County, Suffolk County or the portion of Queens County known as the Rockaways. LIPA received and evaluated 15 proposals selected 2.

- 79.9 MW Combined Cycle Power Plant by Pinelawn Power LLC
- 79.9 MW Combined Cycle Power Plant by Bethpage 3 Energy Center (Calpine Corporation)

2005 RFP To Provide Off-Island Capacity and/or Energy to LIPA

Building on the success of its procurements resulting in the selection of the Cross Sound Cable in 2000 and the selection of the Neptune Cable in 2004, LIPA issued an RFP to procure resources to “Provide Off-Island Capacity and/or Energy to the Long Island Power Authority on March 24, 2006. LIPA sought to purchase capacity and/or energy of 10 up to 345 MW (10 up to 345 MWh/hr) over the Cross Sound Cable and/or 10 up to 685 MW over the Neptune Cable for a term of five (5) to twenty (20) years beginning no earlier than (i) May 1, 2006 for the CSC or (ii) the later of the commercial operation date for the Neptune Cable or July 1, 2007. LIPA received and evaluated 11 proposals. LIPA selected three proposals and began negotiations that are currently in progress:

- Cross Sound Cable: 100 MW (345 MWs until ISO-NE adopts certain rules requiring reduction to 100 MW) from Bear Swamp Power Company LLC.
- Neptune Cable: Up to 685 MW from Florida Power & Lights’ Marcus Hook Energy Center, Marcus Hook, PA and/or LS Power Ontelaunee Energy Center, Ontelaunee Township, Berks Co., PA to obtain one or more PPAs.

Access to Other Regional Markets (PJM, ISO-NE)

By adding the Cross Sound Cable and the Neptune Cable to its resource mix, LIPA has opened up Long Island to new power markets. This development promotes competition by increasing the number of potential suppliers that can supply load on Long Island and by increasing LIPA’s access to different types of generation alternatives that may not exist on the Island.

The Cross Sound Cable, a 23-mile, 330 MW HVDC undersea cable interconnecting Shoreham, NY and New Haven, Connecticut is currently in operation. The cable allows LIPA to purchase power from one of the larger power markets in the United States, the New England ISO. ISO New England (ISO-NE) controls electricity flows in all or parts of Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine. This region contains more than 30,000 MW of diversified power generation.

The Neptune Cable is a 65-mile, 660 MW HVDC undersea cable interconnecting Sayreville, New Jersey to Nassau County on Long Island, and is expected to be online in July, 2007. The cable will allow LIPA to purchase power from one of the most diverse and competitively-priced power markets in the United States. This market, called "PJM", controls electricity flows in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. This region contains more than 100,000 MW of diversified and relatively low-cost power generation.

RETAIL COMPETITION

Promoting retail competition is best characterized as creating more opportunities for more providers to offer more and different services to consumers. As the choices available to consumers increase, they are more likely to find the combination of features that is most attractive for their particular needs. Competition is also promoted when the market place is well-structured and regulated, so that consumers are treated fairly, suppliers have an equal chance to compete, and some customer choices are not subsidized by other customers. In the end, the level of competition is not measured by the number of customers enrolled in specific programs but by the number of opportunities there are for other suppliers to serve customers, and the range of opportunities for customers to choose their preferred mix of services: whether offered by LIPA or other providers.

LIPA's collection of competitive programs fall into two broad categories: choice of retail electric supplier (including self-generation); and demand response programs. Demand response programs are promoted by the NYISO and NYPSC to improve the workings of the wholesale markets and to lower prices in the most expensive high-load hours of the year. In their March 2, 2006 "Staff Report on the State of Competitive Energy Markets: Progress To Date and Future Opportunities", the Staff of the New York State Department of Public Service characterize demand response as "significant resources which act as a substitute for new generating capacity. Demand response providers, by reducing usage on the system at critical times, help the NYISO to balance load and generation and thereby maintain a secure and reliable system. Demand response providers also help to lower energy costs by eliminating the need to operate higher cost generation" (page 14-15). "Demand Response is crucial to the success of competitive wholesale electric markets" (page 58).

The major programs that have been opened for retail competition by LIPA are shown in Figure 12. Some of these programs were developed by LIPA since the 1998 acquisition of the LILCO system. In addition, LIPA has continued the previous LILCO programs that fostered and expanded the competitive market place. LIPA has developed and extended these competitive programs based on the following principles:

- Retail customers should have a choice of energy suppliers whenever possible.
- Retail Choice programs should not be subsidized by non-participating customers.

- LIPA will remain the provider of last resort for the retail customers in its service territory.

Figure 12

Retail Program	Customer Segment	2006 MW
Long Island Choice (retail energy services)	Comm.	234
LIPA Green Choice (renewable energy certificates)	Res./Comm.	11
Customer Generation Rates (self-generation)	Comm.	62
Peak Reduction Program (demand response)	Comm.	74
LIPA Edge (demand response)	Res.	35
NYISO Demand Response	Comm.	0
Light Solutions (alternative lighting service suppliers)	Comm.	NA
Total		416

Notes: MW enrolled reflects contribution to peak requirements, including losses. LIPA Green Choice MW participation is estimated from energy consumption of participants using the system average load factor of 50%. NYISO EDRP participation is included with Peak Reduction Program.

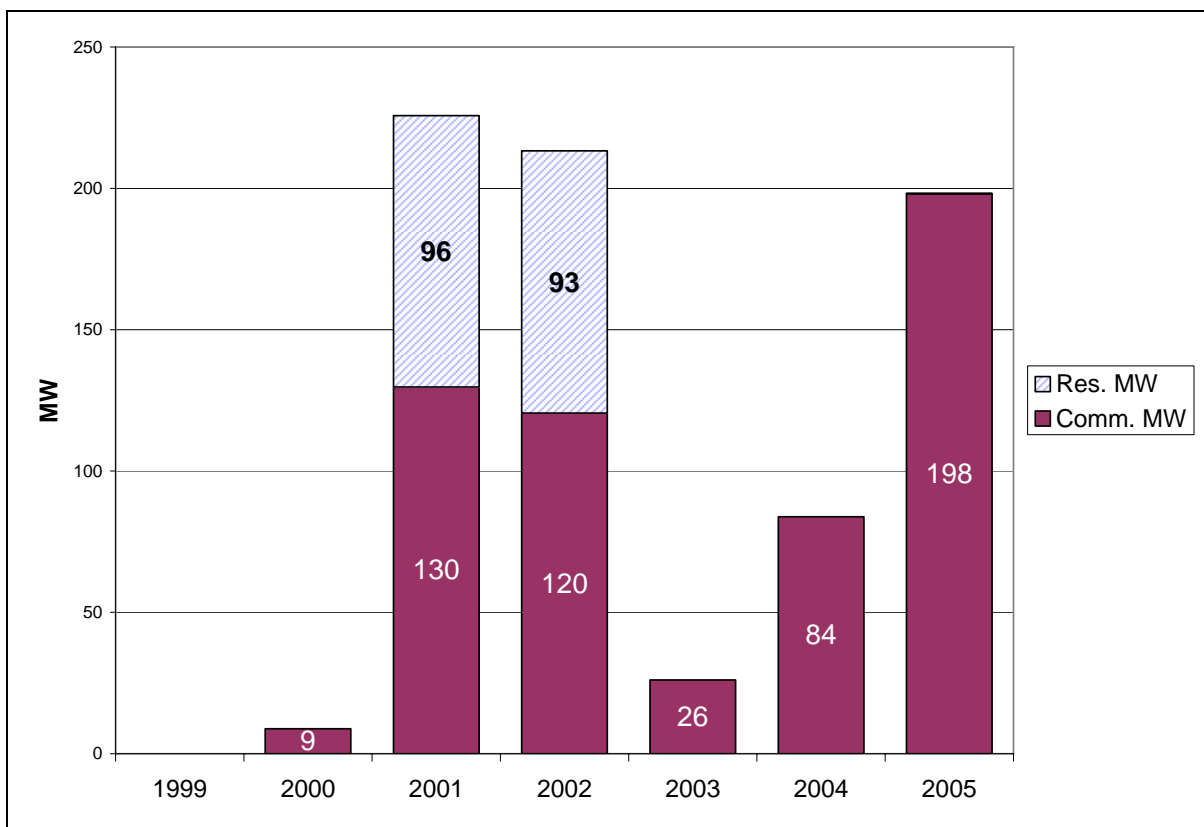
Long Island Choice

LIPA has made retail choice a cornerstone of its policy since before the acquisition of the electric system in 1998. In 1997, LIPA made the commitment to offer retail choice a part of its agreement with the New York State Public Authorities Control Board (PACB), and has met its commitment to offer retail choice sooner than required under the PACB agreement.

LI Choice allows residential and commercial customers the opportunity to purchase their energy needs from competitive and unregulated Energy Service Companies (ESCOs). LIPA delivers that energy, and provides the local capacity requirements to support that energy, at rates that transfer all the benefits of competitive supplies to the participating customers. As of 2006, more than 2,000 commercial customers participate in the LI Choice, and they represent over 200 MW in demand (more than 4% of LIPA's peak load requirement).

The LI Choice program provides opportunities for alternative suppliers, and it operates without subsidies from non-participating customers. Actual participation, however, depends on the willingness of ESCOs to offer competitive alternatives to customers in the LIPA service territory. Since the program began in 2000, five ESCOs have been licensed to provide retail service in the LIPA service territory: Con Ed Solutions; Select Energy; Constellation New Energy; Energy Aggregation Services; and KeySpan Energy Solutions. All five ESCOs offer service to the commercial market, but only KeySpan Energy Solutions (KES) offered to serve the residential market. Unfortunately, KES abandoned the LIPA service territory in April 2003, leaving residential customers with no alternative service providers for their energy supply. The departure of KES from the Long Island market also explains the significant drop in participation in Long Island Choice in 2003.

Figure 13
Participation in Long Island Choice



LIPA Green Choice

The LIPA Green Choice program was instituted in 2004. It gives customers the choice of purchasing the renewable energy certificates (RECs) associated with renewable energy projects in New York State. LIPA Green Choice gives customers the choice of buying energy with certain attributes, a choice that is not available from LIPA or the ESCOs participating in LI Choice. The two additional Green Choice marketers that participate in LIPA Green Choice are Community Energy and Sterling Planet. These marketers offer different mixes of renewable resources at different price premiums over LIPA's standard rates, and customers can enroll either 50% or 100% of their usage in the program.

The LIPA Green Choice program was introduced in mid-2004. In 2005, approximately 27,290 MWhs of renewable energy certificates were purchased by more than 2,000 participants in the program. Enrollment in LIPA Green Choice has continued to grow in 2006.

Self Generation

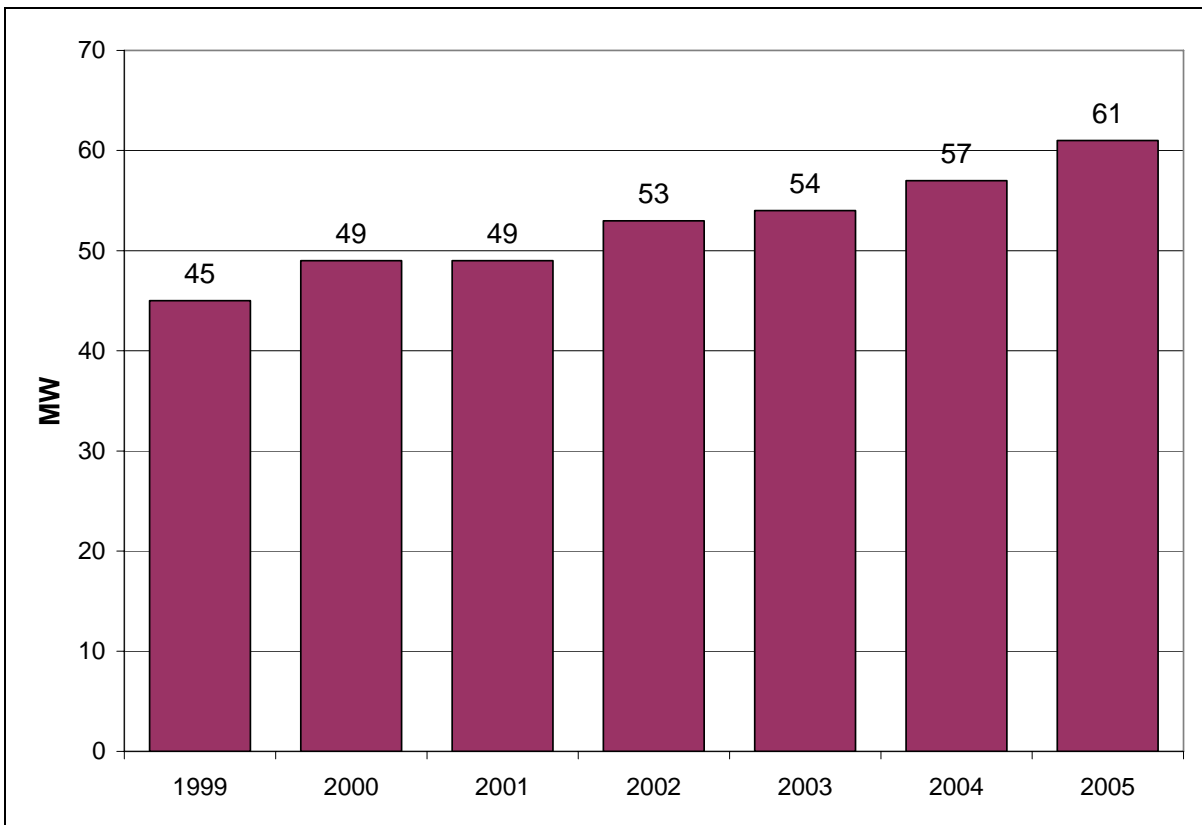
LIPA supports customer self-generation through its retail Tariff (SC-11, SC-12 and SC-15) and net metering provisions for small solar and wind generators. Service Classification No. 11 – Buy Back Service provides retail self-generators the opportunity to sell any excess output to LIPA at “avoided cost” rates. Service Classification No. 12 – Backup and Maintenance Service provides retail self-generators with replacement power when their own generators are out of service or down for maintenance. Service Classification No. 15 – Supplemental Service provides additional energy to customers that choose to self-generate only a portion of their electrical needs.

These three service classifications support the customer's opportunity to self-generate. Without these services, customers that self-generate would be isolated from the electric grid, and need to install highly reliable and redundant capacity sized to exactly meet their load requirements or face the consequences of service outages, supply shortages and/or uneconomic levels of backup generation to ensure reliable service.

Net metering is provided for residential small solar generators less than or equal to 10 KW, and future tariff revisions are anticipated for residential and farm small wind generators (up to 25 kW and 125 kW, respectively). Net metering provisions in the Tariff subsidize interconnection to the electric grid, allow customers to carry

over excess generation for retail credit to subsequent months, and buy out annual excess generation at LIPA's SC-11 "avoided cost" rates. LIPA's net metering provisions are consistent with NYS law and NYPSC policy for residential small solar generators and as proposed for residential and farm small wind generation.

Figure 14
Customer Self Generation



Peak Reduction Program (PRP)

Demand reduction is considered to be one of the more important requirements for efficient competitive markets in New York State. Both the NY ISO and the NY PSC have strongly promoted the growth of demand reduction programs in order to improve the performance of the wholesale energy markets in the State, and to reduce the cost of energy to consumers.

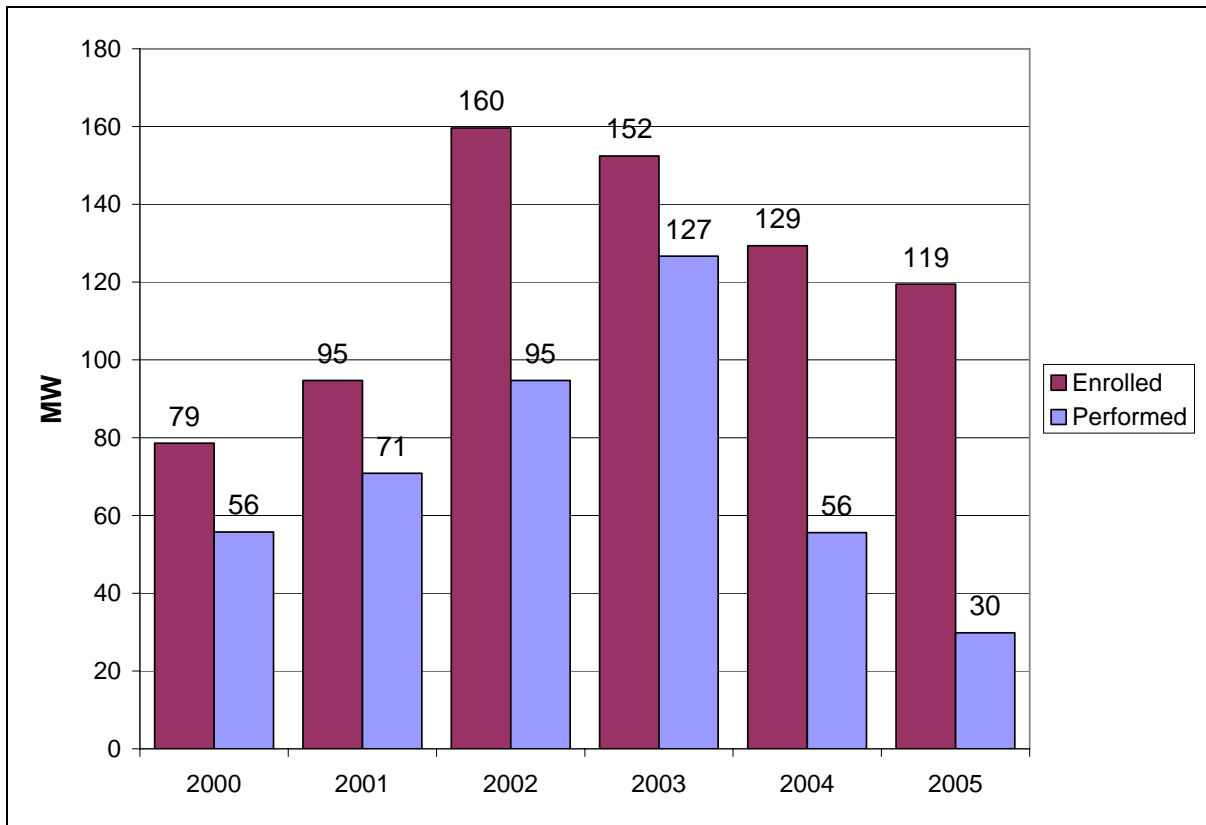
LIPA has continued the peak reduction program that LILCO originated in the 1990s. Under LIPA's peak reduction program, commercial customers with onsite generation or the ability to curtail load agree to reduce their load on the system when re-

requested by LIPA. LIPA requests customers to reduce loads on certain 'event days' to meet actual or anticipated system issues. The issues are related typically to short-term shortages of operating generation, but LIPA can request curtailments for any system reason, including transmission constraints or economic considerations.

During an event, customers are requested to curtail their load for 4 hours (2 PM to 6 PM), with at least 2 hours prior notification. Participation in the program is voluntary, and customers are not penalized for failure to curtail load. Participants are paid a fixed price for each kW of load curtailed during the four hours. The curtailment is measured as the average kW recorded during the four hours, subtracted from the average kW recorded on a similar non-event day.

PRP is integrated with the NY ISO Emergency Demand Reduction Program (EDRP), which is a voluntary program to reduce load at the direction of the NYISO. EDRP is called by the NYISO to meet either statewide or zonal situations where projected load will exceed the available generation, excluding emergency resources. LIPA tends to call a PRP event day in conjunction with NYISO called events for Zone K, unless other program considerations take precedence.

Figure 15
Participation in Peak Reduction Program



LIPA Edge

LIPA Edge was created by LIPA to enable residential and small commercial customers to participate in demand response. LIPA Edge uses controls on the customer's air conditioning equipment to reduce total load on the system with relatively minor discomfort to the participants, who experience slightly higher indoor temperatures. LIPA Edge participation is voluntary, and participants can override the control signals at any time. LIPA Edge participants receive a payment from LIPA on enrollment and receive a programmable thermostat without charge as part of the installation process. Participants receive no additional incentive when the program is activated and there are no penalties to the customer for overriding the control signals. LIPA Edge is coordinated with the Peak Reduction Program and the NYISO Emergency Demand Response Program, to maximize benefits to LIPA.

Enrollment in the LIPA Edge program has been approximately 29 MW since the program was initiated in 2003.

NYISO Demand Response Programs

LIPA supports the demand response programs offered by the NYISO, and allows retail customers to participate in these programs under LIPA sponsorship or through independent program sponsors recognized by the NYISO. The NYISO Day Ahead Demand Response Program (DADRP), Emergency Demand Response Program (EDRP) and Special Case Resource (SCR) program allow for program sponsors other than Load Serving Entities (such as LIPA and the LI Choice ESCOs). These special entities, known as Curtailment Service Providers (CSPs) or Demand Response Providers (DRPs), have the right to solicit and enroll retail customers directly with the NYISO, bypassing any involvement or coordination with LIPA. This is because NYISO has determined that independent entities such as CSPs and DRPs have a greater incentive to develop demand response than Load Serving Entities (ESCOs and utilities).

LIPA has supported this aspect of the demand response programs, without necessarily agreeing that it is appropriate to separate the responsibility to serve the total requirements of retail customers from the benefits that result from reducing load at the NYISO's direction. LIPA's customers are not prohibited from enrolling their demand response capabilities with a CSP or DRP other than LIPA, so long as no double counting of benefits occurs, a principle that NYISO has espoused in its program design as well.

LIPA automatically enrolls its Peak Reduction Program (PRP) participants in NYISO's EDRP program. On days when LIPA and the NYISO request demand response, then the performance of the PRP participants results in payments to LIPA to offset the cost of its peak reduction program. On those days when NYISO calls for EDRP reductions, but LIPA does not call a PRP event, participants are notified that they can participate in EDRP and receive the payments specified by NYISO for that event (which is less than the amount that LIPA pays for PRP events). Participation on such EDRP-only days is generally a fraction of the participation achieved when LIPA calls its Peak Reduction Program. No LIPA customers participate in the DADRP or SCR programs, either through LIPA or a NYISO-recognized CSP or DRP.

Light Solutions

LIPA also offers choices to commercial customers for their outdoor lighting needs. Customers can arrange for outdoor lighting in three ways. LIPA will provide the total lighting service (equipment plus energy) for a fixed monthly charge. Alternatively, LIPA will provide the energy through the customer's meter and match the customer with selected lighting contractors that can design, install and maintain the most appropriate and efficient outdoor lighting systems to meet their needs. As the default method, LIPA will provide energy through the customer's meter and the customer can arrange for their own lighting contractor to meet their equipment installation and maintenance needs. Prior to Light Solutions, customers were limited to either accepting the LIPA-provided equipment or finding their own lighting contractor. This either/or proposition was less beneficial because many of the most efficient and environmentally friendly lighting solutions were not being promoted by lighting contractors, so LIPA was the only supplier of these services.

LIMITS OF RETAIL COMPETITION

LIPA has promoted retail competition in many ways and is generally in favor of the benefits that competition can bring to retail markets. However, certain structural and contractual limitations on competition impact the development of competitive alternatives in the LIPA service territory. LIPA's promotion of retail competition differs from the programs offered elsewhere in New York State in certain respects, due to limitations that prevent the operation of reasonably competitive markets for retail services. The most important limitations are LIPA's commitment to minimize cross-subsidies among retail customers and imperfections in the Local Capacity market.

Minimization of Cross Subsidies

LIPA has a policy of minimizing cross-subsidies among customers and between rate classes to the extent practical. This policy against cross-subsidization applies to rate design in general (including the pricing of supplemental and standby service), and program design for LI Choice, LIPA Green Choice, and demand response.

A key difference between the LI Choice program and the retail choice programs of the regulated utilities through New York State is that LIPA has never offered incentives to ESCOs to participate in the program or to customers to switch to ESCO service. The NYPSC, on the other hand, has approved a number of incentives for participation, such as signing bonuses and guaranteed rate savings for migration to retail choice, mandatory utility purchase of bad debt (receivables) from ESCOs, and mandatory Real Time Pricing for large customers taking default service (but not for large customers taking ESCO service). Such program features impose costs on the utility that must be borne by all customers (including those that do not participate in the program).

Presumably, LIPA could increase participation in LI Choice by offering bounties or other incentives for ESCOs to serve customers and/or for customers to enroll with participating ESCOs. Furthermore, because LIPA does not subsidize participation in LI Choice is probably a key reason why no ESCO is willing to serve residential customers on Long Island. The one ESCO that was willing to serve the residential market, KeySpan Energy Services, left the Long Island market in 2002, and no other ESCO licensed in New York has stepped up to serve the residential market. It seems reasonable to conclude that the lack of interest among ESCOs in serving the residen-

tial market on Long Island is related to LIPA's unwillingness to subsidize their participation, as opposed to elsewhere in the State where participation is subsidized,.

Local Capacity Market Imperfections

The NYISO has imposed Local Capacity requirements on Long Island (Zone K). Because of the limited ability to import power onto the Island, much of the generating capacity required to serve load must be physically located on Long Island or deliverable to Long Island on dedicated transmission interconnections (eg., the Cross Sound Cable and Neptune Cable). These local capacity requirements have combined with the difficulties in siting new generation on Long Island to create a less than competitive market environment for installed capacity. Simply stated, generators have been unwilling to build new generation on Long Island without a guarantee from LIPA (the major Load Serving Entity in Zone K) of capacity payments to offset their fixed costs of construction. Additionally, LIPA has the PACB-imposed obligation to be the Provider of Last Resort (POLR) for all customers in its service territory. This obligation extends to ensuring that adequate capacity exists on Long Island to meet the requirements of customers that may choose LIPA as its load serving entity. The need to meet this POLR obligation in a transmission constrained Zone places peculiar obligations on LIPA that require unique market structures and program organization.

LIPA has addressed this wholesale market imperfection through competitive RFPs that solicit new capacity as needed to meet load requirements. While the RFP process itself promotes competition in the development of new on-Island capacity, it results in fixed contractual obligations for LIPA that become unavoidable costs for the life of the resulting Power Purchase Agreement (PPA). These capacity obligations affect LIPA's program design for LI Choice, and explain the major difference in the structure of the retail choice programs between LIPA and the regulated utilities in the State.

At the retail level, since LIPA is procuring all of the local capacity required to meet the load of all its customers, LIPA has not unbundled local capacity from its services or rates. Instead, LIPA provides local capacity to the ESCOs (just as it provides local capacity to its bundled service customers) and recovers its total cost of local capacity from all of its customers (bundled service and LI Choice) as part of its standard rate to bundled service and LI Choice customers. LIPA does not rely on the NYISO-administered capacity market for two reasons. The market is not sufficiently competitive to ensure fair pricing over the long term nor does it ensure that LIPA will

recover its fixed cost obligations for the capacity it purchased on behalf of all customers in its service territory.

The Zone K capacity market is not competitive because LIPA controls more than 90% of the capacity that is bid into the market. LIPA also purchases more than 90% of the capacity in the Zone K market. With such concentration of buying and selling in the Zone K market, the resulting price in the six month capacity strip and monthly spot capacity auctions can hardly be considered as market-determined and competitively set. Rather, the market solution is administratively derived to ensure that all market participants can purchase or sell their capacity at a price that is reasonable to the NYISO given the market circumstances. Since the NYISO pricing for the local capacity market diverges from the prices that LIPA obtains from its competitive procurement process, LIPA has chosen to recover its capacity costs from all retail customers, instead of unbundling the local capacity from its delivery rates and relying on the ESCOs to obtain local capacity to meet the needs of their retail customers.

LIPA periodically assesses the situation in the local capacity market to determine whether conditions more compatible with the unbundling of local generation capacity might be emerging. A key indicator that LIPA considers is the number and amount of capacity resources bidding into the capacity market that are not under long term contract with LIPA. The emergence of a greater degree of wholesale competition at the local capacity level would help retail competition emerge, by allowing LIPA to modify its programs to be more similar to the retail choice programs in the rest of the State. If ESCOs had the opportunity to purchase their local capacity requirements from the competitive market, instead of from LIPA, it is likely that more choices would become available to retail customers, at no cost to LIPA's non-participating customers.

Overall Level of Retail Competition on Long Island

LIPA's retail market can be considered reasonably competitive for commercial customers, but not for residential customers. The commercial market is reasonably competitive because multiple choices exist for commercial customers to meet some or all of their load requirements from non-LIPA sources, such as self generation, ESCO service, Green Choice resources and demand response programs. Several hundred Megawatts of commercial load are currently enrolled in such programs, as shown in Figure 12, which is a significant percentage of the commercial market. Furthermore, commercial customers and their market allies (ESCOs, CSPs, DRPs,

and energy management consultants) are free to design additional programs and services to attract additional participation. This freedom to develop additional products and services means that the effective level of competition is extremely high.

LIPA's retail market offers notably fewer choices to residential customers. No ESCO is currently willing to offer service to LIPA's residential customers, and self-generation alternatives seem to be limited to solar generation through the LIPA-subsidized Solar Pioneer program, the LIPA Edge demand response program, and the Green Choice renewable attributes program. The lack of ESCO participation in the LI Choice program is not a failure on the part of LIPA to allow alternative services into the residential market, but rather an unwillingness of ESCOs to participate in residential programs without explicit subsidies, such as bounties or guaranteed savings, from non-participating customers.