
Securing Long Island's Energy Supply

February 26, 2002



Center for Management Analysis
School of Public Service
College of Management

C.W. Post Campus
Brookville, N.Y.

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Securing Long Island's Energy Supply

Executive Summary

Introduction

The summer 2001 heat wave and resulting severe test of Long Island's generating capacity coupled with the September 11 terrorist attack have high-lighted the critical importance of electric supply to the homes and businesses of Long Island.. With the well-being of the whole Long Island region vitally dependent on security of electric supply, it is important to factor in extremes of this dimension in energy planning for the future. The geographic reality of Long Island and limited electric interconnections to the mainland have resulted in the almost exclusive need to generate all electric energy locally at peak periods of the year. Redundancy of electric generating plants located at multiple sites around the island enhances security. Alternate fuel supply for electric generating plants also protects against fuel embargos, short supplies, and price volatility. On Long Island, Keyspan owns all of the former LILCO generating units. More privately-owned units are planned for Long Island and this could have a significant effect on the price of electricity and the environmental impact of providing it. This new generation built by independent power companies using private capital could also insulate the public from the financial risk associated with the old rate based regulatory system.

Examination of Long Island Energy Infrastructure

Electric Generation

The topic of electric generation on Long Island has received a great deal of attention over the past few months. LIPA has initiated a fast track combustion turbine project for the installation of approximately 400 MW of generation capacity for operation by June 2002 to meet a projected increase in peak demand. To execute this project, power plant developers in the private sector will engineer, construct, own and operate new plants. Using a similar model to the NYPA program that brought eleven new combustion turbine peaking units online for 2001 summer service, predominantly in the New York City area, LIPA

expects to have these new units operational by June of 2002. This would increase Long Island generating capacity by just less than ten percent. All these plants are using the most modern combustion turbine technology, employing up-to-date air emission control systems. They also can be constructed in a very short timeframe. New combustion turbine plants so equipped are far cleaner than any operating units on Long Island. Because of their higher efficiency, these units will also tend to displace older simple cycle plants. In addition, the units sited at 6 different locations around Long Island should facilitate delivering power to local load pockets. Also, the use of both natural gas and low sulfur oil fuels for these units provides for flexibility through a diverse fuel supply.

A major issue in generation ownership has been the decision of LIPA's staff to recommend to the LIPA Board that it exercise the option it has to purchase the Keyspan owned generation plants on Long Island. These units were originally part of the LILCO system and became Keyspan plants when the LIPA / LILCO transaction was completed. LIPA has projected a savings to electric customers can result if the purchase price is near to the plants current book value. At higher purchase values the transaction becomes less favorable. A decision on the exercise of the option by the LIPA Board is scheduled for late in February.

Electric Transmission Interconnections

Long Island may have it's first new electric transmission interconnection in over a decade installed by the summer of 2002. However, even though the Transenergie Project, a 300 MW underwater cable to be built between the Shoreham Nuclear Plant Site and New Haven, Connecticut has received regulatory approval, the possibility of additional legal attempts at blocking the link remains. As an island service territory, 3 cable interconnections were built over the years between the LILCO and Con Edison systems. A cable interconnection to Connecticut was also built between the Northport Power Station of LILCO and Norwalk Connecticut. In addition, NYPA constructed an underwater cable between Sands

Point and Yonkers in the 1980's. Together these interconnections have the capability to transfer approximately 1400 MW, provided the generation is available

Gas Pipelines

Over the past months, attention has been given to the Islander East Project to bring a new gas pipeline supply to Long Island. Proposed between New Haven Connecticut and the Shoreham Nuclear Plant site, the new under water line will be built by a consortium including Keyspan and Duke Energy. A permit application for a competing project has been recently filed with FERC by the Iroquois Pipeline Company. It would follow a similar route as the Islander East project.

Long Island currently receives its gas supply through a series of pipelines: over land and underwater. These supplies are augmented by the liquefied natural gas storage facility of Keyspan at Holtsville. The need to build and operate additional generating plants to meet Long Island's electric demand, requires that additional supplies of natural gas be brought to the island.

Long Island Electric Transmission Grid

Electric Power is transmitted from Long Island's electric generating plants and from off- island sources over a transmission network built many years ago. The bulk system was expanded in the mid 70's to handle the output of the 800 MW Shoreham nuclear plant and part of the 2400 MW Jamesport nuclear plant. It was never completed at the expected 345 KV level when the Jamesport project was cancelled. LIPA has indicated that new large independent generating plants proposed east of its Holbrook transmission substation will require upgrades to the existing 138 KV system.

Assessment of Proposed Near Term Energy Projects

The 2002 LIPA Combustion Turbine fast-track projects are being built to meet the immediate need for generation in the summer of 2002. In order to achieve this on a very short time schedule, the size of each plant was limited to 79.9 MW output so that the units would be exempt from the Article X Siting

requirements intended for larger size units. Three other larger generation projects all in Suffolk County have been announced and are moving through the Article X regulatory process. Each project has submitted an extensive application to the NYS Board on Electric Generation Siting and the Environment under the Article X regulations.. The entire process can take from 18 months to two years to complete. Thus none of these three units are expected to be operational in the near term considering that they will require about 24 months to construct. As was the case for the LIPA 2002 units, each of the three large projects have conducted public information sessions to provide one on one opportunities for members of the public to learn about the projects and their impact on the local community. Those sessions have indicated public opposition to the plants.

Project Permit and Licensing Process

The NY PSC process for licensing large electric generating plants under the Article X regulations, requires an extensive analysis of the environmental impacts of the project with an applicant completing an Environmental Impact Assessment (EIS) Report for submittal to the Siting Board. Throughout the agency review of the EIS, there is opportunity for public participation in the process. A contested public hearing can extend the process beyond the targeted twelve-month window at the Board's discretion. If a project requires an overhead electric transmission line of 138 KV or higher, a similar extensive environmental review is conducted by the NY PSC under its Article VII regulations. Opposing groups can request a formal public hearing much the same as in the Article X process. Here there is no requirement that the PSC issue a decision in twelve months.

Alternative Energy Supply Options & Conservation

In securing Long Island's energy supply one must always be mindful of the isolation of an island service territory even with new transmission interconnections being added in the future. Because of this alternative energy supply options beyond oil and gas fueled thermal power plants may make even more sense for Long Island than for other locations. Consistent with this, LIPA has been carrying out an

aggressive program of promoting alternative energy supply options almost since its inception.. LIPA's efforts in pursuing alternative energy options also have been complemented by its conservation program. Alternative energy options will always be an important component of any plan to secure Long Island's energy supply.

Review Of Electric Load Forecast

LIPA's analysis of the 2001 summer peak and its projections for 2002 has led to the LIPA sponsored 2002 Combustion turbine project.. In testimony before the PSC in proceedings for certificates of public need by the project developers, LIPA officials articulated the need for additional capacity. These forecasts have been reviewed by the NYS PSC staff and by letter of October 10, 2001, Chair Maureen Helmer of the PSC strongly endorsed the 2002 program. The New York Independent System Operator (NYISO) also strongly supported the LIPA program. From these separate reviews, it appears that there is some consensus on the urgent need for on-island generating capacity to meet the forecasted summer peak for 2002 and the expectation of up to 100 MW per year growth in the future.

Observations and Recommendations

Security

Long Island's large population and vibrant economy results in an ever-increasing need for more energy. Supplying this need even under normal circumstances is difficult because of the unique geography of the island and its limited interconnections with the outside World. With the events of September 11th, yet another concern has complicated the energy supply picture on Long Island - the vulnerability of its energy supply system to acts of terrorism.. Aside from making every effort to protect the physical integrity of existing facilities, energy supply becomes more secure with flexibility provided by redundancy. In the case of electric supply this is achieved by diversity through new generating plants,

improved electric transmission systems, new electric interconnections, new gas supply pipelines, conservation and alternate energy supplies.

There are presently at least several major electric generating projects being developed on Long Island by private interests. In contrast to the old system for vertically integrated utilities, the customer will not directly bear the financial risks associated with these projects through regulated rates. Instead private developers will finance the projects and assume the financial risk of their profitability. The Long Island customer will pay for electricity from these projects only when it can be supplied cheaper than other sources. In addition, the technology of the new electric generating units allows them to operate with reduced environmental impact from air emissions, as compared to existing units on Long Island. Even with a surplus capacity situation, through displacement the result would be lower costs for the consumer and less impact on the environment. Ironically, with a national trend toward canceling power projects, it should not be a concern that too many power plants will be built on Long Island, but rather that developers will reconsider their plans and decide not to build here.

New gas pipelines and electric interconnections also are needed for security of supply and to address increasing energy needs. Long Island stands to benefit economically and environmentally from these projects and the financial risks their developers are willing to take.

Project Permit and Licensing Process

The siting of large-scale generating facilities most often leads to disputes between project proponents and local groups. A way to more effectively deal with community opposition is to provide an effective forum early on in the permitting process facilitated by a third party impartial arbitrator who would resolve disputes in a mandated format. The role of this arbitrator potentially could be filled by an academic institution with experts in environmental and institutional problem solving. New York State's Article X licensing process for power plants and Article VII licensing process for transmission projects must be streamlined to shorten the time and reduce the cost of obtaining a construction permit.

LIPA Supply Contract Strategy

LIPA has a responsibility to provide sufficient electric energy to accommodate near term growth and ensure reliability. Their fast track program to provide 400 MW of peaking capacity by the summer 2002 is prudent and justified in the face of an independently verified need. Beyond the near term, LIPA is also being challenged by the transition to a competitive market place for electricity which requires much study and guess work on what the future holds. In the process, LIPA must exercise considerable care in making contracted commitments for future supplies. Long-term contracts can represent significant financial risks for LIPA customers. A recent example of this is the questionable contracts California entered into to address the power supply crisis in the state.

LIPA Purchase of Key Span Generation

LIPA is currently evaluating whether or not to exercise a one-time option as part of the original acquisition of LILCO's transmission and distribution system to purchase Keyspan's electric generating plants. Under the current arrangement LIPA comes as close as you can to owning the plants without actually owning them. For the most part, if LIPA can purchase the plants at a reasonable premium to book value, it would probably result in a cost reduction for customers. This is because LIPA could finance the purchase with tax-exempt bonds and possibly obtain some modest savings through a new negotiated operating contract with Keyspan or an alternate provider. If this were the end result, the purchase would be difficult to criticize other than to say LIPA now resembled the old LILCO. However, under charges that LIPA ownership would stifle future competition on Long Island, the authority has indicated that it may consider reselling the plants after they are purchased to encourage competition. It is not clear how this would reduce cost to the customer. The bottom line is that if an acceptable price can be negotiated for the plants, it may make sense for LIPA to purchase them. Beyond that, reselling the plants or leasing the sites must only be considered if the financial risk and

cost to the customer would be minimized. A large part of the decision will hinge on the future availability of capacity and the successful evolution of a competitive market for electricity.

Alternate Energy Supply Options & Conservation

LIPA should continue to aggressively promote the utilization of alternate supply options and conservation as a key part of its energy program. As part of this, demand side management programs promoting peak load pricing needs to be enhanced to assist in lowering peak summer load. Renewable resources such as wind power and thermal electric systems should continue to be actively promoted. Even with an aggressive plan for alternate energy options, the capacity potential for this amounts to less than 50 MW and cannot be viewed as a complete substitute for generating additions.

ANP Project

The 580 MW ANP project proposed for Yaphank has met opposition from both LIPA and the Town of Brookhaven. In retrospect it is unfortunate that a project this size was not located on a site which had been earmarked for a large power plant such as the Shoreham property. The developer, however, is taking the financial risk and it appears that the project could result in lower energy costs and less environmental impact as compared to existing facilities. . . And for these reasons, including the fact that capacity is needed, the plant should probably be built. On the other hand, there has to be a recognition that the siting of the ANP plant at its proposed location will affect the pattern of electric transmission from the east to the load centers of western Long Island. Because of this there should be an equitable sharing of the costs of transmission upgrades between LIPA and ANP. Perhaps there could be a compromise developed through a creative cost savings proposal which would make use of the extra capacity designed and partially implemented for the existing transmission lines to accommodate the large nuclear plants originally planned for eastern Long Island.

SECURING LONG ISLAND'S ENERGY SUPPLY

Introduction

The summer 2001 heat wave and resulting severe test of Long Island's generating capacity coupled with the September 11 terrorist attack have high-lighted the critical importance of electric supply to the homes and businesses of Long Island. Without the extraordinary measures taken by LIPA and its customers to reduce electric use during the summer, rolling blackouts would have been initiated to keep the island wide system from failing under the severe load. The loss of electric service to lower Manhattan after the collapse of the World Trade Center buildings and destruction of the local substation demonstrates the vulnerability of electric supply systems to acts of terrorism. With the well-being of the whole Long Island region vitally dependent on security of electric supply, it is important to factor in extremes of this dimension in energy planning for the future.

The geographic reality of Long Island and limited electric interconnections to the mainland have resulted in the almost exclusive need to generate all electric energy locally at peak periods of the year. Redundancy of electric generating plants located at multiple sites around the island enhances security. Failure of one unit leaves others to take up the load. Alternate fuel supply for electric generating plants also protects against fuel embargos, short supplies, and price volatility. Natural gas supply by multiple gas pipelines both underwater and land based are critical to electric supply as is oil delivered directly to electric generating plants by tankers or barges.

In concert with federal initiatives, New York State has created a competitive electric generation market. In the process, all of the state's retail serving utilities have divested their electric generating plants. On Long Island, Keyspan owns all of the former LILCO generating units. Although progress has been slow in attracting other private companies to site and build new units, companies such as Calpine and Trigen do own plants on Long Island. More privately-owned units are planned for Long Island and this could

have a significant effect on the price of electricity and the environmental impact of providing it. Conceivably, new highly efficient and environmentally clean plants could displace older units and produce cheaper energy in the future. This new generation built by independent power companies using private capital could also insulate the public from the financial risk associated with the old rate based regulatory system.

In any event, with the experience of September 11 behind us, security must be an important consideration in the development of new electric generating plants on Long Island along with other traditional factors. Security, in this case, should encompass the notion of multiple sites, alternate fuels, and excess capacity.

Examination of Long Island Energy Infrastructure

Electric Generation

The topic of electric generation on Long Island has received a great deal of attention over the past few months. LIPA has initiated a fast track combustion turbine project for the installation of approximately 400 MW of generation capacity for operation by June 2002 to meet a projected increase in peak demand. This will increase by almost ten percent the existing capacity on Long Island owned and operated mostly by Keyspan.

The Keyspan Long Island generating units are comprised of the original LILCO fleet of oil and gas fired steam units and a number of combustion turbine peaking units which burn natural gas and distillate fuel oil. These units were built over the course of fifty years with the last units coming on line in the early 90's. The New York Power Authority (NYPA) Flynn Project (150 MW) and the Brentwood Project (45 MW), the Calpine plants at Bethpage (50 MW) and Stony Brook (40 MW), and the Trigen Plant (40 MW), at Uniondale are also part of the fleet of Long Island power plants. Waste to energy plants in Hempstead, Huntington, Babylon, and Islip add about another 180 MW to the base system.

The Keyspan power plants include steam turbine units at Northport (1500 MW), Port Jefferson (400 MW), Barrett-Oceanside (400 MW), Glenwood (200 MW), and Far Rockaway (100 MW). Peaking combustion turbines are located at Barrett (300 MW), Holtsville (500 MW), Glenwood (100 MW), and Shoreham (300 MW). Together with a fleet of small diesel generators, some owned by the municipal utilities (Freeport, Rockville Centre, and Greenport), the LIPA base generation capability total is approximately 4600 MW.

Under the recently announced LIPA fast-track program for 2002, power plant developers in the private sector will engineer, construct, own and operate new plants. Using a similar approach as the NYPA

program that brought eleven new combustion turbine peaking units online for 2001 summer service, predominantly in the New York City area, LIPA expects to have these new units operational by June of 2002.

As part of this program, Keyspan will construct two 79.9 MW projects: one at the Port Jefferson Power Station site; and the second at the Glenwood Power Station site. PPL Global will construct two 79.9 MW projects: one at the Shoreham Nuclear Plant site; and the second at the Pilgrim State Hospital complex designated the Edgewood project. Calpine will add a 45 MW unit to its existing cogeneration plant in Bethpage. All the units will employ General Electric LM 6000 combustion turbines. A corporate cousin of a major Florida utility, FPL, will construct a 50 MW unit using Pratt & Whitney combustion turbines at the Far Rockaway Power Station site of Keyspan, designated the Bayswater project.

All these plants are using the most modern combustion turbine technology, employing up-to-date air emission control systems. They also can be constructed in a very short timeframe. New combustion turbine plants so equipped are far cleaner than any operating units on Long Island. Because of their higher efficiency, these units will also tend to displace older simple cycle plants. [In a similar fashion, new combustion turbine combined cycle plants will displace older steam units due to their high efficiency.] On the basis of environmental assessments prepared for these plants, air emission permits were issued by the New York State Department of Environmental Conservation.

LIPA appears to have taken a necessary step to increase Long Island generation capacity through this program. In addition, the units sited at 6 different locations around Long Island should facilitate delivering power to local load pockets. Also, , the use of both natural gas and low sulfur oil fuels for these units provides for flexibility through a diverse fuel supply.

A major issue in generation ownership has been the decision of LIPA's staff to recommend to the LIPA Board that it exercise the option it has to purchase the Keyspan owned generation plants on Long Island. These units were originally part of the LILCO system and became Keyspan plants when the LIPA / LILCO transaction was completed. It is expected that analysis by both sides over the next month will focus on the fair market price to be paid for the plants. LIPA, has projected that a savings to electric customers can result if the purchase price is near to the plants' current book values. At higher purchase values the transaction becomes less favorable. Tax savings is another issue which would affect the economics. LIPA has indicated that it would consider selling the plants to other private investors over time to increase the extent of competition in the generation sector on Long Island. A decision on the exercise of the option is scheduled to be taken up by the LIPA Board late in February.

Electric Transmission Interconnections

Long Island may have its first new electric transmission interconnection in over a decade installed by the summer of 2002. Just before the holidays, The Connecticut Siting Council indicated its intent to approve the Transenergie Project, a 300 MW underwater cable to be built between the Shoreham Nuclear Plant Site and New Haven, Connecticut. Their final approval was granted in January 2002. The possibility of additional legal attempts at blocking this link could, however, affect the schedule. This interconnection would add to the existing capability to exchange power between Long Island and Connecticut.

As an island service territory, 3 cable interconnections were built over the years between the LILCO and Con Edison systems: Astoria, Lake Success, and an underwater cable to Westchester County. A cable interconnection to Connecticut was built between the Northport Power Station of LILCO and Norwalk Connecticut. (Keyspan and Connecticut's Northeast Utilities have proposed a project to replace the existing oil cooled cables with solid dielectric design. This would be an improvement over the reliability of the existing cable). NYPA also constructed an underwater cable between Sands Point and Yonkers in

the 1980's. Together these interconnections have the capability to transfer approximately 1400 MW, provided the generation is available. The addition of the new cable at Shoreham will enhance the ability to bring power to Long Island during emergency and peak periods. A future cable project, Project Neptune, has been proposed to bring an underwater cable from New Jersey to the south shore of Long Island and tie into the LIPA grid in Nassau County.

Gas Pipelines

Over the past months, attention has been given to the Islander East Project to bring a new gas pipeline supply to Long Island. Proposed between New Haven Connecticut and the Shoreham Nuclear Plant site, the new under water line will be built by a consortium including Keyspan and Duke Energy. The new supply will tie into the existing Keyspan transmission network at the intersection of William Floyd Parkway and the LIE. A permit application for a competing project has been recently filed with FERC by the Iroquois Pipeline Company. It would follow a similar route as the Islander East project.

Long Island currently receives its gas supply through a series of pipelines: over land from Queens; from the underwater Transco line from New Jersey to Long Beach; and the Iroquois Pipeline from Connecticut to the Northport Power Plant. These supplies are augmented by the liquefied natural gas storage facility of Keyspan at Holtsville. This peaking facility has the capability of storing gas delivered by pipeline during off peak periods for use during the balance of the year.

The need to build and operate additional generating plants to meet Long Island's electric demand, requires that additional supplies of natural gas be brought to the island. The Islander East project will help meet this need. Other pipeline projects may also be justified to satisfy this demand.

Long Island Electric Transmission Grid

Electric Power is transmitted from Long Island's electric generating plants and from off- island sources over an operating 138 KV , 69 KV and 33 KV transmission network built many years ago. This network delivers the power to LIPA's distribution substations that step down the voltage to lower levels for delivery to individual transformers for home and business use. The bulk system was expanded in the mid 70's to handle the output of the 800 MW Shoreham nuclear plant and part of the 2400 MW Jamesport nuclear plant. It was never completed at the expected 345 KV level when the Jamesport project was cancelled.

LIPA has indicated that new large independent generating plants proposed east of its Holbrook transmission substation will require upgrades to the existing 138 KV system.

Assessment of Proposed Near Term Energy Projects

The 2002 LIPA Combustion Turbine fast-track projects are being built to meet the immediate need for generation in the summer of 2002. In order to achieve this on a very short time schedule, the size of each plant was limited to 79.9 MW output so that the units would be exempt from the Article X Siting requirements intended for larger size units.

LIPA and its developers, however, did perform an extended Environmental Assessment contemplated by the State Environmental Quality Review Act (SEQRA) regulations for the units and applied for an air emissions permits from the NYS Department of Environmental Conservation (NYSDEC). LIPA acted as the lead agency for the SEQRA review and issued a "negative declaration" for the projects, i.e. each simple cycle combustion turbine plant did not constitute a major emission source and was shown to meet all the NYSDEC and USEPA emission standards. This regulatory review cycle took approximately six months to complete. It included a public information meeting at each plant area

conducted by LIPA and the developer. NYS DEC public comment hearings were held for each air permit. There was general public acceptance of the projects.

Three other larger generation projects, all in Suffolk County, have been announced and are moving through the Article X regulatory process. Keyspan has proposed the 250 MW Spagnoli Road Project in the Town of Huntington. American National Power (ANP) has proposed the 580 MW Brookhaven Project to be built at Exit 66 on the LIE in Brookhaven Town. PPL Global has proposed the 300 MW Kings Park Project to be built on a parcel fronting on Town Line Road in the Town of Smithtown. The Keyspan and ANP projects will be of the combined cycle design using large combustion turbines (150 MW each) coupled with waste heat boilers with steam turbines. Large units of this type will typically run greater than 90% of the time and have efficiencies in the high 50% range. The PPL Global plant will be a simple cycle combustion turbine plant consisting of six General Electric LM 6000 units. It will operate in peaking to intermediate service and is expected to run less than 50% of the time. All three projects have submitted an extensive application to the NYS Board on Electric Generation Siting and the Environment under the Article X regulations. The agency review cycle has a backstop of twelve months for a decision after the application has been deemed complete by the Siting Board. An adjudicatory public hearing can be held if there is organized and extensive opposition to the project. The entire process can take from 18 months to two years to complete. Thus none of these three units are expected to be operational in the near term considering that they will require about 24 months to construct.

As was the case for the LIPA 2002 units, each of the three large projects have conducted public information sessions to provide one on one opportunities for members of the public to learn about the projects and their impact on the local community. Several public sessions have been held with the result indicating public opposition to the plants. Most opposition stems from the local desire to have the plant built somewhere else.

The Spagnoli Road Project has encountered active opposition from some of the commercial businesses near the site even though it is in an industrial park. Opposition to the plant stack height was voiced by pilots using the nearby Republic Airport. In response a shorter stack has been proposed. Because the site is considered part of the ground water recharge zone, opposition to storage of back up fuel oil led Keyspan to abandon the capability to use oil on a stand-by basis in favor of only natural gas fuel.

The Kings Park project has encountered opposition in some ways stemming from its proximity to the nearby Huntington Town capped landfill and operating resource recovery plant.

The ANP Project has encountered opposition relating to the storage of fuel oil on site and the need for water to make up that lost through cooling tower evaporation. The Town of Brookhaven has indicated that the project would be better received at the Shoreham site and LIPA has registered concerns over the transmission reinforcement necessary. Recently the PSC staff has come out in support of the project.

For these large generation projects requiring an Article X approval, avoidance of a protracted adjudicatory public hearing is essential for a timely decision. With the \$300,000 intervener fund provided by the Article X process, the opposing parties to a project have the resources to provide expert testimony and extend the hearing process significantly.

Project Permit and Licensing Process

The LIPA program for the 2002 Combustion Turbine Projects is an example of the use of smaller generation projects dispersed around Long Island to meet a critical need. By limiting projects to 79.9 MW, the Article X regulatory process with its two year built in time schedule to obtain a construction permit is avoided. Many of the parties opposed to new power plants object to this size exemption.

The NY PSC process for licensing large electric generating plants under the Article X regulations, requires an extensive analysis of the environmental impacts of the project. Applicants submit a preliminary description of their project in a “Scoping Report”, to bring the project design to the attention of the PSC and DEC staffs. A list of formal stipulations or agreements is developed that prescribes the nature of the environmental studies to be conducted; and protocols are established for the analysis of air and water discharges from the plant. If there is organized opposition to a project, the opposing groups are given an opportunity to comment and modify the stipulations. Following this phase, the applicant will complete the Environmental Impact Statement (EIS) Report for submittal to the Siting Board.

The Siting Board consists of the Commissioners of the five NY State agencies directly involved in the assessment of the project, including: The Public Service Commission (Chairperson of the Siting Board); Department of Environmental Conservation (DEC); Department of Health; Department of State; and Department of Transportation. In addition the Governor appoints two representatives from the community in which the project is located. The Board’s review process is formal and involves legal filings. Once the Board has determined that an application (EIS) is complete, then it has one year to complete its review and either issue a permit or deny it.

Throughout the agency review of the EIS, there is opportunity for public participation in the process. The local governmental entity is a formal participant by Board rules. Questions (interrogatories) can be posed by the participants as well as the state agencies and the applicant must supply answers. At the end of the agency review, the participants can request a formal public hearing to resolve any disputes. Sworn testimony of experts is considered by the Siting Board at formal public hearing sessions. By law, a \$300,000 fund is required to be made available by applicants for use by interveners to bring expert testimony to the Board. A contested public hearing can extend the process beyond the twelve-month

window at the Board's discretion. This costly and extended licensing process has delayed many projects.

If a project requires an overhead electric transmission line of 138 KV or higher, a similar extensive environmental review is conducted by the NY PSC under its Article VII regulations. A formal report is submitted by the applicant to consider alternate routes for the proposed line and the environmental impact of these routes. Opposing groups can request a formal public hearing much the same as in the Article X process. Here there is no requirement that the PSC issue a decision in twelve months.

Most of the proposed large plants for Long Island have been designed to minimize groundwater use by incorporating dry cooling instead of wet or evaporative cooling towers. Such plants do not pose a threat to coastal resources and wetlands. The elimination of once through condenser cooling water use of the local waterways represents a significant reduction in environmental impact. The small simple cycle combustion turbine plants use no evaporative cooling.

Alternative Energy Supply Options & Conservation

In securing Long Island's energy supply one must always be mindful of the isolation of an island service territory even with some new transmission interconnections being added in the future. Because of this alternative energy supply options beyond oil and gas fueled thermal power plants may make even more sense for Long Island than for other locations.

Consistent with this, LIPA has been carrying out an aggressive program of promoting alternative energy supply options almost since its inception. These options have included: solar electric applications for commercial and residential use; geothermal heat pumps; grid connected fuel cells; and wind turbines. In fact LIPA recently announced a project that will site five 50kw wind turbines on Suffolk County farmland.

LIPA's efforts in pursuing alternative energy options also have been complemented by its conservation program. This program strives to conserve energy and reduce peak electrical demand: through greater utilization of compact fluorescent light bulbs; high efficiency washing machines; high efficiency air conditioners; and energy efficient building design.

Alternative energy options and conservation will always be an important component of any plan to secure Long Island's energy supply.

Review of Electric Load Forecasts

LIPA's analysis of the 2001 summer peak and its projections for 2002 have led to the LIPA sponsored 2002 Combustion turbine project. Forecasting a deficit of greater than 300 MW for the summer peak load, LIPA initiated the fast-track plan to fill the near term deficit. In testimony before the PSC in proceedings for certificates of public need by the project developers, LIPA officials articulated this 2002 summer need and estimated future load growth of up to 100 MW per year in succeeding years. These forecasts have been reviewed by the NYS PSC staff and by letter of October 10, 2001, Chair Maureen Helmer of the PSC strongly endorsed the 2002 program. The New York Independent System Operator (NYISO) in a press release of November 1, 2001 provided an independent assessment of the Long Island load deficit and also strongly supported the LIPA program .

From these separate reviews, it appears that there is some consensus on the urgent need for on-island generating capacity to meet the forecasted summer peak for 2002 and the expectation of up to 100 MW per year growth in the future. (See Appendix)

Observations and Recommendations

Security

Long Island's large population and vibrant economy results in an ever-increasing need for more energy. Supplying this need even under normal circumstances is difficult because of the unique geography of the island and its limited interconnections with the outside World.

With the events of September 11th, yet another concern has complicated the energy supply picture on Long Island- the vulnerability of its energy supply system to acts of terrorism. The question now arises on how this can be dealt with in the context of securing Long Island's energy supply.

Aside from making every effort to protect the physical integrity of existing facilities, energy supply becomes more secure with flexibility provided by redundancy. In the case of electric supply this is achieved through new generating plants, improved electric transmission systems, new electric interconnections, new gas supply pipelines, conservation and alternate energy supplies. The key here is diversity of generating sites, electric and gas transmission interconnections and fuel sources.

With business as usual, the concept of redundancy and a potential for an oversupply would be immediately challenged on the basis of financial risk for the customer and increased environmental impact. Fortunately, however, with competition in energy supply and modern generating technology, this does not have to be the case.

As cited previously there are presently at least several major electric generating projects being developed on Long Island by private interests. In contrast to the old system for vertically integrated utilities, the customer will not directly bear the financial risks associated with these projects through regulated rates. Instead private developers will finance the projects and assume the financial risk of

their profitability. The Long Island customer will pay for electricity from these projects only when it can be supplied less expensively than from other sources. In fact these units would run minimally unless they can operate more cheaply than competing sources. [An exception to this would be when LIPA contracts on a firm basis for a portion or all of the capacity from a unit. In this instance the customer would be liable for the fixed cost of the contracted capacity.]

In addition, the technology of the new electric generating units allows them to operate with reduced environmental impact from air emissions, as compared to existing units on Long Island. If indeed a surplus capacity situation would develop, the new units would displace the operation of the older more costly and less efficient units. The result would be lower costs for the consumer and less impact on the environment.

When the security issue and increasing demand for energy are taken into account, it is fortunate to have private developers willing to make an investment in modern generating facilities here on Long Island. Recently on a national scale there have been a number of power project cancellations. The reasons for this include the down economy, fears of a power surplus developing and lower energy prices. In this context, ironically, it should not be a concern for Long Island that too many power facilities will be built, but rather that developers following the national trend will reconsider their plans and decide not to build here.

Much of the same can be said for gas pipelines and electric interconnections. They are needed for security of supply and to address increasing energy needs. Long Island stands to benefit economically and environmentally from these projects and the financial risks their developers are willing to take.

Project Permit and Licensing Process

The use of the SEQRA environmental licensing program for smaller plants under 80 MW is an appropriate safeguard for protecting the public. The SEQRA process has been used successfully for environmental evaluation of many different kinds of projects and it allows for public participation in the review cycle. Smaller plants and especially peaking plants that use natural gas as their primary fuel, when equipped with selective catalytic recombiners (SCRs) are outfitted with the best available emission control technology.

The siting of large scale facilities, however, most often leads to disputes between project proponents and local groups. Attempts are made to deal with this through the Article VII licensing process for electric and gas transmission projects and Article X for large electric generating plants. Many times those on all sides of the question go away being disappointed by what results from these certification processes.

A better way to deal with community opposition to projects is to provide an effective forum early on in the permitting process to provide information and allow frank discussion on the issues. The aim would be to reach compromise on as many issues as possible. This could be facilitated by a third party impartial arbitrator who would resolve disputes in a mandated, well-defined format. The role of this arbitrator potentially could be filled by an academic institution with experts in environmental and institutional problem solving.

Such an early dispute resolution process could minimize the contentiousness of the Article X public hearing. In any event, a way must be found to streamline this licensing process to shorten the time and reduce the cost of obtaining a construction permit.

Similarly the Article VII licensing process needs to be streamlined. Most important, it needs to be conformed to the Article X process by requiring a definite time period for decision.

LIPA Supply Contract Strategy

LIPA has a responsibility to provide sufficient electric energy to accommodate near term growth and ensure reliability. Their fast track program to provide 400 MW of peaking capacity by the summer 2002 is prudent and justified in the face of an independently verified need.. To date this plan has been effectively executed.

Beyond the near term, LIPA is also being challenged by the transition to a competitive market place for electricity. This will entail many decisions for the authority which require much study and guess work on what the future holds. In the process, LIPA must exercise considerable care in making contracted commitments for future supplies. Long term contracts can represent significant financial risks for LIPA customers. A recent example of this is the contracts California entered into to address the power supply crisis in the state. Today, what appeared to be a prudent contracting strategy in California last year is economically questionable because power can be obtained at lower costs than established by those contracts.

Great care must be exercised in mortgaging the future because no one can accurately predict what will happen in the long term. This is especially critical when viable spot markets are developing and private interests represent an option which insulates electric customers from financial risk.

LIPA Purchase of Keyspan Generation

LIPA is currently evaluating whether or not to exercise a one time option as part of the original acquisition of LILCO's transmission and distribution system to purchase Keyspan's electric generating plants. Under the current arrangement LIPA comes as close as you can to owning the plants without

actually owning them. They basically pay for the cost of capacity and energy on a cost of service basis, through a fifteen year agreement which has an option for a fifteen year extension .For the most part, if LIPA can purchase the plants at a reasonable premium to book value, it would probably result in a cost reduction for customers. This is because LIPA could finance the purchase with tax exempt bonds and possibly obtain some modest savings through a new negotiated operating contract with Keyspan or an alternate provider. In fact LIPA has gone out for bids to provide operating services.

If this was the end result, the purchase would be difficult to criticize other than to say LIPA now resembled the old LILCO. However, under charges that LIPA ownership would stifle future competition on Long Island, the authority has indicated that it may consider reselling the plants after they are purchased to encourage competition.

With this possible strategy, questions arise on what the cost impact would be to consumers.

Presumably LIPA would sell the plants at least at the value they purchased them. They would also contract for cost based rates on the purchase of electricity from the plants. The purchasers would be a private entity who would function for the most part in the same manner as Keyspan. On this basis it is hard to see how customer rates could be reduced by reselling the plants. Since the objective of competition is of course to reduce rates, it is not clear that this strategy is an attractive alternative.

It should be noted here, however, that the market value of the plants is probably greater than current book value. Sites for generation on Long Island are quite limited. The existing plant sites have the right zoning and the legacy of being dedicated to electric generation. In fact the existing sites may be the only reasonable locations on Long Island where large sized plants can be built. This added potential may increase the value of the existing plant to beyond book and could be a factor in justifying the resale of the plants at some point in the future. Of course, this will also influence the price LIPA would have to pay Keyspan to purchase the plants in the first place. On the other hand, the fact that recently,

the asset value of power facilities has been on the downtrend, should not escape the attention of all parties.

The bottom line here is that if an acceptable price can be negotiated for the plants, it may make sense for LIPA to purchase them. Beyond that, LIPA, on an ongoing basis once the purchase is made, must evaluate the benefits of selling the plants or leasing the sites so that the financial risk and cost to the customer would be minimized. A large part of the decision will hinge on the future availability of capacity and the successful evolution of a competitive market for electricity.

Alternate Energy Supply Options & Conservation

LIPA should continue to aggressively promote the utilization of alternate supply options and conservation as a key part of its energy program.

As part of this, demand side management programs promoting peak load pricing need to be enhanced to assist in lowering peak summer load.

Distributed generation using small fuel cells or micro turbines at individual homes or businesses while promising, will require enhancements to the gas supply system. The electric distribution system must also be upgraded to provide back-up for these units during outages as well as for operating flexibility.

Renewable resources such as wind power and thermal electric systems should continue to be actively promoted. LIPA's budget for this seems adequate to support future efforts.

Finally, even with an aggressive plan for alternate energy options, the capacity potential for this amounts to less than 50 MW and cannot be viewed as a complete substitute for generating additions. This is especially so when one considers the amount of time it will take to reach the 50 MW level.

ANP Project

The 580 MW ANP project proposed for Yaphank has met opposition from both LIPA and the Town of Brookhaven. In retrospect it is unfortunate that a project this size was not located on a site which had been earmarked for such development. With a site like Shoreham perhaps the opposition from LIPA and the Town might not have come about.

In any event, the capacity represented by this project is needed on Long Island. The developer is taking the financial risk and it appears that the project could result in lower energy costs as compared to existing facilities. Technologically, the plant will operate efficiently and produce less emissions than existing plants. And for these reasons the plant should probably be built.

On the other hand, there has to be a recognition that the siting of the ANP plant at its proposed location will affect the pattern of electric transmission from the east to the load centers of western Long Island. Because of this there should be an equitable sharing of the costs of transmission upgrades between LIPA and ANP. Perhaps there could be some creative cost savings proposal developed which would make use of the extra capacity designed and partially implemented for the existing transmission lines to accommodate the large nuclear plants originally planned for eastern Long Island.

Even though Long Island could benefit from this capacity, all of its related costs must be fairly allocated.

Appendix