Link KeySpan and ANP Projects: Best Route to Long Term Energy Supply for Long Island

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LONG ISLAND
UNIVERSITY

Center for Management Analysis

College of Management

School of Public Service

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Abstract

The more things change relative to Long Island's electric supply scenario and the need for additional generation, the more they stay the same. Up to now the Long Island Power Authority (LIPA) has dealt with a rapidly increasing demand for electricity on an emergency basis through the installation of small sized peaking units and temporary portable generation. Still, additional baseload electric capacity is needed for Long Island.

In its latest move to address this urgent need, LIPA has requested proposals to be submitted in early September for new generation sources to meet Long Island's future energy requirements. The new round of bidding seeks sources both on and off of Long Island. While many options will likely be proposed, a combination of the 250 MW Spagnoli Road Project, sponsored by KeySpan, and the 580 MW Brookhaven Project, sponsored by American National Power (ANP), appears to offer the most practical and realistic choice for meeting future demand, especially in light of the Blackout of 2003. Both of these projects have already gone through the comprehensive Article X licensing process and have received the necessary permits to proceed. Most importantly, LIPA's concern for bringing on more competition in the generation of electricity on Long Island in the case of the KeySpan project, and its concern about natural gas supply and electric transmission and reinforcements for the ANP project can successfully be addressed if both projects are developed by a partnership between KeySpan and ANP.

History of Recent LIPA Projects

In order to meet sharply increasing peak requirements over the summers of 2002 and 2003, LIPA pursued the construction of simple cycle combustion turbine electric generating plants by private developers. As part of this, LIPA signed Power Purchase Agreements (PPA) with developers committing to buy the output of the units for periods ranging from three to twenty five years. Additionally, LIPA on an emergency basis rented trailer mounted combustion turbine units to supplement the permanent units and provide insurance against the late completion of the peakers. During 2002, approximately 415 MW of simple cycle capacity was installed at six separate sites by three generating companies new to Long Island, as well as KeySpan. In 2003, about 100 MW of new simple cycle units were added at two sites by developers other than KeySpan. Also, 200 MW of temporary trailer mounted capacity was rented for the 2002 summer and 120 MW for the 2003 summer.

All of the permanent peaking units installed in 2002 and 2003 are relatively small combustion turbines in the 25 to 50 MW size range. While helping to meet the unusually high loads during the summer of 2002, these units have a relatively poor thermal to electric conversion efficiency of about 30%, and are intended to operate only during periods of high electrical demand because of their high operating cost. In addition, probably because of the short time schedule to construct these plants, their final costs were much higher than expected.

Proposed Projects

LIPA has suggested that perhaps Long Island now has sufficient new peaking capacity and it is time to seek proposals for more economic baseload sources of supply. However, over the past few years other larger more efficient projects have been proposed to meet the Island's long term generation needs. The two most prominent are the KeySpan sponsored 250 MW Spagnoli Road Plant and the ANP sponsored 580 MW Brookhaven Plant. Both incorporate more efficient combined cycle technology and operate at efficiencies of greater than 50%, almost twice that of the simple cycle peaking plants. These combined cycle plants utilize large combustion turbines in the 150 MW size range, in combination with steam turbines and air cooled condensers. In each case, the sponsor completed the difficult New York State Article X power plant environmental licensing process and received permits from the New York State Board on Electric Generation Siting and the Environment to begin construction. These state of the art facilities were found by the Board to meet all federal and State air and water emission standards and employ the best achievable environmental control technology.

The Article X licensing process was completed over a period of almost two years at a cost of several million dollars per project to each sponsor for engineering, environmental and legal consultants, not to mention the many thousands of man hours for New York State Public Service Commission and Department of Environmental Conservation expert review. The process also included participation by local opponents of the projects in adjudicatory public hearings where opposition experts were publicly funded.

It should be noted that the Article X licensing law in New York State has expired. Any new proposal, for Long Island, therefore, would face the uncertainty of not having a one stop licensing process. The State Legislature failed to renew the law during its spring term and the next opportunity for consideration would be in a special session which maybe held in the fall. Presently, without the Article X process, all new projects would have to follow the State Environmental Quality Review Act (SEQRA) procedure involving multiple federal, state and local agency review to receive necessary permits. This would require an extensive amount of time, especially if there was dedicated opposition to a project.

In spite of the advanced status of the Spagnoli Road and Brookhaven projects, LIPA has chosen not to sign PPA's with KeySpan or ANP for the output of these plants. In today's economic climate in the utility industry, after the Enron Bankruptcy, large generating projects cannot be financed without a PPA. In the case of Spagnoli Road, LIPA appears to have no major technical issues with the project but has indicated the desire to bring more companies into the Long Island generation market to compete with KeySpan. For ANP, LIPA cites concerns over the timing of construction for the Islander East gas transmission pipeline supplying natural gas to the project and the cost of electric transmission lines required to bring power west from Brookhaven to the Nassau/western Suffolk load center.

Unwilling to choose Spagnoli Road or Brookhaven, and also because of the uncertainty of whether or not better options may exist, LIPA has opted to issue a new request for proposals seeking 500 MW of electric supply to be available by 2006.

Consideration of Electric Transmission and off Island Generation

It is difficult to imagine that any off Island alternatives for electric supply could be competitive with the KeySpan and ANP projects because they would require additional transmission interconnection capacity for the region. Similarly, apart from licensing issues, electric transmission and fuel supply obstacles would make it unlikely another greenfield development on Long Island could be superior to the Spagnoli Road and Brookhaven plants.

Because of Long Island's geography and its limited electric transmission interconnections to other New York companies and with Connecticut utilities, LIPA is required by the New York Independent System Operator (NYISO) to have 80% of its peak demand provided by on Island generation. Events associated with the Blackout of 2003 underscore the prudency of this. While the LIPA RFP permits off island projects and transmission lines, economic considerations will likely preclude such projects, particularly in comparison to Spagnoli Road and Brookhaven. Construction of new electric transmission lines across Long Island Sound have been severely impacted by Connecticut's Long Island Sound moratorium and the opposition of that State's Attorney General, as evidenced by the controversy surrounding the 300 MW Cross Sound Cable project. This critical link has been completed since the 2002 summer at a cost of hundreds of millions of dollars and is still not in full-time commercial operation due to challenges to the permits by the State of Connecticut. This hostile climate is expected to continue and is likely impacting the licensing of the Islander East Gas Pipeline project that will come across the Sound at Shoreham.

Another example of a problematic electric transmission project for Long Island is the Neptune Project that has been proposed for construction along the Atlantic coast from Maine to New Jersey with a spur coming ashore in the Nassau County area. Local objections to the original location of the onshore substation have required the project to seek alternatives.

Transmission reinforcement considerations on the LIPA grid will likely affect almost any other site on Long Island that is proposed for new generation. This is certainly the case in the heavily populated south Nassau area of old 69KV and 33KV lines, as well as the eastern Suffolk region where the 138KV system will need to be expanded. Since natural gas is burned in combined cycle units, pipeline extensions would also be an issue for other sites on Long Island.

Merits of the Spagnoli Road Project

The Sapgnoli Road site is well-sized and located in an industrial area of the Town of Huntington. It is adjacent to the LIPA 138KV Spagnoli Road Substation, permitting a short electrical interconnection to the power plant. KeySpan's gas transmission lines are nearby on Route 110. The highly efficient plant design is state of the art and includes an air cooled condenser to eliminate the consumptive use of ground water for evaporative cooling towers. Natural gas will be used exclusively for fuel, eliminating the need for oil storage facilities and the resultant concern for spillage into a ground water recharge zone. A selective catalytic recombiner would be installed to reduce NOX emissions, as well as a carbon monoxide catalyst to reduce CO emissions.

In terms of the construction schedule, with the Article X permits in hand, the sponsor can realistically bring this plant on line in approximately 24 months from the start of construction.

Merits of the Brookhaven Project

The Brookhaven Site is large and located in an undeveloped area of the Town of Brookhaven. As with the Spagnoli Road facility, it will incorporate the latest combined cycle technology, using two 150 MW class combustion turbines, a steam turbine and an air cooled condenser. The LIPA Brookhaven electric transmission and distribution substation is adjacent to the site and permits a short interconnection. Natural gas is to be used exclusively as the fuel for the project, eliminating the need for oil storage tanks in this ground water recharge zone. As presently proposed, the project is to be supplied natural gas via the Islander East Pipeline Project. A gas transmission pipeline constructed along William Floyd Parkway would bring gas to the site. As an alternate, after reinforcement, gas could be supplied from the KeySpan system. Also, as in the case of Spagnoli Road, NOX and CO catalysts will be employed to reduce emissions.

In terms of the construction schedule, with the Article X permits in hand, and assurance of adequate gas supply, the sponsor could bring this plant on line in approximately 30 months from the start of construction

Synergy of an ANP-KeySpan Partnership

A partnership between KeySpan and ANP in developing the Spagnoli Road Project and Brookhaven Project has many attractive features and is the most realistic and practical alternative for meeting future generating requirements on Long Island. It also addresses positively LIPA's primary concerns for going forward with either project.

The gas supply for the Brookhaven site has been identified as an issue. KeySpan is the regulated natural gas utility serving all of Long Island and, as such, would very likely be involved in the transmission of natural gas to any project on the Island. As a partner in the Brookhaven Project, it would be in KeySpan's interest to use its expertise in the purchase and transportation of natural gas to benefit the project. In the event that the Islander East Pipeline is not built, KeySpan could likely devise an alternative gas supply scheme for the Brookhaven Project, utlizing its existing gas supply network. In any event, as the local gas supplier and part owner of the Islander East Pipeline, KeySpan is in an excellent position to ensure the fuel supply for the Brookhaven Project.

A KeySpan and ANP partnership would also allow coordination and optimization of the construction schedule for the projects. As such, the smaller Spagnoli Road Plant with a shorter construction schedule could be built for 2005 service and the larger Brookhaven Plant for 2006/2007 operation. This would enable LIPA to add capacity at a rate more closely aligned with load growth projections. Another benefit of a partnership is that KeySpan already operates power facilities on Long Island and has existing personnel available to service the Brookhaven

facility. With multiple plants, KeySpan would in a position to schedule maintenance activities to achieve cost savings and reduce manpower requirements.

Lastly, an ANP partnership with KeySpan would bring a large alternative entity, ANP, to the Long Island Generating Business. This would address LIPA's concern over the need to introduce more competition in the generation of electricity on Long Island.

Conclusion

Over the past several years there has been considerable attention given to the need to develop additional generating capacity to satisfy the increasing load growth on Long Island. This will get even more scrutiny following the Blackout of 2003. LIPA has certainly recognized this need, but has concentrated on immediate needs with a number of short term fixes, including fast track simple cycle peaking units and even the use of rental trailer mounted generation. As a consequence, the installation of larger capacity, highly efficient combined cycle generation has not progressed.

Before LIPA's present Request for Proposals was issued, two projects, the KeySpan Spagnoli Road Plant and the ANP Brookhaven Plant, were proposed. Combined these facilities could add up to about 800 MW to Long Island's generating capability. Both of these plants have gone through the extensive Article X licensing process and have received permits to construct. LIPA, however, has expressed reservations about both proposals. In the case of Spagnoli Road, LIPA has concerns over competion and the amount of capacity that KeySpan presently operates on

Long Island. For the Brookhaven project, LIPA has concerns over the gas supply for the plant and the need to for transmission reinforcements.

While LIPA's concerns are not without merit, there appears to be an obvious solution that could satisfy LIPA and allow these critical projects to move forward in a timely way. That solution is to encourage a partnership between KeySpan and ANP that would build on synergies that exist between them. KeySpan, as the gas utility on Long Island, could bring its expertise to bear in assuring a reliable gas supply for the Brookhaven Project. ANP could be a new provider of power on Long Island, addressing LIPA's concern for promoting competition with KeySpan.

If this partnership was to be created and LIPA moved forward with the projects, Long Island electric customers would benefit in the long term by the establishment of a reliable and highly efficient source of generating capacity for the region, and have something in place that would aid in recovering from an incident such as the Blackout of 2003. KeySpan and ANP also would benefit because, without a PPA from LIPA, it would be extremely difficult to finance and build these projects. In fact, the absence of a PPA could contribute to the eventual demise of the projects.

Thus, faced with this potential win-win situation, LIPA should be encouraged to serve as a catalyst for the formation of a partnership between KeySpan and ANP for the Spagnoli Road and Brookhaven projects. In reality, there is really very little alternative to this, since it is highly doubtful that any proposals emerging from the current LIPA solicitation would be preferred in

terms of a schedule for licensing and construction, resulting cost to the ratepayer, reliability and impact on the environment.