

This Chapter addresses other potential environmental impacts associated with the project including short- and long-term impacts; unavoidable adverse environmental impacts; irreversible and irretrievable commitment of resources; growth inducing aspects of the proposed action; and effects of the proposed action on the use and conservation of energy. A detailed assessment of potential cumulative impacts associated with the construction and operation of the project is presented in Chapter 16.0, "Cumulative Impacts."

17.1 REASONABLY RELATED SHORT-TERM AND LONG-TERM IMPACTS

This section presents the short-term and long-term impacts associated with the project as identified in the EIS environmental analyses.

17.1.1. SHORT-TERM IMPACTS

Short-term impacts associated with the project are anticipated as a result of indirect construction-related disturbances; these include the presence of construction equipment and workers at the project site and associated noise, fugitive dust and traffic increases that temporarily impact adjacent or nearby land uses. In as much as the project area is characterized by light industrial development and only a limited number of residences are located within the one-mile primary study area, the impact of these temporary construction activities should not be significant. The most notable short-term impact would result from traffic associated with the peak construction worker period. However, the peak construction worker period would last for a relatively short time during the entire construction period. (See Section 17.2 below) Detailed analyses addressing both the potential short-term construction impacts of the project and the potential short-term cumulative construction impacts are discussed in detail in Chapter 15.0, "Construction Impacts."

17.1.2. LONG-TERM IMPACTS

Long term impacts associated with the project are those anticipated to occur during facility operation for the life of the project. Accordingly, long-term land use, visual, traffic, air quality, and noise impacts are anticipated.

A. LAND USE IMPACTS

Construction of the project would result in the development of vacant forested land and the siting of an industrial facility at an appropriately industrial-zoned parcel. The proposed electric generating use is an allowed Special Permit use within the Town's L-1 District as established by the Town of Brookhaven Zoning Ordinance. Thus, from a land use planning perspective, the Town specifically envisions development of the property for the purpose of electric generation, among other possible commercial and light industrial uses. Further, as indicated in Section 3.2.3, the project is compatible with

existing and proposed land uses within the one-mile radius study area, as well as the broader region.

B. VISUAL IMPACTS

As detailed in Chapter 6.0, “Visual Resources and Aesthetics,” the Caithness Long Island Energy Center would likely be visible from a few locations within the project’s two-mile study area, but because of generally level topography of the project area and existing mature vegetation, which would continue to buffer the site, project visibility throughout the study area would be intermittent. The project would not be visible from the hamlet of Yaphank and the residential areas in the northern portion of the two-mile study area. There would be no effect on the Carmans River recreational areas, outside of the two-mile study area because the project would not be visible from any of these heavily vegetated areas, whether within or outside the reaches of the river that flows through Southaven County Park. The County Park, Twelve Pines Park, Town Park, Mill Pond Golf Course and the Yaphank Historic District are other areas within a two-mile radius that would not have views of the project. No National Register of Historic Properties-listed properties would be visually impacted by the project. Similarly, any intermittent project views from the overlook at Suffolk County Vietnam Veterans Memorial, located several miles outside of the two-mile study area, would not adversely impact recreational visitors. The lack of potential project visibility from these specific locations was confirmed on October 7, 2004 during the stack height demonstration using a tethered weather balloon.

For those viewpoints where the project may be visible, the probable effects would be minimal. The project stack would be intermittently visible to local motorists, particularly driving along Patchogue Yaphank/Sills Road in either direction at various intervals along the stretch between the LIRR and Horseblock Road. The project stack, air cooled condenser or Heat Recovery Steam Generator (HRSG) would be intermittently visible to local motorists driving along Old Dock Road within the Sills Industrial Park, at various intervals between the intersections of Patchogue Yaphank/Sills Road and Todd Court. Visibility of the project would be limited from Horseblock Road due to the distance between the project site and the roadway, and intervening vegetation and existing development along the north side of Horseblock Road. The project stack would be visible from the LIE near Exit 67, but only from a minor portion of the elevated exit ramp on the south side of the LIE. This viewpoint offers an isolated area of project visibility due to a slightly elevated rise, adjacent open fields and lower trees surrounding the fields.

C. TRAFFIC IMPACTS

A detailed assessment of the potential traffic impacts associated with operation of the project was presented in Chapter 8.0, “Traffic and Transportation.” The analysis considered the impact, if any, of the traffic generated by the operation of the proposed project and reflected the conditions that will occur when the facility is in operation. The results of the traffic analyses revealed that there would be no impacts created at any of the study intersections during the operation of the project for either the morning or evening peak hour periods.

D. AIR QUALITY IMPACTS

Operation of the project would result in the emission of criteria pollutants. As detailed in Chapter 9.0, "Air Quality", proposed facility emissions would not result in a contravention of state and national ambient air quality standards. To determine this, anticipated facility emissions were modeled in accordance with the approved Air Quality Modeling Protocol submitted to the New York State Department of Environmental Conservation (DEC) and United States Environmental Protection Agency (EPA). Final project emission rates and stack parameters were used in conjunction with the methodologies presented in the Modeling Protocol. The results of the air quality dispersion modeling revealed that the maximum-modeled ground-level concentrations for the project are less than the EPA defined Significant Impact Levels (SILs) and the total ground-level concentrations (i.e., sum of maximum modeled and background concentrations) are below the National Ambient Air Quality Standards (NAAQS) for all pollutants and averaging periods. Therefore, the potential long-term air quality impacts of the Caithness Long Island Energy Center are not considered significant.

E. NOISE

Operation of the project would result in a long-term increase in ambient noise levels in the project area. The potential significance of this increase in ambient noise levels is addressed in Chapter 10.0, "Noise." The results of the study indicate that proposed facility would not result in significant noise impacts. Operation of the proposed facility at all locations would comply with DEC noise guidelines and the Town of Brookhaven noise standards.

F. ENERGY

The project would result in long-term beneficial energy impacts. The purpose of the project is to provide an efficient, reliable, and competitive source of electric energy to assist in addressing the need for additional electricity, increased competition, and improved system reliability on Long Island. The facility would generate approximately 350 megawatts (MW) of electric energy for the LIPA and its customers.

17.2 ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

Unavoidable adverse impacts are defined as those that meet the following two criteria:

- There are no reasonably practicable mitigation measures to eliminate the impact; and
- There are no reasonable alternatives to the proposed project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

As detailed in Chapters 3.0 through 16.0 of this EIS, the proposed development would not result in adverse environmental impacts, with the possible exception of the traffic impacts that may be experienced in the project area during the peak construction period.

The potential traffic impacts associated with the peak construction of the proposed facility are detailed in Section 15.4. Project construction traffic would be comprised primarily of workers traveling to and from the site. Although the number of workers would vary on a daily basis depending on the type of work scheduled, the construction traffic analysis conservatively considered the approximate peak three-month construction period. During all other months of the 26-month construction period the number of workers would be significantly less than that required during the peak period. The level of service analyses conducted for the peak construction period revealed that intersections experiencing temporary impacts during the construction phase consist of:

- Horseblock Road/CR 16 at LIE North Service Road
- Horseblock Road/CR 16 at LIE South Service Road
- Horseblock Road/CR 16 at Sills Road/CR 101
- Horseblock Road/CR 16 at Bellport Avenue/Station Road

Peak construction condition impacts associated with the Caithness proposed project are not considered significant impacts since they are short-term, lasting approximately three months. Furthermore, the peak construction period analysis was conservative since project workforce agreement specifies start times of 6:30 AM, prior to the morning peak hour, and the peak arrival of the workforce was superimposed onto the AM peak hour of the intersections. Accordingly, it is anticipated that construction impacts during the AM peak hour would be less than presented in this analysis. Regarding the PM peak hour impacts, the analysis assumes a peak construction period second shift, which may not be required. Accordingly, it is anticipated that actual construction impacts during the PM peak period would also be less than presented in the analysis. More importantly, however, are the substantial volumes generated by other planned developments in the project area that greatly contribute to the conditions present during the construction phase. As indicated in Section 15.4, impacts arise at the above intersections even without the addition of the projected construction workforce. Accordingly, the traffic volumes generated by the other planned developments in the project area, rather than the proposed Caithness Long Island Bellport Energy Center, are primarily governing the magnitude of improvements that would be needed to alleviate the construction impacts. The facility's operational condition in contrast represents the permanent characteristics of the site that traditionally dictates the identification of impacts. There are no impacts created at the intersections once the site is fully operational, and therefore, Caithness is not proposing mitigation measures at this time. The need for improvements that would alleviate the impacts of the construction traffic would be coordinated with the Town of Brookhaven Division of Traffic Safety and the Suffolk County Department of Public Works.

17.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

This section presents those natural and human resources identified in the EIS environmental analyses that will be consumed, converted, or otherwise made unavailable for future use if the project is implemented.

The permanent resource commitments associated with the proposed Caithness Long Island Energy Center are described below.

17.3.1. LAND USE

Construction of the project would result in the development of approximately 15 acres of vacant industrially zoned property for the purpose of electric generation. The project site is located in the Town of Brookhaven's L-1 District, which expressly allows electric generating facilities by special permit. Thus, from a land use planning perspective, the Town specifically envisions development of the property for the purpose of electric generation, among other possible commercial and light industrial uses.

17.3.2. COMMUNITY FACILITIES

No community facilities would be committed in an irreversible or irretrievable manner.

17.3.3. CULTURAL RESOURCES

Based on the Phase I cultural resource assessment prepared for the entire 96-acre parcel, archaeological resources are not expected to be found on-site. Accordingly, no cultural resources would be committed in an irreversible or irretrievable manner.

17.3.4. EARTH AND TERRESTRIAL RESOURCES

The construction of the proposed project will result in the permanent clearing of approximately 17.2 acres of forested pitch pine-oak stands. The proposed project would alter the existing site topography, through filling and grading, but also would change the terrestrial ecology of the site through the removal of vegetation and the permanent loss of potential wildlife habitat. However, the proposed project site does not form a component of a wildlife corridor (i.e., serve as an undisturbed habitat patch that links two other undisturbed areas). Rather the site is located along the edge of a forested stand and can be said to comprise edge habitat. Consequently, the movements of wildlife would not be disrupted. The Carmans River forms the only wildlife corridor in the vicinity of the site, which includes floodplain wetlands and contiguous upland forested stands in addition to the river itself. This system is situated approximately 2 miles northeast of the project site. Moreover, the wildlife species that utilize pitch pine-oak forested stands would continue to have access to a significant amount of habitat available within the undisturbed forested areas present within surrounding project area. As previously indicated in Chapter 14.0, "Terrestrial Ecology," no rare threatened, endangered species, populations, communities, or associated habitats would be impacted by the Caithness Long Island Energy Center.

17.3.5. WATER RESOURCES

Operation of the proposed facility would result in an annual water consumption of approximately 18.4 million gallons. The project proposes to draw water from the Suffolk County Water Authority (SCWA) distribution system to satisfy process and sanitary water supply needs. SCWA has issued a Letter of Availability for the proposed project (See Appendix D). The facility would be a regular ratepayer of the SCWA, and would not operate under any special agreement with SCWA. The project requires no upgrades to

the general distribution system (that is, no additional or replacement pumps or storage capacity).

The project avoids any adverse water supply impact through adopting air cooling and incorporating other water minimization measures such as recycle/reuse of HRSG blowdown and inlet air cooler blowdown. In addition, the project includes installation of a raw water/fire water storage tank and demineralized water storage tank, which would both serve to minimize short-term peak impacts on the local distribution system and ensure continued facility operation during any temporary curtailment in water supply services.

17.3.6. AIR RESOURCES

No air resources would be irreversibly or irretrievably committed as a result of the proposed project.

17.3.7. CONSTRUCTION MATERIALS

Although the construction materials to be used for the proposed project are physically retrievable, it would likely be economically infeasible to do so; these materials must, therefore, be considered irretrievably committed resources. However, the project would incorporate recycling programs to minimize waste materials to the maximum extent practicable.

17.3.8. ENERGY

Operation of the project would result in an annual water consumption of 18.4 million gallons, natural gas consumption of approximately 16.3 million million British thermal units (mmbtu) per year, and an annual consumption of approximately 1.5 mmbtu per year of low sulfur distillate. Although all the energy resources burned in the plant would be irreversibly and irretrievably committed, this energy would be converted to electricity. Further, the development of the project would facilitate improvements to the distribution of natural gas on eastern Long Island through contracting for gas supply from the new natural gas pipeline lateral that would be constructed by entities other than LIPA or Caithness.

More importantly, the purpose of the project is to provide an efficient, reliable, and competitive source of electric energy to assist in addressing the need for additional electricity, increased competition, and improved system reliability on Long Island. The facility would generate approximately 350 MWs of electric energy for the LIPA and its customers.

17.4 GROWTH-INDUCING ASPECTS OF THE PROPOSED ACTION

This section provides an overview of the potential growth inducing effects of the proposed project. The project would represent a net benefit to the community due to its provision of energy, employment, infrastructure improvement, and tax dollars, and its minimal impact on existing community services.

17.4.1. EMPLOYMENT AND ASSOCIATED DEMAND FOR HOUSING

Construction and operation of the proposed facility would not result in major growth-inducing impacts. As detailed in Chapter 7.0, Socioeconomics and Environmental Justice, no increase in population or demand for additional residential development is expected to occur as a result of the project. It is expected that the project would generate approximately 375 peak construction jobs. The average construction workforce level is expected to be approximately 250 construction employees. Construction is expected to be completed within a 26-month timeframe. During much of the 26-month period, construction workers employed at the project would be less than during the peak period. It is expected that the peak construction period would last approximately three months. As indicated in Section 7.2.1(a), the locally available construction labor force on Long Island is estimated to be adequate to satisfy the needs of the Caithness Long Island Energy Center, and no in-migration of construction workers is expected. Similarly, the existing employee base of powerplant operational staff located on Long Island is expected to provide for the 25 person operating staff at the facility without significant in-migration. Since the required operating staff is expected to currently reside on Long Island, there is no expected increase in the local population or in the demand for housing. Further, there would be no expected incremental increase of municipal service costs attributed to the operating staff. Further, the proposed project would provide substantial local tax benefits. Accordingly, the only effect of demographics would be the increase employment resulting from the project.

17.4.2. ECONOMIC BENEFITS AND FISCAL IMPACTS

As detailed in Chapter 7.0, “Socioeconomics and Environmental Justice,” estimated total payroll expenditures to construct the project are anticipated to be approximately \$25 million. Local purchases of materials, supplies and contracted services used for construction would comprise another direct and positive socioeconomic effect, and are estimated at \$16 million. Thus, total primary economic infusion into the local economy would be \$41 million. As detailed in Section 7.2.1, based on these construction expenditures, the economic output in the area would increase by \$82.3 million, of which \$41.3 million is secondary impact.

The on-site payroll during operation is estimated to be approximately \$1.32 million per year. Non-fuel operations and maintenance expenditures anticipated to be required include another \$0.75 million in local supplies and services. Accordingly, total annual expenditures in the study area during project operation are estimated to be \$2.07 million. As detailed in Section 7.2.2, based on these operating expenditures, the economic output in the area is estimated to increase by \$3.03 million annually, of which \$0.96 million is secondary impact.

Operation of the facility would result in significant annual tax payments to local government. Because no induced residential development, and associated increase in community service requirements, is expected to result from the project, and because the project will primarily utilize its own services instead of increasing demand on existing community resources, the tax contribution can be viewed as a substantial net addition to local government’s financial resources.

17.4.3. INFRASTRUCTURE IMPROVEMENT

The purpose of the project is to provide an efficient, reliable, and competitive source of electric energy to assist in addressing the need for additional electricity, increased competition, and improved system reliability on Long Island. Therefore, the Caithness Long Island Energy Center represents an improvement to the energy infrastructure of Long Island. By virtue of its construction and operation, the facility would generate approximately 350 MW of electric energy for the LIPA and its customers. Because the demand for electricity on Long Island, and eastern Suffolk County in particular, is rising faster than the ability of the region's infrastructure to generate and deliver it, locating an additional source of electricity at the project site is an appropriate response to the increased demands for power supply in Long Island and would result in improved system reliability.

Other infrastructure improvements associated with the project include the facility's proposed water supply interconnection, which would be made to an existing 12-inch distribution main located along Zorn Boulevard. The interconnection would extend along Zorn Boulevard approximately 500 feet and would be equipped with a suitable backflow prevention device at the metering station. In addition, an automatic flow control valve would be installed to adhere to SCWA's nighttime peak flow limitation of 150 gallons per minute (gpm) between the hours of midnight to 9:00 AM. These water supply improvements would solely serve the proposed facility.

17.4.4. CREATION OF FURTHER GROWTH POTENTIAL BY CONSTRUCTION OF IMPROVED INFRASTRUCTURE

Development of the proposed facility is consistent with the goals of the Town of Brookhaven, as is reflected by the site's L-1 industrial zoning, which expressly allows electric generating facilities by special permit. The development of the Caithness Long Island Energy Center is not expected to significantly increase the growth potential of the area. The need for electricity to be generated by the facility has been established through statewide planning efforts and through LIPA's RFP selection process. Further, the need for the project has been demonstrated in various sections of this FEIS, including Chapter 1, "Project Purpose and Need."

17.5 EFFECT OF THE PROPOSED ACTION ON THE USE AND CONSERVATION OF ENERGY

This section provides an overview of the effects of the project on the use and conservation of energy.

The proposed Caithness Long Island Energy Center would be capable of generating approximately 350 MWs of electric energy. As indicated previously in this chapter, the purpose of the project is to provide an efficient, reliable, and competitive source of electric energy to assist in addressing the need for additional electricity, increased competition, and improved system reliability on Long Island. Due to increases in residential population and associated growth in development, the demand for electricity on Long Island, and Eastern Suffolk County in particular, is rising faster than the ability of the region's infrastructure to generate and deliver it, locating an additional source of

electricity at the project site is an appropriate response to the increased demands for power supply in Long Island and would result in improved system reliability.

17.6 DECOMMISSIONING

17.6.1. INTRODUCTION

This section provides a general description of the decommissioning activities anticipated to achieve restoration of the project site in the event that construction of the Caithness Long Island Energy Center is abandoned or cannot be completed, during project operation, or when the project reaches the end of its useful life. Decommissioning, which is described in more detail below, would result in the removal of facility structures from the project site, removal of all hazardous materials, and remediation of any site contamination, if necessary, to meet applicable standards, in order to make the site available for potential industrial redevelopment. The decision to permanently cease facility operations such that decommissioning would be appropriate would be solely at the discretion of Caithness (or its successor), and would be based on commercial factors. Decommissioning is unlikely to occur under any reasonable scenario during either construction or any period when the facility is economically viable. During project construction, there are contractual requirements for the project to reach commercial operation, and several levels of remedies in place to cure a potential default. During project operation, as long as the facility remains economically viable, continuing operations would negate any need to pursue decommissioning.

Given current experience on Long Island, the useful life of the facility is anticipated to last for an extended period of time. The current fleet of baseload power plants on Long Island has been operating between 30 to 40 years. These existing facilities are still operating, and, in light of the growing demand for electricity on Long Island, no existing baseload facilities that are scheduled to be decommissioned in the near future.

Once operational, the Caithness Long Island Energy Center would be the cleanest, most efficient, and reliable baseload facility on Long Island. Thus, one would expect the entire current fleet to be retired well before the Caithness Long Island Energy Center would be considered for retirement because it would produce electricity far more efficiently than any facility in the current LIPA fleet. Based on the foregoing, it can be conservatively assumed that the Caithness Long Island Energy Center would have useful life of at least 40 years, a substantial portion of which the facility would be subject to a power purchase agreement with LIPA.

It is not realistic to assume that a significant incident that results in damage to plant components during its useful life would trigger decommissioning. For example, in the unlikely event that a fire destroyed a portion of the facility, insurance coverage would be in place to protect Caithness against any losses it incurs due to the damage. Thus, the facility would not be decommissioned as a result of a fire; rather, the damaged components would be either reconstructed or replaced, as necessary, using the proceeds from the insurance. This is so even where the facility is older as long as the plant would be economically viable.

Because the project site currently has no significant existing environmental conditions and the Caithness Long Island Energy Center would be required to comply with a comprehensive range of laws and regulations designed to protect the environment, the project site at the end of the plant's useful life would offer the benefits of relatively clean industrial site redevelopment with much less liability risk than is inherent in the redevelopment of a generating station site today. As a result, the project site would be available for a broad range of industrial reuse, with minimal impact on surrounding land uses. Decommissioning would allow future developers and decision makers flexibility as to which specific type of land development is appropriate at the site.

17.6.2. DECOMMISSIONING PLAN

Certain criteria would guide the decommissioning process. First, the facility must be dismantled safely and removed in an environmentally safe manner. Second, the new owner may determine that certain structures or buildings would remain as they could support the project site's future use, upgraded as necessary. Third, recycling would be employed to maximize recovery of scrap metal and other materials for which there is a market. Fourth, foundations and underground utilities would be removed to the extent necessary, except for those previously deeded to and operated by public authorities, municipalities, utilities or other agencies, and/or unless commercial agreements allowing for the conservation and reuse of foundations and utilities can be reached at the time of decommissioning. Fifth, to the extent required by applicable law, any environmental contamination would be remediated to relevant standards. Sixth, the site would be regraded and revegetated to avoid the likelihood of potential erosion.

Actual decommissioning would proceed in four major phases: removal of specialized equipment; removal of basic structures; removal of foundations, piping, and utilities (to the extent necessary); and site restoration. For removal of specialized installations, electrical equipment would be de-energized and all hazardous materials associated with or housed in that equipment would be removed. Equipment can be a source of scrap metal. For removal of basic structures, dismantling would first occur. Roofs, wall sidings, beams, the condenser structure, and tanks would be taken apart. Much of this material would be sold as scrap metal. For removal of foundations, to the extent required, piping, and utilities, excavation would be necessary. The first part of this phase would be removal of aboveground piping, followed by excavation and removal of foundations (with appropriate disposal of the concrete and steel girders), and excavation and piecemeal removal of underground piping. Finally, excavated areas would be backfilled. For site restoration, all pavement would first be removed to the extent necessary. Then, the areas will be appropriately reseeded.

17.6.3. FUNDING FOR DECOMMISSIONING

It is expected that the aboveground portion of the facility's components would be offered for sale, for salvage or at least scrap value. Even if there were no market for the purchasing the project's components for salvage purposes, the scrap value of the equipment, buildings, and structures on the project site would be anticipated to be more than sufficient to offset the complete demolition of the facility. *