Killingly Energy Center
Killingly, Connecticut

Technical Report

May 3, 2016

Presented by:

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TETRA TECH

Killingly Energy Center
an NTE Energy Project

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
Air Permit Application	Permit Application for Stationary Source of Air Pollution/New Source Review
AGT	Algonquin Gas Transmission
BACT	Best Achievable Control Technology
Btu/kWh	British thermal units per kilowatt-hour
CL&P	Connecticut Light and Power
CO	carbon monoxide
Connecticut Water	Connecticut Water Company
Conn. Gen. Stat.	Connecticut General Statues
the Council	the Connecticut Siting Council
CTDEEP	Connecticut Department of Energy and Environmental Protection
D&M Plan	development and management plan
dB	decibels
dBA	A-weighted decibels
DLN	dry low NO_x
EIA	Energy Information Administration
FAA	Federal Aviation Administration
Generating Facility	proposed 550-megawatt air-cooled electric generating facility
Generating Facility Site	approximately 63-acre portion of the Site, located north of Lake Road
GHG	greenhouse gases
GIS	geographic information systems
gpd	gallons per day
H_2SO_4	sulfuric acid
I-395	Interstate-395
ISO	International Organization for Standards
ISO-NE	Independent System Operator New England
KEC	Killingly Energy Center
kV	kilovolt
LAER	Lowest Achievable Emission Rate
LNG	liquified natural gas
MGD	million gallons per day
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NDDB	Natural Diversity Data Base

Acronyms/Abbreviations	Definition
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NREL	National Renewable Energy Laboratory
NSR	New Source Review
NTE	NTE Connecticut, LLC
O_3	ozone
PM_{10}	particulate matter equal to or less than 10 microns
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns
ppmvdc	parts per million by volume dry basis corrected to 15% oxygen
PSD	Prevention of Significant Deterioration
PUESA	Public Utilities Environmental Standards Act
SCR	selective catalytic reduction
SHPO	State Historic Preservation Office
SIA	Significant Impact Area
SILs	Significant Impact Levels
Site	the proposed approximately 72-acre location of the Killingly Energy Center, off Lake Road in Killingly, Connecticut
SO_2	sulfur dioxide
SWPPP	Stormwater Pollution Prevention Plan
Switchyard	the proposed electrical interconnection switchyard
Switchyard Site	approximately 9-acre portion of the Site, located south of Lake Road
the Council	the Connecticut Siting Council
ULSD	ultra-low sulfur distillate
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compounds

1.0 INTRODUCTION

This Technical Report is submitted by NTE Connecticut, LLC (NTE) pursuant to Connecticut General Statutes (Conn. Gen. Stat.) §16-50l(e), which establishes local input requirements for the siting of an electric generating facility under the jurisdiction of the Connecticut Siting Council (the Council). This statutory provision requires the submission of technical information to officials of the municipality where a proposed facility may be located, and any municipality within 2,500 feet of the proposed facility location. In addition to officials in the Town of Killingly, copies of this Technical Report have been provided to officials in the Towns of Pomfret and Putnam, Connecticut.

1.1 NTE ENERGY

NTE Energy is a family-owned company that started as an energy technology business focused on renewable development. NTE Energy – named after the founder's three children, Noah, Tommy, and Elsa – has grown into a successful independent power producer that develops, constructs, owns and operates power plants. Our team works on a variety of projects, including natural gas, solar, wind and biomass.

As one of the fastest-growing energy companies in the country, NTE Energy is made up of some of the most experienced developers, engineers, and power marketers in the industry. On a combined scale, NTE Energy team members have developed over 10,000 megawatts (MW) of electric generating projects in the United States, Mexico, Europe and Asia.

NTE Energy is currently constructing the Middletown Energy Center in Ohio and Kings Mountain Energy Center in North Carolina and is actively developing projects in Connecticut, Texas, North Carolina, and Ohio. The team is developing some of the cleanest, most efficient combined cycle natural gas power generation facilities in North America.

1.2 PROJECT PURPOSE AND INTENT

NTE is proposing the development of the Killingly Energy Center (KEC), an approximately 550-MW air-cooled electric generating facility (Generating Facility) and related electrical interconnection switchyard (Switchyard) to be located on approximately 72-acres of land off Lake Road in the Town of Killingly, Connecticut (the Site) (Figures 1 and 2); a natural gas lateral will provide fuel to the Generating Facility. Of the total Site, an approximately 63-acre portion north of Lake Road is the proposed location of the Generating Facility (Generating Facility Site), while the 9-acre portion south of Lake Road is the proposed location of the Switchyard (Switchyard Site).

KEC directly responds to the need for modernization of the energy generation base in the region by providing a cost-effective, highly efficient and environmentally responsible addition to the region's electric generation portfolio. Given the current supply and demand conditions, as well as future projections, Connecticut and ISO New England (ISO-NE) have a growing need for flexible baseload energy supply – which KEC is well-suited to provide. KEC will utilize a state-of-the-art combustion turbine generator and sophisticated air emissions control technologies to provide clean, efficient power to meet these energy needs while satisfying Connecticut customer and public policy requirements in a reliable, low cost, and environmentally friendly manner.

Since 2010, nearly 2,500 MW of electric generating capacity has been retired in New England, an additional 2,500 MW is projected to retire by 2020 (including 400 MW of baseload supply in Connecticut), and nearly 10,000 MW of additional capacity at risk of retirement. As a result, ISO-NE forecasts the need for new electric supply by the mid-2020s, which KEC's 550 MW is well positioned to help meet.

Also, as the amount of intermittent renewable energy generation (primarily wind and solar resources) increases, the need for reliable, flexible baseload power generation that can quickly be called upon to meet peak demands, and provide integral grid support functions such as frequency and voltage response, is becoming more crucial to assure grid reliability. Connecticut's Renewable Portfolio Standard is among the highest in the region, and is projected to result in the state harboring nearly 40 percent of all solar electric facilities in New England. This will result in the need for the ISO-NE grid operators to manage and accommodate these intermittent resources,

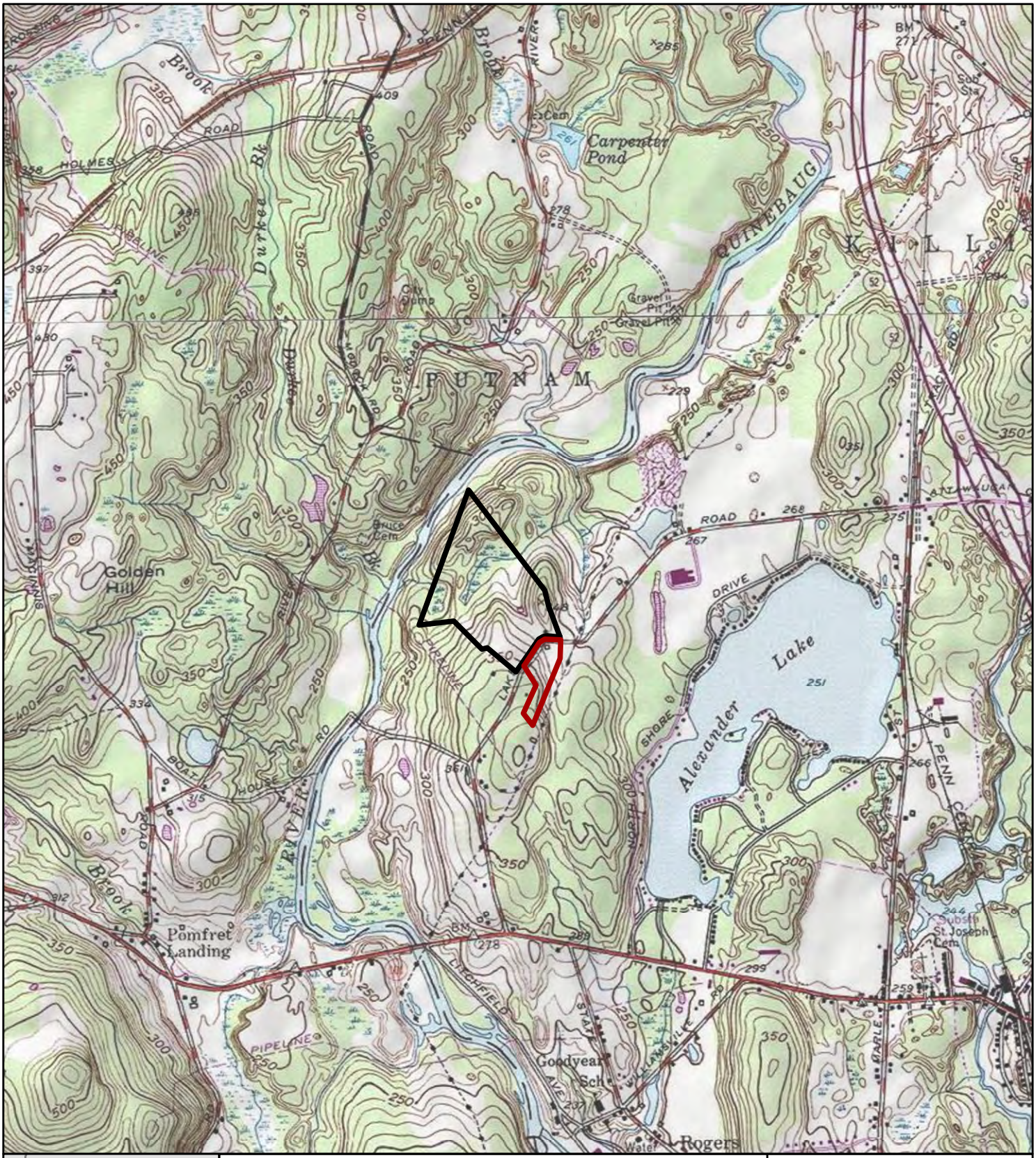

Figure 1
Project Location
(USGS Map)

Killingly Energy Center
an NTE Energy Project

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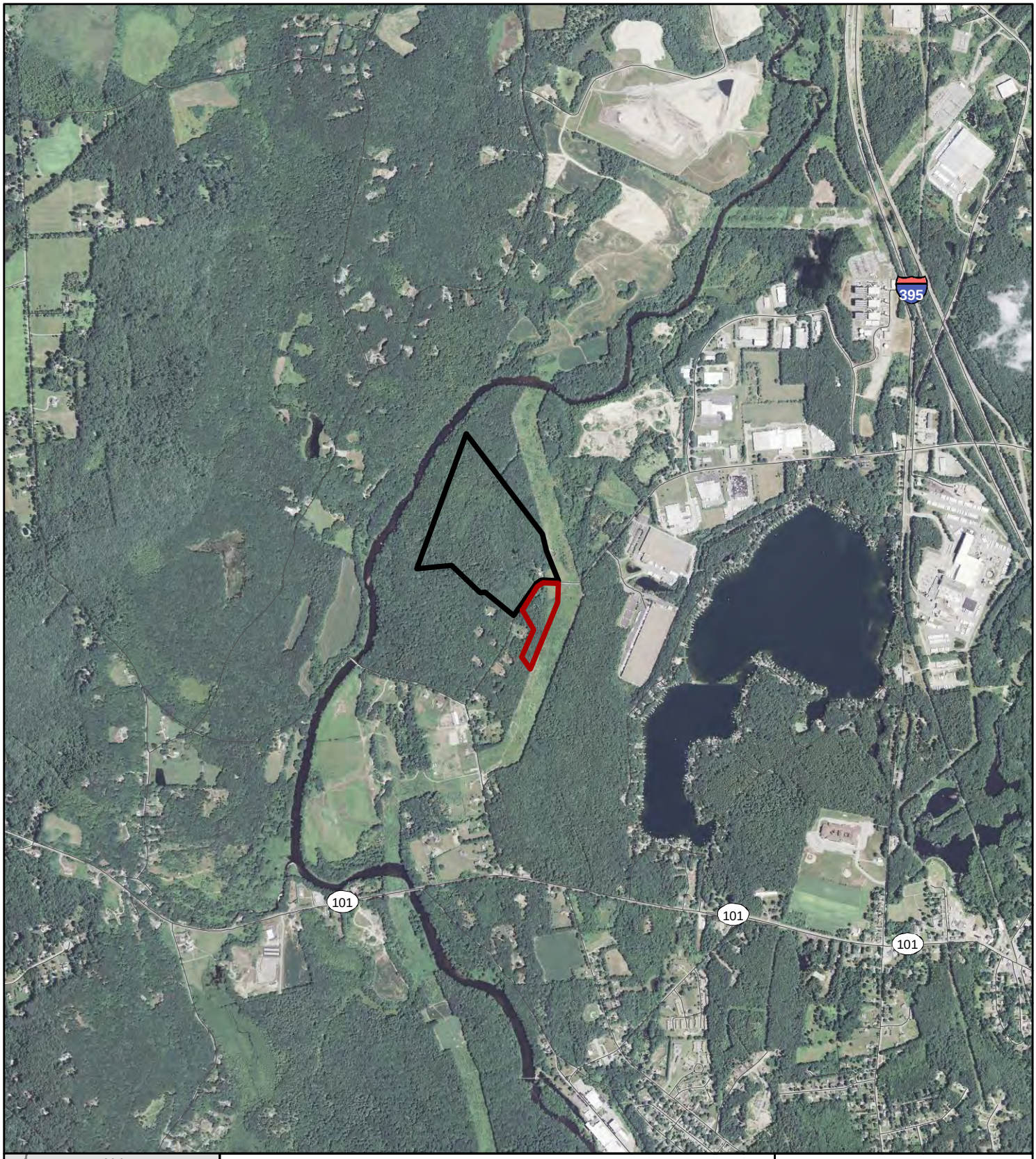

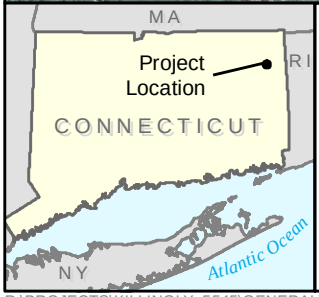

Legend

Generating Facility Site

Switchyard Site

N

0 1,000 2,000 Feet

Figure 2
Project Location
(Aerial Photo)

Killingly Energy Center
an NTE Energy Project

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specifically in the Connecticut transmission area. Additional fast and flexible electric power generating facilities located in Connecticut, such as KEC, will be key in the integration of these resources.

New clean, efficient and reliable generation such as KEC will not only support increased renewable contributions by providing a reliable backstop to these intermittent resources, but will continue to reduce greenhouse gas (GHG) and other emissions by displacing older, less efficient fossil fuel-fired generation. KEC's turbine technology will allow it to operate 25 percent more efficiently than the average electric power generating facility in Connecticut. This will translate into more stabilized electricity costs and reduced emissions for Connecticut and the region.

KEC is not only designed to minimize emissions to the greatest extent possible, but has incorporated air cooling, dramatically reducing its water usage when compared to traditional wet-cooled electric power generating facilities.

1.3 SITE SELECTION PROCESS

The selection process involved consideration of project attributes such as the specific electric generation technology, project size, and fuel source, as well as evaluation of specific site locations suitable for the project. The following sections discuss the review of alternatives leading to selection of the project as currently defined, followed by the manner in which sites were evaluated for consistency with the defined project objectives.

1.3.1 Consideration of Alternative Technologies, Size, and Fuels

1.3.1.1 Alternative Generation Technologies

NTE considered a range of potential generation technologies and concluded that a combined cycle combustion turbine facility utilizing natural gas as its primary fuel is the most efficient and reliable source available for the region. The combined cycle process is extremely efficient; it captures waste heat that would normally be lost and uses it to generate more electricity. This process, combined with sophisticated air emissions control technology and state-of-the-art turbines, creates a best-in-class generation facility and enables greater renewables penetration into the ISO-NE grid. KEC's flexible baseload power will quickly respond to the variability and intermittency of renewables, such as wind and solar, and helps meet peak electricity demands to maintain grid reliability and stability, especially in light of the retirement of a significant amount of coal-fired baseload generation throughout New England and across the United States.

KEC's purpose is to provide a reliable, flexible baseload energy facility to serve the ISO-NE market. The penetration of renewable resources, such as wind and solar, on New England's electrical grid has been steadily increasing over the past decade, and growth of these technologies is forecasted to continue to increase rapidly in the coming years. Solar and wind facilities will continue to play an increasingly important role in the grid, but only generate energy intermittently, depending upon the availability of the resource. As a result, a large amount of renewable generation on the transmission network will result in rapid, significant swings in power flow, which reduces the robustness, strength and ultimate reliability of the overall transmission system. Energy storage solutions do not yet allow for reliable or efficient power generation at the magnitude necessary to backstop renewable generating sources. Given this, clean, efficient, flexible baseload generating sources are needed to solidify the transmission system and augment the growing focus on renewables to the energy mix.

In addition, land requirements for solar and wind projects are highly dependent on the "resource" available at a given site, as well as topographic and other factors. The National Renewable Energy Laboratory (NREL) identifies solar energy production in its June 2013 report *Land-Use Requirements for Solar Power Plants in the United States* of approximately 5.9 acres per MW. A 70-acre site would, therefore, result in solar generation capacity of approximately 12 MW. Significant portions of the Site would not be usable due to topography, wetlands or other constraints. Additionally, solar resources in New England are extremely variable, and this region is one of the weakest areas for consistent solar resource in the United States. Energy generation from a solar installation at the Site would be minimal. Similarly, wind energy facilities vary in the amount of land area required. Using NREL's August 2009 *Land-Use Requirements of Modern Wind Power Plants in the United States*, which indicates a dramatic range from approximately 22 acres per MW to 250 acres per MW, just over 3 MW of generation capacity would result from a 72-acre site (even assuming the more productive end of the range). In general, New England is not among the areas with a strong on-shore wind regime, due to variable wind direction and lower speeds except on certain ridgelines. Therefore, a solar or wind installation, while an important part of Connecticut's energy strategy,

would result in considerably lower energy production than demand requirements and the combined cycle technology proposed.

Advanced combined cycle combustion turbine technology with natural gas firing is extremely efficient as a flexible baseload electric power generation source. The Energy Information Administration (EIA) publication entitled *Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants* (April 2013) provides a comparison of heat rates for various electric utility scale generating technologies. Heat rate is a metric used to identify a technology's efficiency level and is measured in units of the amount of fuel necessary to generate a certain amount of electricity (lower heat rate indicates higher efficiency). The listed heat rate for other fossil fuel generating technologies, as listed in that source, are:

- Coal-fired boilers/integrated gasification-combined cycle facilities: 8,700 to 12,000 British thermal units per kilowatt-hour (Btu/kWh);
- Simple cycle combustion turbines: 9,750 to 10,850 Btu/kWh;
- Biomass boilers: 12,350 to 13,500 Btu/kWh; and
- Fuel cells: 9,500 Btu/kWh.

KEC has a new and clean net heat rate at full load under International Organization for Standardization (ISO) conditions of 6,529 Btu/kWh (higher heating value), which is equivalent to a 52 percent efficiency level.

Natural gas-fired combined cycle technology, as proposed, also facilitates flexible operation. This will allow ISO-NE to select the most appropriate generating source during periods of variable and peak energy demand. This technology also maximizes energy efficiency and minimizes air emissions.

1.3.1.2 Alternative Size/Project Output

As noted above, KEC reflects a 550-MW generating capability utilizing efficient, state-of-the-art technology. The generating capacity was selected as consistent with market needs for a flexible baseload facility in this location. Other factors that influenced the optimal generating capacity were energy efficiency and system reliability from both a natural gas and electrical perspective. The proposed 550-MW plant utilizes an advanced class combustion turbine resulting in a very high combined cycle efficiency. Providing less generating capacity would considerably reduce the plant's overall efficiency. Adding additional capacity significantly beyond the proposed 550 MW would result in the addition of a considerable amount of power to the ISO-NE grid in a particular location, and would most likely require substantial transmission system upgrades to protect system reliability. Additionally, drawing the needed amount of natural gas to operate a larger facility would likely require similar upgrades to the natural gas pipeline system.

1.3.1.3 Alternative Fuels

NTE considered fuel alternatives for KEC before selecting natural gas as the primary fuel source, with limited use of ultra-low sulfur distillate (ULSD) oil as backup when natural gas is not available.

Natural gas, the primary and preferred fuel source for KEC, is the cleanest burning fossil fuel available. Burning alternative fossil fuels, such as coal and oil, results in greater air pollutant emissions, and introduces additional social and environmental impacts associated with fuel delivery and storage. NTE identified the following three fuel options to assure the lowest emitting scenario was selected that would best meet the project's purpose and regional need: 1) natural gas as the sole fuel; 2) natural gas as primary fuel with liquefied natural gas (LNG) as backup; and 3) natural gas as the primary fuel with ULSD as backup.

The use of natural gas eliminates the need for road or rail delivery, and provides efficient combustion in combined cycle mode resulting in the lowest emissions for all fossil fuels. Natural gas will be fired in the combustion turbine at all times when it is available. However, in extreme weather events that create high demand, natural gas may not always be available. Therefore, natural gas as the sole fuel source was deemed technically infeasible for project reliability and ability to meet regional power supply commitments.

Natural gas as the primary fuel with the installation of LNG storage to supply backup fuel could create a dedicated natural gas supply; however, securing the necessary approvals and constructing LNG storage at the proposed KEC Site was considered infeasible. An LNG storage terminal requires considerable space, including the need for an

exclusion zone around LNG storage tanks. It was determined that the space requirements associated with this backup fuel alternative made LNG infeasible.

The use of ULSD presents the lowest-emitting back up fuel option of liquid fuels available, and is able to be utilized by the same combustion process and equipment. Because the emissions are higher for certain parameters than natural gas, KEC's use of ULSD is expected to be permitted only when natural gas is unavailable in an extreme demand event, and in no instance for more than 720 hours per year. This will be sufficient support for project reliability, and allow for appropriate fuel flexibility without the need for substantial additional infrastructure or equipment. In actuality, although 720 hours is prudent to ensure reliability in the event of a serious disruption in natural gas supply, it is expected that KEC would operate using ULSD less than once every two to three years.

The selection of natural gas as the primary fuel, with ULSD for limited use as backup, was determined to be the ideal fuel scenario for KEC.

1.3.2 Consideration of Alternative Sites

Over the course of several months, NTE researched numerous prospective sites for the project throughout Connecticut. NTE's initial site search prioritized locations with nearby natural gas and electric transmission infrastructure, adequately sized parcels within existing or planned industrial areas, and communities that would benefit significantly from a substantial increase in tax revenue, job growth, and other economic impacts. In addition to a thorough desktop analysis utilizing geographic information system (GIS) mapping software, NTE conducted numerous site diligence trips and met with individuals from several towns in Connecticut to discuss the general interest level in this project, prospective site locations within the town, and infrastructure capabilities.

NTE weighed initial siting prospects on a set of criteria which narrowed down viable site locations. These criteria included proximity to required infrastructure and community long-term plans/interest. Due to the Town of Killingly's strong surrounding infrastructure and interest in the strong economic benefits the project would bring, the Town of Killingly became the top contender for the project. Other locations of interest would have required extensive infrastructure additions, like the development of lengthy transmission lines, or lacked adequate acreage.

1.3.2.1 Infrastructure Capabilities

The Site has access to the vital infrastructure required for KEC (Figure 3), with nearby natural gas, electric transmission, and water/wastewater infrastructure in good proximity.

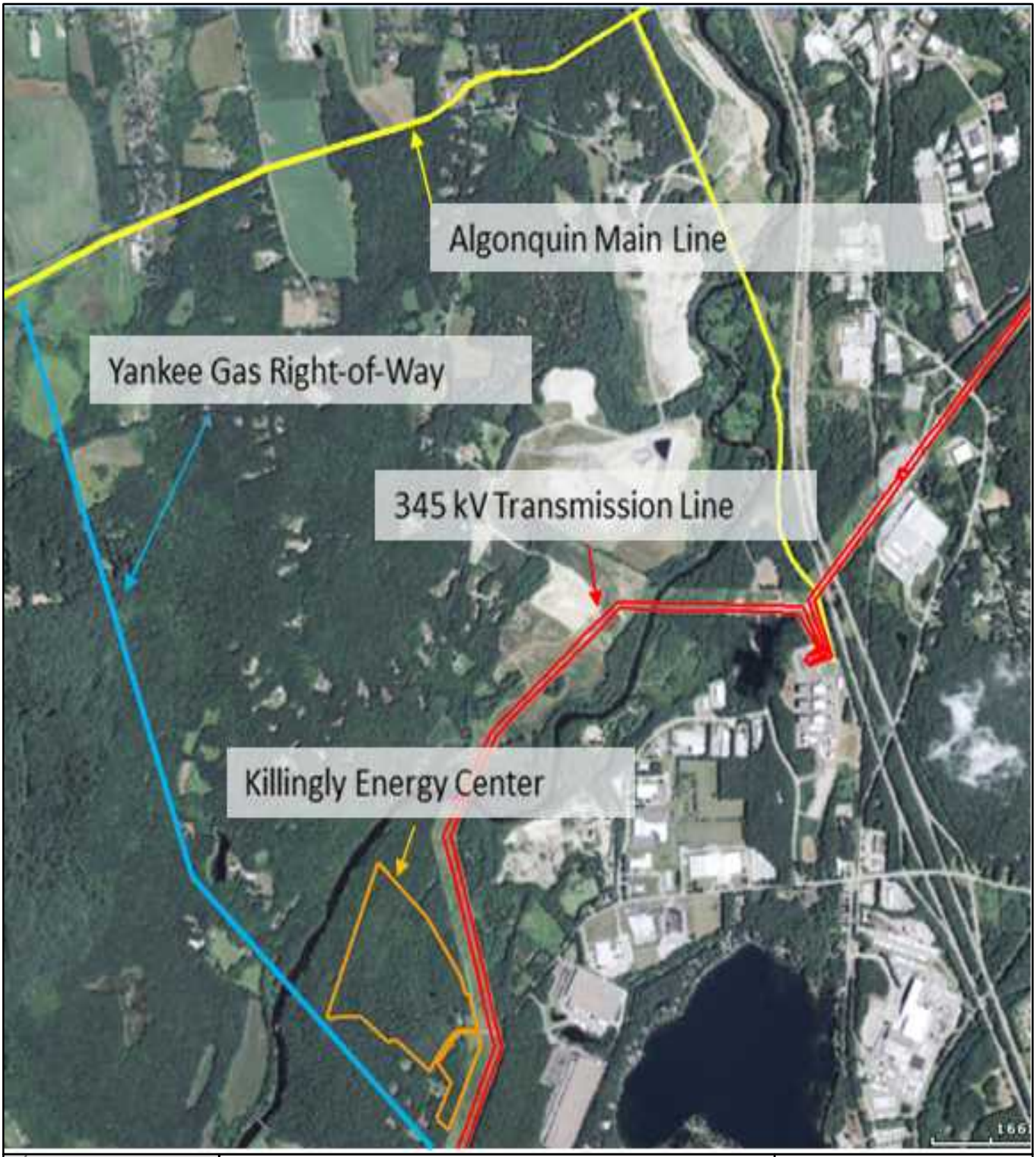
One of three main gas transmission lines in Connecticut runs approximately 2 miles to the north of the Site. In addition, connections are available through the local distribution network. Either approach would allow NTE to minimize interconnection impacts through prospective use of existing public and private rights-of-way. NTE is currently exploring both options for gas line service to the Site, and is confident that robust supply is available.

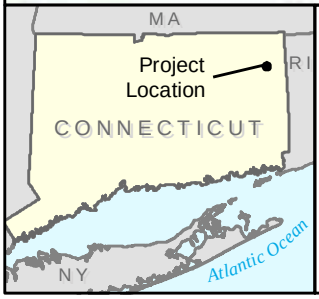
Two 345-kilovolt (kV) electric transmission lines run along the eastern boundary of the Site, eliminating the need for the development of extensive transmission lines outside of KEC property, which are frequently required for new power generation projects.

Since KEC will be air-cooled, water requirements are significantly reduced from demands associated with traditional project designs. KEC will use 95 percent less water than a typical wet-cooled facility of similar size. Water for KEC was identified as potentially available via the existing Connecticut Water Company (Connecticut Water) public water system; the limited wastewater discharge is anticipated to be adequately handled by the existing Killingly Water Pollution Control Authority facility. NTE is also exploring the potential use of recycled water options to offset its water supply needs.

1.3.2.2 Compatibility with Land Use Planning Objectives

Once Killingly was defined as the target area for the project, several sites in close proximity to the required infrastructure were further assessed. Research identified the Town of Killingly's *Plan of Conservation and Development: 2010 – 2020,* which detailed intentions to expand the industrial zoned area further west of Interstate 395 (I-395), as shown in Figure 4. Preliminary discussions with local officials confirmed that this area of the community was an appropriate focus for consideration as a project site. Therefore, several specific parcels in the area targeted for industrial development were identified for additional technical evaluation.





Legend

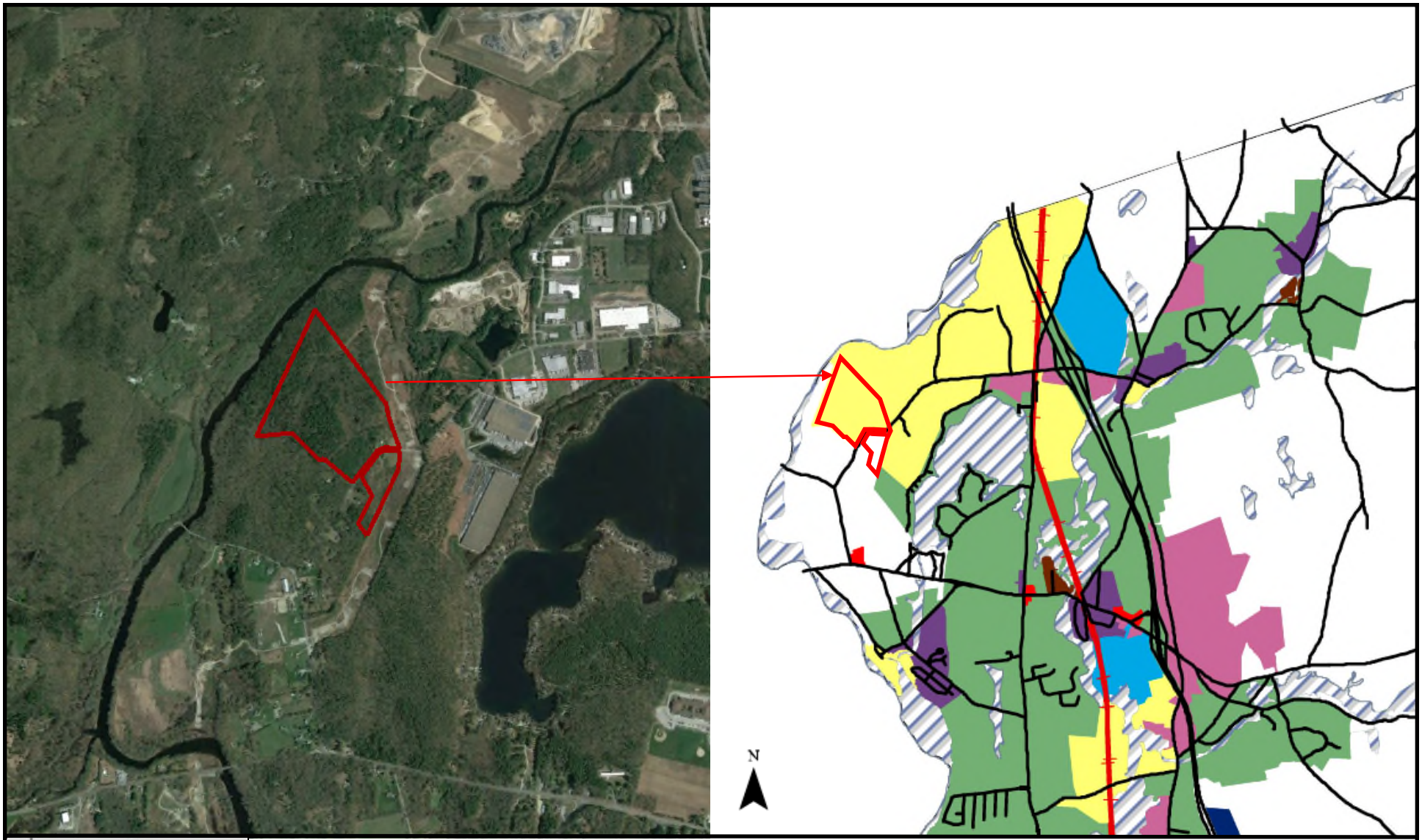
- Killingly Energy Center
- 345-kV Transmission Line
- Yankee Gas Right-of-Way
- Algonquin Main Line

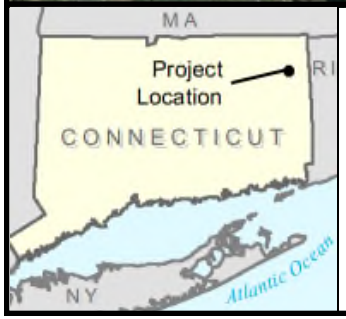
N

Figure 3

Surrounding Infrastructure

Killingly Energy Center
an NTE Energy Project





Legend

Project Site

Industrial

Figure 4

Future Land Use

Killingly Energy Center

an NTE Energy Project

1.3.2.3 Site Selection

The sites in Killingly were closely assessed and weighted. Criteria for alternative site assessments included size of parcel, ability to minimize wetland disturbance, surrounding buffer to minimize visual impact, favorable elevation to minimize visual impact, and proximity to required infrastructure. An assessment of critical issues was compiled for each prospective Killingly site, including a preliminary evaluation of air quality, noise, water supply, visibility, protected species, and land use and zoning.

Based upon these assessments, the sites were further narrowed down. The combination of adequate parcel size, surrounding infrastructure, site buffering capabilities, ability to avoid wetland disturbance, and the town's future land use intentions made the Site the top candidate for the project. In addition to the strong infrastructure characteristics and consistency with planned uses for the area, Killingly's experience with the existing Lake Road Generating Facility (located within 1 mile of the Site) has helped increase the town's awareness that clean energy projects can be good neighbors that offer strong economic and community benefits. NTE then reached out to property owners and executed an option on the 180/189 Lake Road parcels (under the same ownership).

2.0 KILLINGLY ENERGY CENTER – PROJECT DESCRIPTION

KEC will be located in an area designated in the Town's Plan of Conservation and Development for future industrial development in the northern portion of Killingly (Figures 1 and 2), west of I-395 and Alexander Lake; south of the Quinebaug River; and north of Lake Road and the Hartford Providence Turnpike. While some low-density residential uses are located west of the Site, and more densely settled seasonal and year-round residences surround Alexander Lake, the Site is generally located in an area separated from Killingly's higher density residential areas to the east by I-395. The existing Lake Road Generating Facility and other existing industrial uses, including Frito-Lay, Ryder Integrated Logistics, Unfi Dayville Warehouse, Automatic Rolls of New England, Putnam Plastics, U.S. Cosmetics, Web Industries, Superwinch, Killingly Asphalt, Nutmeg International Trucks, and a Rite Aid Distribution facility are located along Lake Road and within the nearby Killingly Industrial Park and other areas proximate to the Site.

KEC will utilize a single combustion turbine generator in combined cycle mode, in a 1x1x1 configuration, which means it will have one combustion turbine generator, one heat recovery steam generator, and one steam turbine generator. A preliminary layout for KEC is provided in Figure 5 (note that cross-hatched areas shown are for temporary use during construction only).

KEC will be fueled primarily with natural gas, with limited firing of ULSD as the backup fuel. Although KEC will request authorization to utilize ULSD for up to 720 hours per year, actual use is expected to occur on the order of once every two to three years. KEC will connect to the existing 345-kV electric transmission line located adjacent to the property's eastern boundary. Electrical equipment adjacent to the generating unit will convert (step up) the generated electricity from approximately 20 kV to 345 kV in order to provide electricity at the same voltage as the existing electric transmission circuit. A Switchyard will be constructed on the portion of the Site south of Lake Road to allow the electrical lines from KEC to interconnect directly with the existing transmission system.

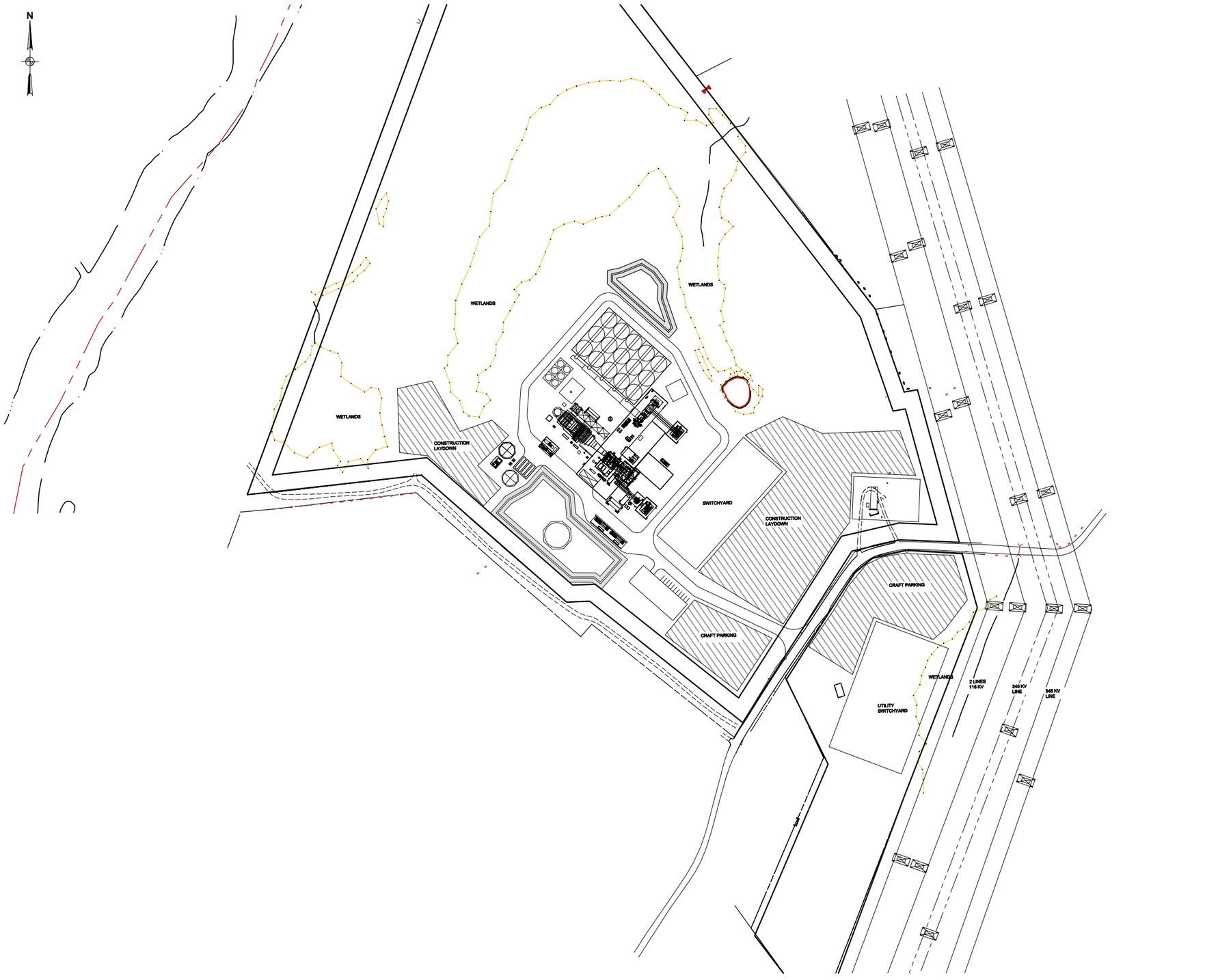
KEC is anticipated to receive water for process use from Connecticut Water and/or recycled water from other nearby industrial sources, with average use anticipated to be on the order of 50,000 to 100,000 gallons per day (gpd). Infrastructure to provide water service exists at or near the Site within the Lake Road right-of-way. As previously stated, KEC will be air cooled, significantly reducing water requirements by over 95 percent when compared to a more conventional wet-cooled project configuration. It is expected that wastewater from KEC will be discharged using nearby interconnections to Town of Killingly's existing wastewater treatment facilities.

KEC is anticipated to include the following ancillary equipment: an auxiliary boiler (utilized to support start-up); an emergency fire pump; a back-up generator; a 1 million-gallon ULSD storage tank; a 500,000-gallon raw water storage tank; a 500,000-gallon demineralized water tank, and a 12,000-gallon tank for storing 19 percent aqueous ammonia (used for emissions control). All non-water tank storage and unloading areas will be equipped with secondary containment.

Emissions will be controlled with Lowest Achievable Emission Rate (LAER) and Best Available Control Technology (BACT), as applicable. Emissions of nitrogen oxides (NO_x) will be controlled using dry-low NO_x (DLN) combustion during natural gas firing, water injection during ULSD firing, with further reductions when firing either fuel by selective catalytic reduction (SCR). Emissions of carbon monoxide (CO) and volatile organic compounds (VOC) will be controlled with an oxidation catalyst system. The Generating Facility will be equipped with duct firing capabilities and chillers that will allow generating capabilities to be optimized in all weather conditions.

Wetland impact has been minimized by KEC, with no wetland impact proposed on the Generating Facility Site, and a small amount of wetland impact (approximately 10,500 square feet) associated with the proposed Switchyard. Stormwater management will utilize best management practices that will include appropriate facilities to control post-development flows to approximate peak rates of runoff currently experienced at the Site.

Access to the Site will be via an entrance/exit drive off of Lake Road. Once KEC is operational, the generating facility will be staffed by approximately 25 to 30 employees, working in shifts.



Notes

Legend

Reference Drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
D	04/27/16	AF	FOR CLIENT REVIEW	KP	JW
C	04/12/16	AF	FOR CLIENT REVIEW	KP	JW
B	04/11/16	AF	FOR CLIENT REVIEW	KP	JW
A	04/07/16	AF	FOR CLIENT REVIEW	KP	JW

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Client

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Title

Figure 5: Preliminary Site Plan

PRELIMINARY NOT FOR CONSTRUCTION REPLACE WITH ENGINEERS STAMP AT CONSTRUCTION AND/OR FABRICATION

Designed	-	Eng check	JW
Drawn	AF	Approved	-
Dwg check	KP	Project Mngr	JW
Scale at ANSI E		Date	Rev
1" = 100'-0"		04/07/16	D
Drawing Number	334954CT-SA-203		

3.0 REGULATORY REVIEW PROCESS

The following sections provide an overview of the regulatory review processes anticipated to apply to pre-construction approval of the proposed KEC.

3.1 CONNECTICUT SITING COUNCIL

Municipal jurisdiction over the siting of the proposed electric generating facility described in this report is pre-empted by provisions of the Public Utilities Environmental Standards Act (PUESA), Conn. Gen. Stat. §16-50g et seq. The PUESA gives exclusive jurisdiction over the location, type and modification of electric generating facilities to the Council (Conn. Gen. Stat. §§16-50i(a)(3); 16-50x(a); and 16-50x(d)). Accordingly, the electric generating facility described in this report is exempt from the Killingly's land use (zoning and wetlands) regulations.

Upon receipt of an application, the Council will assign a docket number and, following a completeness review, set a docket schedule, including a hearing date. At that time, the Towns of Killingly, Pomfret and Putnam may choose to participate in the Council's proceeding. Other procedures followed by the Council include serving the applicant and other participants with interrogatories, holding a pre-hearing conference, and conducting a public hearing. The public hearing will be held at a location in the Town of Killingly, the host municipality. Following the public hearing, the Council will issue findings of fact, an opinion and a decision and order.

Prior to construction, the Council will also require the applicant to submit a development and management plan (D&M Plan), which is, in essence, a final site development plan showing the details of the facility incorporating any conditions imposed by the Council. These procedures are also outside the scope of the Town's jurisdiction, and are governed by the Conn. Gen. Stat., the Regulations of Connecticut State Agencies, and the Council's Rules of Practice. If the Council approves the electric generating facility described in this Technical Report, NTE or its contractor will submit an application for approval of building and electrical permits, as required, to the Building Official. Under Section 16-50x of the General Statutes, which provides for the exclusive jurisdiction of the Council, the Building Official must honor the Council's decision.

3.2 OTHER STATE AND FEDERAL PROGRAMS

KEC will be required to obtain a New Source Review (NSR) permit from the Connecticut Department of Energy and Environmental Protection (CTDEEP) associated with its air pollutant emissions. The NSR permit application will be prepared in accordance with Conn. Gen. Stat. § 22a-174-3a, and will undergo technical review. Opportunity for public comment will also be provided, including a public hearing once a Tentative Determination has been issued. As noted in Section 4.1, KEC will be required to demonstrate that it has incorporated appropriate emissions control technology, and that its emissions meet BACT and LAER, as appropriate, and will not cause or significantly contribute to a violation of the National Ambient Air Quality Standards (NAAQS) before a permit will be issued.

Because Killingly is designated as an environmental justice community, an Environmental Justice Plan has been approved by CTDEEP that will bring additional public involvement to the overall permitting process.

As KEC's details are developed, additional review will be required at the state and federal level, and additional pre-construction permits could be required. Table 1 provides a list of potential environmental permitting requirements for KEC.

Table 1. Potential Environmental Permitting Requirements

Agency	Permit/Approval	Comments
State Permits, Reviews and Approvals		
Connecticut Siting Council	Certification of Environmental Compatibility and Public Need	Required prior to KEC construction.
CTDEEP	Permit to Construct; Prevention of Significant Deterioration (PSD); Nonattainment Area NSR	Required prior to KEC construction.

Agency	Permit/Approval	Comments
	Title IV Acid Rain Permit; Title V Operating Permit	Application for Acid Rain Permit required no later than 24 months prior to operation; Application for Title V permit required within 12 months of operation.
	Clean Water Act, Section 401 Water Quality Certification	Review concurrent with other CTDEEP water discharge approvals, as necessary.
	Wastewater – Pre-treatment Permit or general permit for discharge to sanitary sewer	Technical approval and permit issuance required prior to discharge.
	National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater – construction; NPDES General Permit for Stormwater - operation	Required prior to construction or operation, as applicable.
	Natural Diversity Data Base (NDDB) – endangered species program	Initial consultation completed; studies underway.
Connecticut Commission on Culture and Tourism – History Division	Historic and archaeological resource review	Initial consultation completed; studies underway.
Federal Permits, Reviews and Approvals		
United States Army Corps of Engineers (USACE)	Clean Water Act Section 404 Permit	Required for placement of fill in wetlands or waters; NTE anticipates no disturbance to federally regulated wetland areas on the Generating Facility Site, and only minimal impacts to wetlands on the Switchyard Site.
United States Fish and Wildlife Service (USFWS)	Endangered Species Act Section 7 Consultation	Initial consultation completed; studies underway.
Federal Aviation Administration (FAA)	Notice of Proposed Construction	Although airports are not proximate, a filing will be made to affirm that no navigation interference will result.

3.3 MUNICIPAL CONSULTATION PROCESS

Pursuant to Conn. Gen. Stat. §16-50l of the General Statutes, Town officials are entitled to receive technical information regarding the proposed electric generating facility at least 60 days prior to the filing of an application with the Council. In accordance with these provisions, this Technical Report is provided to the Town of Killingly, the host municipality, and the Towns of Pomfret and Putnam, municipalities within 2,500 feet of KEC, and includes: information on the public need and benefit of KEC; details of KEC; a description of the Site selection process, including any alternative locations and generation options considered and rejected by NTE; and a discussion of potential environmental effects associated with KEC.

The municipality is expected to conduct public information hearings or meetings, as it deems necessary, to develop and advise NTE of its recommendations concerning KEC. As such hearings are held, the applicant will notify all abutting landowners, and publish notice of the public information hearing/meeting in a newspaper of general circulation in the municipality, at least 15 days prior to the hearing.

Within 60 days of the initial consultation, the municipality shall issue its recommendations on KEC to NTE. Within 15 days of the filing of the application, NTE must provide the Council with copies of all materials provided to the municipality, a summary of the consultation effort and all recommendations issued by the Town(s).

In addition, Conn. Gen. Stat. §16-50x(d) states that the Town's Planning and Zoning Commission and Inland Wetlands Agency may issue orders to "regulate and restrict" the proposed location of the electric generating facility. All such orders must be in writing and recorded in the records of the community. Notice of the issuance of such

orders must also be provided to the applicant or other parties affected by the orders. The “regulate and restrict” orders must be filed with the Council not more than 65 days after the filing of the facility application. These orders are subject to appeal to the Council within 30 days after the giving of the notice by the municipality. The Council may affirm, modify or revoke the orders or make any order in substitution of the municipal order by a vote of six of its members.

4.0 ENVIRONMENTAL CONSIDERATIONS

The following narrative provides preliminary information describing consideration of key environmental factors that will be evaluated for KEC. Preliminary details have been provided if available; otherwise, a discussion of pending studies to be completed has been provided. Topics addressed in the following sections are: air quality; wetlands and watercourses; wildlife and endangered species; water use and discharge; stormwater management; visual impacts; cultural resources; noise; traffic; solid waste disposal; emergency response; and electric and magnetic field effect.

4.1 AIR QUALITY

KEC is proposed to utilize state-of-the-art, highly efficient Siemens or Mitsubishi (or equivalent) combustion turbine technology, with a nominal net output of 550 MW. KEC will be fueled by natural gas as its primary fuel, but in order to ensure reliability under all conditions, it will be capable of utilizing ULSD for no more than 720 hours per year (although actual use is anticipated to be much less). KEC will incorporate other modes of operation (duct firing, evaporative cooling) to further enhance its capabilities under various conditions.

As a part of KEC's Permit Application for Stationary Source of Air Pollution/NSR (Air Permit Application), CTDEEP will conduct a detailed evaluation of a comprehensive air quality impact analysis to affirm compliance with all applicable standards and requirements that protect the public health and welfare. KEC's location in Windham County is within an area designated as in attainment with the NAAQS for all criteria pollutants except for ozone (O_3), for which it – like most of the Northeast – is considered in moderate nonattainment. Non-attainment review of O_3 focuses on two O_3 precursors, NO_x and VOC. KEC qualifies as a major source for NO_x and will, therefore, incorporate LAER emission controls for that pollutant; all other pollutants will be controlled using BACT emission controls.

DLN combustion, in conjunction with SCR, will control NO_x emissions when firing natural gas. Water injection with SCR will control NO_x emissions when firing ULSD. An oxidation catalyst will control emissions of CO and VOC. Emissions of sulfur dioxide (SO_2), particulate matter with diameters equal to or less than 10 microns (PM_{10}), particulate matter with diameters equal to or less than 2.5 microns ($PM_{2.5}$), sulfuric acid (H_2SO_4), and GHG will be minimized through good combustion practices, efficient technology, and selection of the cleanest available fuels.

Table 2 presents KEC's proposed emission rates, which are consistent with the lowest-emitting combined cycle generating facility in the United States.

Table 2. Anticipated LAER and BACT Emissions Rates (steady-state)

Pollutant	Gas Firing (no duct firing)	Gas Firing (duct firing)	ULSD Firing
NO_x	2.0 ppmvdc[1]	2.0 ppmvdc	5.0 ppmvdc
VOC	1.0 ppmvdc	2.0 ppmvdc	2.0 ppmvdc
CO	2.0 ppmvdc	2.0 ppmvdc	2.0 ppmvdc
$PM_{10}/PM_{2.5}$	Vendor Specs	Vendor Specs	Vendor Specs
SO_2	Fuel sulfur limit	Fuel sulfur limit	Fuel sulfur limit
H_2SO_4	Fuel sulfur limit	Fuel sulfur limit	Fuel sulfur limit
NH_3	2.0 ppmvdc	2.0 ppmvdc	5.0 ppmvdc

[1] ppmvdc = parts per million by volume dry basis corrected to 15 percent oxygen

Dispersion modeling will be conducted for KEC to demonstrate that its air quality impacts comply with the NAAQS which have been established by the United States Environmental Protection Agency (USEPA) to protect the most sensitive individuals in the population. The modeling will be completed consistent with CTDEEP and USEPA requirements, and will analyze a conservative maximum-impact series of operating conditions to predict the appropriate maximum ground-level concentration for each pollutant and averaging period. It is anticipated that, for the majority of pollutant standards, KEC will have impacts below the established Significant Impact Levels (SILs), which are small fractions of the NAAQS and considered *de minimis* levels.

It is anticipated that KEC's impacts will exceed the SILs for the 1-hour nitrogen dioxide (NO_2) and 24-hour $PM_{2.5}$ standards under some conditions. If this is the case, cumulative modeling to assess KEC impacts would be evaluated with background ambient air quality data and data from other major emission sources in the area. Through this additional modeling analysis, KEC will demonstrate compliance with the 1-hour NO_2 and 24-hour $PM_{2.5}$ NAAQS, which have been established to ensure health protection of the most sensitive members of the population, and with the PSD increments to ensure that existing air quality that is currently better than the NAAQS will not be degraded.

In addition to applying stringent controls and demonstrating requirements with the NAAQS, KEC is required to purchase NO_x emission offsets at a ratio of 1.2 to 1 based on maximum potential NO_x emissions. Because this eliminates emissions from other sources within the same "air-shed" from future operation, KEC will – in addition to being an efficient source of energy generation that will be controlled to the lowest levels permitted in the United States – provide additional benefit to air quality by offsetting more than its maximum potential NO_x emissions. In addition, as new, efficient sources of energy generation such as KEC come on-line, older, less efficient facilities will be displaced, resulting in further regional air quality improvements.

4.2 WETLANDS AND WATERCOURSES

The KEC site has been evaluated to identify wetlands and watercourses within its boundaries. The Generating Facility Site is approximately 63 acres of predominantly wooded, moderately to steeply sloping land. Soils, vegetation, and hydrology are all key elements of identifying wetlands and are discussed below. Various layout configurations have been considered in an effort to minimize KEC impacts. The proposed KEC layout avoids any direct impact to all identified wetlands on the Generating Facility Site. On the much narrower 9-acre Switchyard Site, impact to approximately 10,500 square feet of wetlands may be unavoidable. Care has been taken to retain wetland and watercourse buffer areas to the greatest extent possible, and incorporate appropriate erosion and sedimentation measures to protect water quality of the wetland and streams within the property

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Connecticut Soil Survey and field-verification, the Generating Facility Site is dominated by glacial till-derived soils, with the exception of soils within and adjacent to an on-site forested swamp, where soils are derived from a glacial outwash deposit. Bedrock outcrops were observed on the hillsides of the southeastern and southwestern quadrants of the Generating Facility Site, but mostly along the steep ridgeline that dominates its steeply sloping western section, where bedrock mining had taken place through the early 20th century.

The dominant upland vegetative cover types are maturing, second-growth deciduous-evergreen forest, evergreen (white pine dominated) forest, and pioneer, pole-sized evergreen dominated forest. The latter occurs in the southernmost section of the Generating Facility Site, near Lake Road, historically given to agriculture (e.g., pasture, fruit tree grove, hayfield, etc.).

The central wetland is composed of a larger northern section (the on-site forested swamp), on nearly flat terrain, and a smaller, narrower gently sloping "lobe" extending southerly. The latter begins at a roughly 0.25-acre man-made pond, originally developed in 1959 as a swimming-hole and water source for the then active farm, according to the property owner.

The man-made pond is estimated to be at most 5 feet in depth, near its earthen embankment. Although its depth fluctuates seasonally, preliminary investigations have identified small fish, indicating consistent presence of sustaining water levels. An intermittent stream (not strongly channelized) extends from the man-made pond to join a semi-perennial stream emanating from the eastern section of the overall wetland. The southern wetland lobe, surrounding the pond and intermittent stream, is a relatively young red-maple dominated deciduous forest, which

was likely in pasture until the late 1950s. It is a seasonally flooded to seasonally saturated wetland with both poorly and very poorly drained soil types.

The northern section of the wetland is dominated by both deciduous and evergreen cover types (red maple dominates the interior and white pine-hemlock dominates the margins). This classic headwaters wetland, with mostly very poorly drained soils, is seasonally flooded to semi-permanently saturated, with a significant ground cover of sedges and sphagnum mosses. Its outlet stream is semi-perennial, based on the presence of aquatic organisms observed in the stream substrate. This means that it flows continually most years, but may dry up in some years. The stream in this location has been channelized over its entire length, from the south-westernmost point of this wetland area, to its outlet under a stone wall along the eastern property boundary. The stream channelization points to this wetland being historically used as pasture.

Along the western property boundary, and outside of the watershed to the central wetland, another forested swamp was observed. This is a seasonally flooded to seasonally saturated wetland with both poorly and very poorly drained soil types. It is dominated by red maple, but also includes white pine and eastern hemlock in the overstory. It discharges off-site via a partially ditched intermittent watercourse the northwest, directly into the Quinebaug River. Several smaller wetland pockets were also identified in this general location.

The Switchyard Site is mostly in post-agricultural deciduous woods and shrub tangles, on moderately to gently sloping land, with a mowed field on nearly level topography within its northernmost section. The majority of this portion of the site is upland, with limited wetland areas located along the parcel's eastern property boundary, mostly off-site and within the electric transmission line right-of-way. These wetlands are dominated by scrub-shrub and emergent (i.e., wet meadow) cover types.

4.3 WILDLIFE AND SPECIES EVALUATION

The potential for KEC to impact species, particularly protected species, will be considered in order to incorporate appropriate species protection measures. According to the USFWS, KEC is located within the range of the northern long-eared bat (*Myotis septentrionalis*); therefore, clearing of trees on the parcel would be subject to additional evaluation to determine the likelihood that the Site is used for summer roosting of this species. If not, tree clearing seasonal restrictions would not apply to the Site.

Initial correspondence occurred with the CTDEEP NDDB on February 9, 2016. In its response on March 8, 2016, NDDB identified the need to consider the potential for a threatened butterfly, the frosted elfin (*Callophrys irus*), and two special concern moths, the fragile dagger moth (*Acronicta fragilis*) and the pink star moth (*Derrima stellata*) to occur in the KEC area. Surveys will be completed to determine the potential for presence based on host plants.

Additional special concern species identified by CTDEEP with potential for presence in the vicinity are the red bat (*Lasiurus borealis*), the wood turtle (*Glyptemys insculpta*), and the eastern box turtle (*Terrapene carolina*). Surveys will be conducted to determine their potential presence, and, if so, what protective measures should be incorporated in KEC design and implementation.

4.4 WATER USE AND DISCHARGE

Similarly sized energy generation facilities that utilize wet cooling can require on the order of 4 to 5 million gallons per day (MGD). KEC will utilize air cooling and, therefore, significantly reduces water demand. Water needs for KEC's typical operation will be primarily associated with ultra-purified water for the boiler, which is used to make steam. Although it is a closed-cycle process, and water will be recirculated and recycled through the system, the need to retain water purity in the system means that periodic discharges (or blowdown) of the recycled water and addition of new water (make-up water) occurs. This make-up water will require approximately 50,000 gpd. In hot weather, KEC will use evaporative cooling of the combustion air to enhance its energy output; when in use, the evaporative cooler will use up to an additional 43,000 gpd. A context for KEC's anticipated water demand is illustrated in Figure 6.

Water Use (Gallons)

http://www.nashuatelegraph.com/newsstatenewengland/910832-227/ski-areas-invest-in-snowmaking-to-survive.html

http://www.killington.com/site/mountain/mountain-info/snowmaking_snowfall

http://www.datacenterknowledge.com/archives/2012/08/14/data-center-water-use-moves-to-center-stage/

4 Audubon International estimates that the average American course uses 312,000 gallons per day.

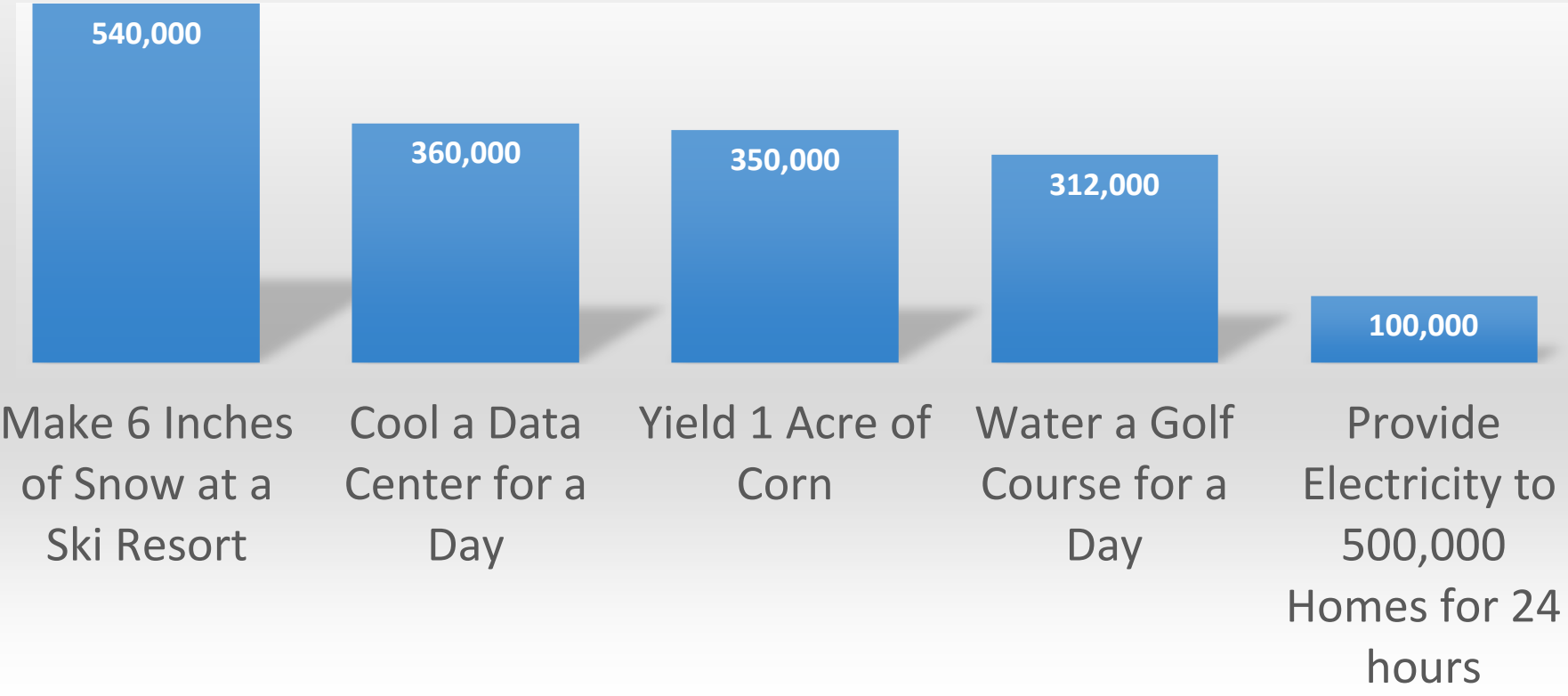

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Figure 6

Context for KEC
Anticipated Water Use

Because limited use of ULSD may be required, additional water use would result for emissions control at times of ULSD fuel firing (during extremely limited times when natural gas is not available). When using ULSD, water is injected to reduce NO_x levels, whereas during natural gas firing, DLN combustion is used. DLN combustion is not available for ULSD firing. Water injection for NO_x control during ULSD firing will increase the total water demand to approximately 400,000 gpd of water.

Therefore, while average water use of KEC would be on the order of 50,000 to 100,000 gpd, the maximum use (reflecting ULSD use) would be approximately 400,000 gpd for those limited occasions when back up fuel is required. The frequency of these occasions is expected to be less than one event every two to three years.

Connecticut Water currently serves the Town of Killingly, including the existing Lake Road Generating Facility and others within the Killingly Industrial Park. Connecticut Water supplies 90,000 customers, or approximately 300,000 people, for residential, commercial, industrial, and municipal purposes in 56 Connecticut communities. As of March 2014, Connecticut Water had 18 surface supplies and 221 wells. Killingly is served by the Crystal Water Division, a portion of its system serving a population of over 6,000 via groundwater wells. Connecticut Water has confirmed suitable and sustainable water supply is available from existing permitted sources. A potential connection to its neighboring system is under consideration that would result in broader enhancement of the area supply. No increased use of the industrial park well will be required.

KEC's wastewater discharge of approximately 30,000 to 90,000 gpd is anticipated to be to the Killingly Water Pollution Control Authority, which discharges into the Quinebaug River. This facility, operated by United Water, has a treatment capacity of 8 MGD. At present, it has an average daily flow into the treatment plant of only 3 MGD; therefore, sufficient capacity is available to treat KEC's wastewater discharge. In addition to providing discharge and treatment services, it is among the potential sources of recycled water being considered to supplement KEC water needs.

State mapping has been reviewed to confirm that the KEC Site is not within an Aquifer Protection Area. KEC will protect existing groundwater by providing secondary containment for all aboveground storage tanks and implementation of a Spill Control and Countermeasures Plan outlining best management practices.

4.5 STORMWATER MANAGEMENT

KEC will incorporate careful consideration of stormwater management into its design, and will develop a Stormwater Pollution Prevention Plan (SWPPP) to detail its best management practices. Calculations to determine the volumes and direction of stormwater flows across the site will be undertaken in order to mimic this existing flow in the post-development design scenario. This will include the incorporation of best management practices consistent with state requirements, as outlined in the 2004 Connecticut Stormwater Quality Manual, which will include appropriate stormwater management design to prevent the potential for offsite impact.

4.6 VISUAL IMPACTS

KEC consists of several major structures located on the Generating Facility Site, many of which will be screened by the significant mature tree growth around the edges of the Site. The tallest structure will be the single exhaust stack associated with the electric generating facility, which is anticipated to be 150 feet tall. Other structures include the heat recovery steam generator (approximately 105 feet tall), the air-cooled condenser (approximately 80 feet tall), the gas turbine/steam turbine building (approximately 90 feet tall), the auxiliary boiler exhaust stack (approximately 90 feet tall), and three shorter exhaust stacks for ancillary emission sources (each approximately 25 feet tall).

Electrical equipment will be located at the Generating Facility Site adjacent to the generating equipment. Overhead transmission lines will extend from the electrical equipment to cross Lake Road, connecting to the proposed switchyard on the Switchyard Site. This location, adjacent to the existing 345-kV transmission lines, will allow for direct interconnection to the existing electric transmission system. To the extent possible, a buffer of trees will be retained around the edges of the site in order to continue to provide visual screening in the immediate area.

In addition to the structural elements of KEC, a water vapor plume (similar to our warm breath on a cold day) will be visible at the exhaust stack only during certain ambient conditions, in particular the coldest days of the year.

Note that the selection of an air cooling system considerably reduces the potential for plume visibility by eliminating the use of a wet cooling tower.

It is not anticipated that air navigation safety lighting will be required on the stack, although this will be confirmed through consultation with the FAA.

KEC will conduct evaluations to identify the manner in which existing views may change as a result of KEC's presence. This will include evaluation of a digital elevation model, used in conjunction with details of the KEC location and height, to indicate the degree to which existing topography will screen KEC from view. An overlay will be created with assumed tree heights used to consider the potential effect of vegetation screening that will occur, particularly during times of the year when deciduous trees have leaves. The result will be a map that indicates locations for which visual change could occur.

Locations will also be selected from which before and after simulations will be prepared. Photographs will be taken from each selected location to reflect existing views toward the proposed KEC. A three-dimensional model of KEC will be utilized to simulate the view with the proposed project in place.

Generally speaking, views from surrounding areas will be well-screened by dense tree cover. Based on preliminary assessments and the visibility of the existing Lake Road Generating Facility, which has similar stack heights and cooling technology but a greater number of stacks, visibility is expected to be minimal; most locations from which KEC visibility may be possible are expected to experience only limited stack-top views over the tree line. Figure 7 provides a preliminary visual simulation from Island Road, on the opposite side of Alexander Lake from the Site, indicating that only the uppermost portion of the stack would have the potential to be visible during leaf-off conditions.

4.7 CULTURAL RESOURCES

The Connecticut Department of Economic & Community Development, Offices of Culture and Tourism acts as the State Historic Preservation Office (SHPO) for review of historic and cultural resource issues in Connecticut. A detailed literature review is being conducted for KEC to identify the historic cultural background of the area. Archaeological investigations have been completed at the Site in accordance with SHPO requirements. No evidence of prehistoric occupations was identified during Phase 1B shovel testing. One site was identified within the Switchyard Site related to the Lippitt Farmstead, including a family cemetery, a possible dwelling foundation and other potential stone walls and outbuildings. However, with the exception of the cemetery, these features have been disturbed over time and no undisturbed artifact concentrations were identified dating to the early 1800s (the origin date of the Lippitt Farmstead). The cemetery will be avoided. Therefore, no additional archaeological investigations are recommended. The resulting report will be submitted to the SHPO to confirm whether further investigation will be required.

4.8 NOISE

KEC will meet all applicable noise requirements at both the state and local level. The stringent standards define acceptable sound levels generated by an industrial facility at its property boundary. The acceptable levels vary depending upon the abutting land use; CTDEEP noise limits are summarized in Table 3, with typical sound levels profiled in Table 4.

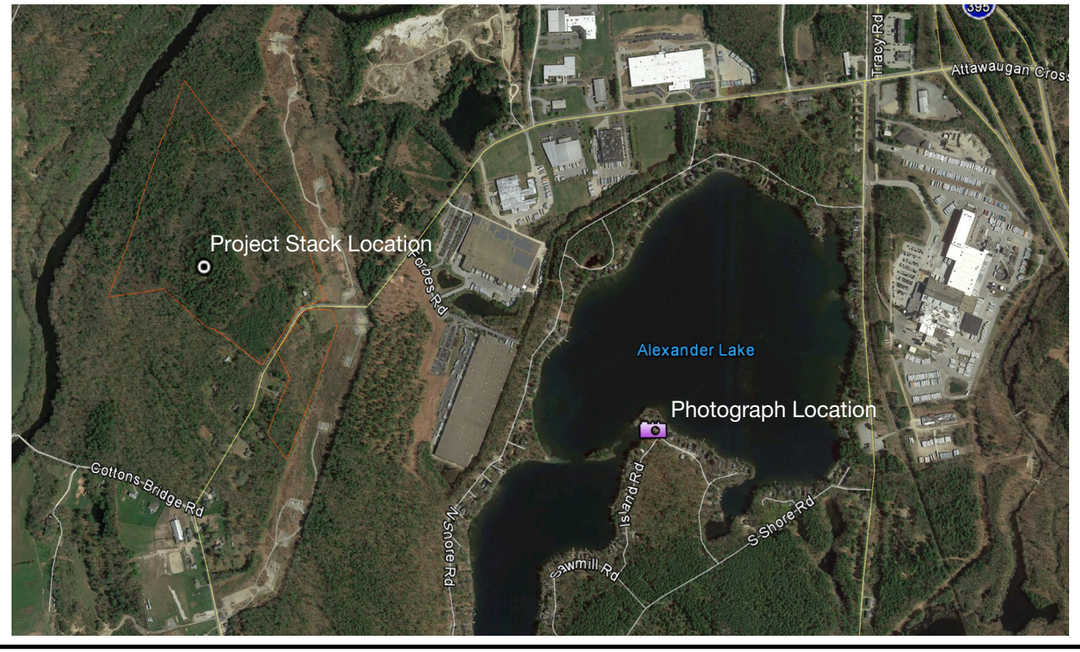

Figure 7

Visual Simulation for Island Road

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Table 3. CTDEEP Noise Limits (dBA*)

Emitter	Receptor			
	Class C	Class B	Class A Daytime (7:00 am – 10:00 pm)	Class A Nighttime (10:00 pm – 7:00 am)
Class C – Industrial	70	66	61	51
Class B – Commercial and Retail Trade	62	62	55	45
Class A – Residential Areas and other sensitive areas	62	55	55	45

*A-weighted decibels

Table 4. Typical Noise Sources and Acoustic Environments

Noise Source or Activity	Sound Level (dBA)	Subjective Impression
Vacuum cleaner (10 feet)	70	Moderate
Passenger car at 65 mph (25 feet)	65	
Large store air-conditioning unit (20 feet)	60	
Light auto traffic (100 feet)	50	Quiet
Quiet rural residential area with no activity	45	
Bedroom or quiet living room Bird calls	40	Faint
Typical wilderness area	35	
Quiet library, soft whisper (15 feet)	30	Very quiet
Wilderness with no wind or animal activity	25	Extremely quiet
High-quality recording studio	20	
Acoustic test chamber	10	Just audible
	0	Threshold of hearing

Adapted from: Kurze and Beranek (1988) and United States Environmental Protection Agency (1971)

The CTDEEP regulations also prescribe provisions for impulse noise, prohibiting impulse noise in excess of 80 decibels (dB) (peak) during nighttime hours in any Class A zone, and 100 dB (peak) at any time in any zone. Audible discrete tones also require special consideration. A limit of 100 dB pertains to infrasonic and ultrasonic noise. Construction noise is exempt from the CTDEEP noise regulations.

The Town of Killingly provides noise level standards applicable to KEC under Chapter 12.5, Article VI (Sections 120-131) of the Code of Ordinances. The Town standards are consistent with those prescribed by the CTDEEP, although the definition of daytime varies. The Town of Killingly considers daytime to be 7:00 am to 9:00 pm, Monday through Saturday, and 9:00 am to 9:00 pm on Sundays. If measured background levels exceed the noise standard, a proposed source can contribute an additional 5 dBA over ambient levels; however, in no event can the proposed source exceed 80 dBA. No impulse sound greater than 80 dBA at night, or greater than 100 dBA at any time is allowed. Construction during daytime hours is exempt from the noise level standards, as is blasting between 8:00 am and 5:00 pm (with proper permits).

NTE has focused on integrating mitigation elements into the design and layout of KEC. For example, the combustion turbine and steam turbine will be enclosed within a structure, and the air-cooled condenser (which has fans that can contribute to sound from KEC) has been decreased in height from typical installations and located as far as possible from the Site boundaries. A noise modeling study is currently underway, the results of which will influence the final KEC mitigation design and will be included in KEC's full application to the Council.

4.9 TRAFFIC

KEC is located approximately 1.25 miles to the west of I-395, a major transportation corridor. Temporary impacts to current traffic levels are anticipated to occur during the construction phase of the Project. Truck traffic delivering equipment and construction materials to the Site, as well as increased traffic associated with construction workers traveling to and from the Site, will occur at varying levels over the three-year construction process. Peak construction, which is anticipated to last for approximately 18 months, is estimated at approximately 350 workers. Traffic will occur along the segment of Lake Road that extends from I-395 to the Site. Much of this is within the current or planned industrial and commercial development area of Killingly. Coordination will occur with the Town to address scheduling to avoid peak commuter periods along that road, and to identify periods when manual control or other measures will be useful to minimize impact to existing users of that local road. NTE will also explore road improvements that would be beneficial to support the construction effort and future Town goals.

Once KEC is operational, associated traffic is expected to be minimal. Approximately 25 to 30 workers will be employed at the Site, working over several shifts; limited regular deliveries of supplies will also occur. Traffic levels would only increase during major maintenance periods and the rare instances that ULSD would be used as fuel. However, this will be mitigated by providing for ULSD storage on-site and by the direct highway access afforded by this Site.

Detailed traffic studies will be undertaken to compare existing traffic levels to those anticipated in the future with KEC, and to identify whether any effect on existing road users will occur.

4.10 SOLID WASTE DISPOSAL

KEC will not result in unusual demand to local solid waste disposal infrastructure or systems. During construction, materials and debris will be typical of any construction project. Once KEC is operational, typical solid waste will be associated with the administrative functions and would reflect typical office waste. Recycling, reuse, and disposal of specialty equipment and materials would be done under contract with specialty vendors and would not impose on local services.

4.11 EMERGENCY RESPONSE

KEC will incorporate state-of-the-art monitoring, alarm and control systems, and conduct rigorous employee training for emergency situations.

Contingency plans, procedures, and equipment needs for emergency response will be coordinated with the Town of Killingly and adjoining communities, consistent with federal, state, and local regulations. Killingly's knowledge and experience with the existing Lake Road Generating Facility provides a useful benchmark for anticipated programs and procedures.

NTE is committed to compliance with the most current Occupational Safety and Health Administration standards, including National Fire Protection Association 56 PS "Standard for Fire and Explosion Prevention During Cleaning and Purging of Flammable Gas Pipeline System," which requires that only inert gases or compressed air be used for all cleaning of pipes during construction.

4.12 ELECTRIC AND MAGNETIC FIELD EFFECT

Potential changes in electric and magnetic field effects are typically considered for electric generating facilities that require a connection to the existing electrical transmission grid. In this case, the Site is located adjacent to an existing 345-kV electric transmission corridor that will allow for this interconnection to occur without the need for a lengthy off-site interconnecting corridor. Calculations will be completed to confirm that field effects at the edge of the property are within guidelines established for protection of public health.

5.0 PUBLIC BENEFITS

As noted in Section 1.2, KEC provides considerable benefits by bringing a cost-effective, highly efficient, and flexible resource to the energy generation base that will increase reliable electricity generation and reduce regional emissions. KEC is well positioned to meet the growing regional demand for power resulting from recent and anticipated retirements of older, less efficient power generation facilities.

In addition, KEC brings strong economic and other benefits to the local community. With an investment of over $500 million, KEC would be one of the largest property taxpayers in the Town. This added tax revenue is provided without a significant demand on municipal services.

During construction, 250 to 350 construction jobs will be required. Workers will be stimulating the local economy through the use of local restaurants, hotels, retailers, etc. during this nearly three-year period of construction. In operation, KEC is expected to result in 25 to 30 full-time jobs, most of which are highly technical and specialized with lucrative salaries. NTE plans to use local labor, local service providers and local subcontractors when possible in the construction and operation of the facility.

In addition to the substantial increase in tax revenue and jobs in the local economy, NTE partners with the communities it works in through sponsorships, community programs, job training and educational opportunities. These will include being a part of community events like Bike Night and the Great Killingly Tomato Festival, and partnering with local schools, universities and business parks like the Putnam Tech Park, local Technology Student Association, Quinebaug Valley Community College and Ellis Technical High School.

6.0 PROJECT SCHEDULE

An anticipated schedule is shown in Figure 8. KEC is currently working to complete studies to support major permit applications. NTE anticipates that applications will be filed by late spring/early summer 2016. Agency review and public participation will be ongoing throughout 2016, with a goal of having major permits issued for KEC in the first quarter of 2017.

KEC expects to commence construction during the second quarter of 2017, and will require approximately three years to complete Site preparation, construction, and testing to support providing power to the electrical grid in 2020.

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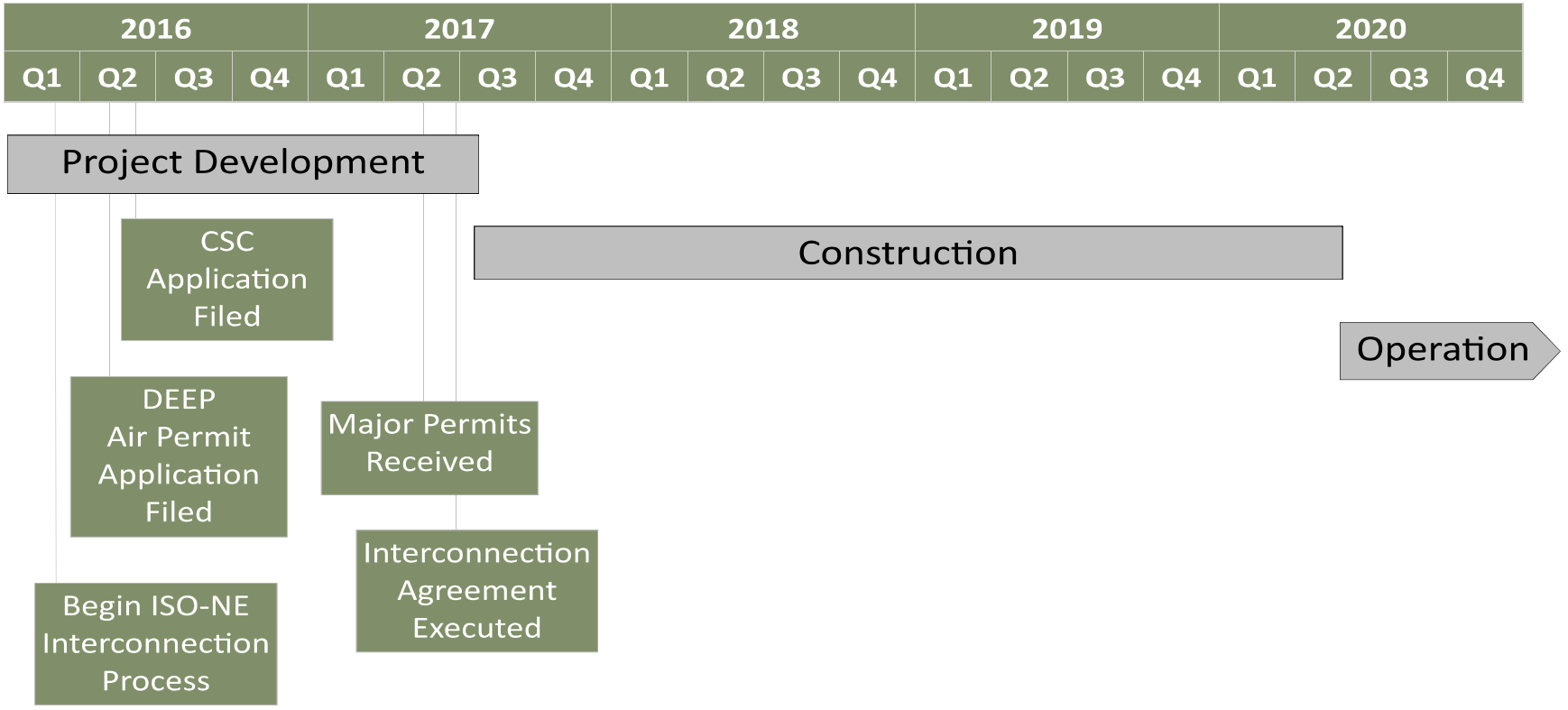
Project Schedule



NTE ENERGY

Figure 8

Anticipated Schedule