STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
APPLICATION OF NTE CONNECTICUT, LLC	:	DOCKET NO. 470
FOR A CERTIFICATE OF ENVIRONMENTAL	:	
COMPATIBILITY AND PUBLIC NEED FOR	:	
THE CONSTRUCTION, MAINTENANCE AND	:	
OPERATION OF AN ELECTRIC POWER	:	
GENERATING FACILITY OFF LAKE ROAD,	:	
KILLINGLY, CONNECTICUT	:	APRIL 24, 2017

PROPOSED FINDINGS OF FACT OF NTE CONNECTICUT, LLC

Council Proceedings

1. On August 17, 2016, NTE Connecticut, LLC ("NTE") applied to the Connecticut Siting Council ("Council") for a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction, maintenance, and operation of a 550 megawatt ("MW") natural gas-fired combined-cycle electric generating facility on Lake Road in the Town of Killingly, Connecticut (the "Killingly Energy Center", "KEC", or the "KEC Facility"). (NTE Exhibit 1 ("NTE 1")).

2. The parties in this proceeding are the applicant NTE, the Town of Killingly (the "Town"), Not Another Power Plant ("NAPP"), the Sierra Club, the Connecticut Fund for the Environment ("CFE"), and the Wyndham Land Trust, Inc. ("WLT"). NAPP, the Sierra Club and WLT were also granted intervenor status under Connecticut General Statutes ("C.G.S.") § 22a-19 ("CEPA").

3. In accordance with C.G.S. § 16-50l(b) and Council guidelines, notice of NTE's intent to file the application was published in the Norwich Bulletin on August 15 and 16, 2016, and sent, via certified mail, to all property owners who abut the subject parcel. (NTE 1, p. 7; NTE 2; NTE 7, p. 2).

4. In accordance with C.G.S. § 16-50m and Council guidelines, a public notice sign was placed on the subject parcel on October 4, 2016, notifying the general public of the Council's October 20, 2016 Public Comment hearing, which was held at 6:30 p.m. at Killingly High School Auditorium, 226 Putnam Pike, Killingly, Connecticut. (NTE 11).

5. The Council and its staff conducted a field review of the proposed KEC site on Thursday, October 20, 2016 beginning at 3:30 pm. Also on that day, NTE flew a red balloon with a diameter of approximately 3 and a half to 4 feet at the proposed stack location to simulate the height of the proposed stack. The balloon was raised just before 8:00 am and remained aloft until after 6:00 pm. The balloon reached a height of 150 feet above the proposed final grade of the KEC facility (the height of the stack), which was 465 feet above mean sea level (amsl). The weather conditions for the balloon flight were generally fairly clear with light winds increasing throughout the day. (Transcript ("Tr."), pp. 5, 178-180).

6. The Council held evidentiary hearings on November 3, 2016, November 15, 2016, December 15, 2016, January 10, 2017, January 26, 2017, and March 23, 2017 at the Council's office, 10 Franklin Square, New Britain, Connecticut. (Tr. pp. 151, 359, 587, 692, 826, and 1021).

Community Outreach

7. Beginning in January 2016, NTE officials began meeting with municipal officials in Killingly, Pomfret, and Putnam, State Legislators, members of the community from Killingly and surrounding towns, and participated in numerous community events throughout the duration of these proceedings. (NTE 5, p. 4; Tr. pp. 1046-1047).

8. NTE has developed and maintained a project website to promote awareness of the project. The website contains the Application, the project schedule, contact information and forms, reports, technical information, presentations, other news and announcements about the KEC Facility proposal. The reports include the KEC Technical Report, the wetland report, the visual, sound, and traffic impact reports, the geotechnical and hydrogeologic reports, and the Environmental Justice Report, among others. (NTE 29, pp. 12-13; NTE 29, App. K).

9. On March 8, 2016, NTE made a presentation to the Killingly Town Council about the KEC project. (NTE 29, p. 17).

10. On March 22, 2016, NTE held its first public meeting, in the form of an open house, at the Gold Eagle Banquet Hall, 8 Tracy Road, Dayville, Connecticut to give community members an opportunity to learn about the project and discuss the project details with NTE representatives. Notice of the meeting was provided via a flyer that was mailed to approximately 350 addresses most proximate to the proposed KEC site. (NTE 1, p. 6; NTE 7, p. 2; NTE 29, App. A).

11. On March 31, 2016, pursuant to C.G.S. § 22a-20a, NTE submitted an Environmental Justice ("EJ") Public Participation Plan ("EJ Plan") to the Connecticut Department of Energy and Environmental Protection ("DEEP") outlining the coordinated public participation activities that NTE would conduct to provide early, active, and meaningful public involvement in all phases of the project. The EJ Plan evolved and was updated throughout the outreach process. DEEP approved the EJ Plan on April 19, 2016. Copies of the approved EJ Plan were filed with the Council on September 28, 2016. (NTE 6).

12. On April 22, 2016, NTE sent out its first of many emails to its email contact list of adjacent property owners, local officials, community and environmental organizations, meeting attendees, and other interested community members announcing a public informational meeting to be held on May 4, 2016. The initial email went to 30 contacts. The email contact has list has grown to over 130 contacts since then. (NTE 29, p. 10).

13. On May 4, 2016, in accordance with C.G.S. § 16-50l(e) and Council guidelines, NTE submitted the KEC Technical Report to the Towns of Killingly, Putnam and Pomfret, including a description of the proposed electric generating facility, the need for the facility, the site selection process, and the nature of potential environmental effects. Copies of the Technical Report were filed with the Council as one of the Application's Bulk File Exhibits on August 17, 2016. (NTE 5, p. 2; NTE 1.a).

14. On May 4, 2016, NTE held a public information meeting at the Gold Eagle Banquet Hall. A public notice of the meeting was published in the *Norwich Bulletin* on April 18, 2016. Notice of the meeting was also provided by a sign at the project site, and on the project website, in addition to the email

distributed to the email contact list discussed above. The public meeting provided community members and local officials an opportunity to ask questions and discuss the project and its implications with NTE representatives. (NTE 1, p. 6; NTE 5, p. 3; NTE 29, App. Y).

15. At the request of the administrator of the DEEP EJ program ("DEEP EJ Administrator"), NTE held a second public information meeting on July 11, 2016 at Killingly High School, following the same public notice procedures used for the first public meeting. (NTE 1, p. 6; NTE 7, p. 2; NTE 29, App. Y).

16. On July 19, 2016, NTE participated in a special joint meeting of the Town of Killingly Inland Wetlands and Watercourse Commission ("IWWC") and Planning & Zoning Commission ("PZC") to provide a project overview and update. (NTE 5, p. 3; NTE 5, Att. 4).

17. The DEEP EJ Administrator notified NTE on July 28, 2016 that NTE had satisfied the public meeting requirements of the EJ program. (NTE 29, p. 6).

18. On September 8, 2016, the Town of Killingly provided NTE with its Third Party Document Review prepared by TRC Environmental Corporation ("TRC"). (Town 2).

19. On September 16, 2016, NTE provided the Town of Killingly with a detailed response to TRC's Third Party Document Review. (Town 2).

20. On September 22, 2016, NTE attended a special meeting of the PZC where the PZC discussed the project and potential Orders of Regulations and Restrictions ("R&R Orders") to be recommended by the Town. (NTE 29, p. 17).

21. On September 27, 2016, NTE attended a special meeting of the IWWC where the IWWC discussed the project and potential R&R Orders to be recommended by the Town. (NTE 29, p. 17).

22. On September 29, 2016, the DEEP EJ Administrator provided NTE with supplemental questions from various members of the community. NTE held a third public information meeting on October 19, 2016 at Killingly High School to answer the questions received from the DEEP EJ Administrator. (NTE 29, p. 6).

23. On October 11, 2016, NTE made a presentation to the Killingly Town Council about the proposed tax stabilization agreement and Community Environmental Benefit Agreement ("CEBA"), including a discussion of proposed financial and other benefits. (NTE 29, p. 6).

24. On October 13, 2016, the Town of Killingly issued R&R Orders from the PZC and IWWC. (Town 3 and 4).

25. On October 27, 2016, NTE filed its Appeal of and Responses to the Municipal Regulate and Restrict Orders ("Appeal and Response"). In the Appeal and Response, NTE agreed to the majority of conditions requested by the Town and identified a number of changes that would be made to the project to address community concerns, including, but not limited to:

    - Two storm water basins and two crushed stone trenches between the basins were added at the headwaters of Wetlands A1 and A3, and all storm water basins were redesigned to incorporate a crushed stone layer to encourage infiltration.
    - The ultra-low sulfur distillate ("ULSD") tank design was revised to include a secondary steel containment structure, allowing for elimination of the bermed spill containment area.

- The air-cooled condenser ("ACC"), gas compressor building, and ring road were relocated or reconfigured and a retaining wall was removed to increase the separation distance from wetland boundaries.
- Revisions were made to the grading plan to ensure a minimum 25-foot no disturbance buffer from the wetland boundaries can be maintained.
- Two hydrodynamic separators were added to the project design, so the project will now have 3 separate discharge points with hydrodynamic separators for each discharge.
- The size of the created wetlands area on the Switchyard Site was increased from 17,000 square feet to 18,750 square feet.

(NTE 15, pp. 1-12).

26. On November 30, 2016, the Town of Killingly Town Manager held a meeting with the public soliciting input on the use of the proposed benefits offered by NTE under the CEBA. (Tr. pp. 1032-1033).

27. On December 8, 2016, NTE submitted the Killingly Energy Center Environmental Justice Plan Final Report to the DEEP EJ Administrator, and subsequently to the Council. (NTE 29).

The Proposed KEC Site

28. The KEC site is located at 180 and 189 Lake Road in the Town of Killingly, Windham County, Connecticut. The Towns of Pomfret and Putnam are located within 2,500 feet of the KEC site. (NTE 1, p. 22).

29. The proposed KEC site consists of a 63-acre parcel at 189 Lake Road (to the north and west of Lake Road), also referred to as the Generating Facility Site, and a 10-acre parcel at 180 Lake Road (to the south and east of Lake Road), also referred to as the Switchyard Site, in Killingly, Connecticut (the Generating Facility Site and the Switchyard Site together referred to as the "Property"). (NTE 1, p. 114; NTE 14, p. 1).

30. The Property is currently located in Killingly's Rural Development District. The Killingly Plan of Conservation and Development (the "Plan") was adopted in 2010 as a guide to the Town's decisions regarding land use planning and growth management over the following decade. The Plan outlines goals and objectives for future land use, the provision of public facilities and services, environmental protection, economic development and land conservation to provide a healthy environment, thriving economy, and high quality of life for residents. The Plan acknowledges the important role the Killingly Industrial Park has played in creating jobs and revenues for the Town. (NTE 1, pp. 121-125).

31. The Future Land Use map in the Plan indicates the Town's intent to expand the Killingly Industrial Park to encompass the Generating Facility Site. This expressed intention to designate the Generating Facility Site for industrial development was one of several factors that led to selection of this location for KEC. (NTE 1, pp. 121-125).

32. In total, the northwest Killingly industrial area maintains more than 2.2 million square feet of industrial, manufacturing and warehouse facilities and related infrastructure. This includes the Lake Road Generating Facility (an approximately 800 MW combined cycle electric generating facility), a 460,000 square foot Frito Lay manufacturing facility, a 460,000 square foot Rite Aid Distribution center, as well as other manufacturing and warehouse facilities. (NTE 1, pp. 116-17).

33. The KEC Facility is proposed to be located to the west of the Killingly Industrial Park and other industrial development in the area, separated from the industrial area by a transmission line right-of-way ("ROW") owned and operated by the Connecticut Light and Power Company, doing business as Eversource Energy ("Eversource"), where Eversource has installed and operates 115-kV and 345-kV transmission lines. (NTE 1, pp. 15, 22, 125).

34. Alexander Lake is located approximately 0.5 mile east of the KEC site (beyond the 442,000 square foot United Natural Food Warehouse facility and the 460,000 square foot Rite Aid Distribution Center). The Alexander Lake shore-front is developed with both seasonal and year-round residences. (NTE 1, pp. 116-117).

35. Within Killingly's existing industrial zone, maximum specified building/structure height is 50 feet, with special permit authorization allowed for heights necessary for the efficient operation of the proposed industry as long as it does not significantly interfere with present or reasonably anticipated uses of other property. The heights required for KEC structures taller than 50 feet relate to its functional design and operational requirements, and the KEC structures will not significantly interfere with the present or reasonably anticipated use of other property, consistent with the special permit authorization. (NTE 1, pp. 125-126).

36. The finished ground elevation of the proposed site would be approximately 315 feet in the vicinity of the stack. (Tr. p. 363).

Alternatives

37. Over the course of several months, NTE researched and evaluated numerous prospective sites for the development of a new power generating facility in Connecticut, based on the identified need for flexible, reliable baseload power generation in Connecticut and New England. These other sites included locations in: Wallingford; Danbury; Milford; East Granby; Berlin; Waterbury; Killingly; Pomfret; and Putnam. These sites were rejected because of inadequate size, inadequate infrastructure (such as lack of reasonable access to natural gas pipeline and transmission line infrastructure), and/or location outside an industrial area. (NTE 1, pp. 174-175).

38. Three sites in Killingly were evaluated. The final KEC site was selected because of adequate parcel size, robust and nearby natural gas and transmission infrastructure, site buffering capabilities, ability to avoid major wetland disturbance, the site owner's interest in selling the property, and the Town's future land use plan to expand its industrial park. (NTE 1, p. 178).

The Proposed Project

39. KEC will be a natural gas-fired combined cycle facility consisting primarily of a combustion turbine generator ("CTG"), a Heat Recovery Steam Generator ("HRSG"), and a steam turbine generator ("STG"), all located on the Generating Facility Site. (NTE 1, p. 33).

40. NTE proposes to install one Siemens SGT6-8000H CTG that will produce approximately 300 MW (nominal). The CTG is a rotary internal combustion turbine engine consisting of four major sections—the compressor, the combustor, the turbine, and the electrical generator. The CTG will incorporate NOx combustion control technologies, including dry-low NOx (DLN) combustors for natural gas firing and water injection for firing on ULSD. (NTE 1, p. 33).

41. The gas and steam turbine generators proposed to be installed at KEC will be built in Charlotte, North Carolina. (Tr. p. 1119).

42. The HRSG will be equipped with natural gas-fired duct burners for supplemental firing. The steam produced from the HRSG will power the STG, and the exhaust steam will be condensed back into water via a multi-fan ACC. The CTG and STG will be enclosed inside the turbine building. A central control room will also be provided proximate to the turbine building. The HRSG will exhaust via a 150-foot tall stack. (NTE 1, pp. 28-35).

43. The STG will be a 3,600 rpm, tandem compound, reheat steam turbine with a high pressure/intermediate pressure section and double flow low pressure section design. The STG will generate approximately 250 MW (nominal) with supplemental duct firing of the HRSG. (NTE 1, p. 35).

44. To minimize the water requirements of KEC, steam from the STG will be condensed in an ACC with the condensed water sent back to the HRSG. The multi-fan ACC will cool and condense the exhaust steam from the STG. An ACC-equipped facility, like KEC, utilizes approximately 95 percent less water than a conventional wet-cooled facility, and eliminates a significant source of visual water vapor plume. (NTE 1, pp. 35-36).

45. The ACC, directly attached to and abutting the STG, and associated condensate system (where the condensed water will be recirculated for reuse), will be located east of the HRSG. The system will consist of 15 modules and will be designed for reliable operation under all operating loads. (NTE 1, pp. 35-36).

46. The balance of major KEC equipment will include an auxiliary boiler, backup diesel generator, emergency fire pump engine, 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% aqueous ammonia (NH_3) (used for nitrogen oxide ("NOx") control). An administration building and associated parking will be located on the east side of the Generating Facility Site, adjacent to the access driveway. The administration building will consist of offices, conference rooms, and warehouse/storage space. (NTE 1, p. 28).

47. The CTG and STG outputs, at 20 kV and 18 kV, respectively, will be connected to their respective generator step-up transformers ("GSU"), both located immediately adjacent to those generators on the Generating Facility Site. Each GSU will "step-up" the respective generator output voltage to 345 kV, which will allow for connection to the Eversource regional transmission system. (NTE 1, p. 15).

48. The plant switchyard, located adjacent to the GSUs on the Generating Facility Site, and the nearest equipment to Lake Road, will consist of two, high voltage 345-kV circuit breakers, disconnect switches, and associated bus structures, and will serve to consolidate the output from both generators (i.e., the full KEC Facility) to a single point. From this point, a short three-phase transmission line segment will cross Lake Road, originating from a vertical tangent structure in the collection yard located on the Generating Facility Site, and terminating at a vertical tangent structure located within the Utility Switchyard located on the Switchyard Site, south of Lake Road. (NTE 1, p. 15).

49. The proposed Utility Switchyard, which will be owned by Eversource, will be located immediately adjacent to Eversource's 115-kV and 345-kV transmission line ROW. The Utility Switchyard will be designed in a three-breaker ring bus configuration to allow for an in-and-out tap of the existing 345-kV transmission line, such that the power generated by KEC can flow through the existing line. The existing Eversource ROW includes two 115-kV transmission lines immediately adjacent to the

Switchyard Site, with two 345-kV lines on the opposite side of the ROW. KEC will connect to Eversource's 345-kV Line 3271, which was installed in 2015. (NTE 1, p. 15).

50. The developed portion of the Switchyard Site will be surrounded by security fencing. Access to the Utility Switchyard will be via a gravel road extending southeast from Lake Road to the fenced Utility Switchyard. A small gravel parking area will be located outside of the security fencing. Within the security fence, an interior road will encircle the Utility Switchyard equipment for ready access. (NTE 1, p. 27).

51. Electric motor-driven natural gas compressors (one for use and one for redundancy) will be located on the Generating Facility Site to ensure the gas pressure entering the CTG meets turbine manufacturer specifications. Natural gas supplied by Algonquin Gas Transmission ("AGT") may vary in pressure, depending on other system demands. The electric natural gas compressor(s) will provide additional compression, when needed. (NTE 1, p. 38).

52. A natural gas-fired auxiliary boiler will operate as needed to keep the HRSG warm during periods of turbine shutdown, and provide steam to the steam turbine during plant startups to reduce startup times and emissions. The auxiliary boiler will be equipped with low NOx burners to minimize NOx emissions. The auxiliary boiler will have a maximum input capacity of 84 MMBtu/hr and will be limited to 4,600 hours per year of operation. (NTE 1, p. 38; Tr. pp. 341-343).

53. A ULSD-fired backup generator engine with a maximum power rating of 1,380 kilowatts (kW) (mechanical) will provide backup power to support on-site emergency loads in the event of a total power loss on the local or regional transmission grid. During use of the backup generator, energy would not be supplied to the electrical grid. The backup generator engine would only be used in the case of grid unavailability and for periodic readiness testing; as such, its operating hours will be limited to a maximum of 300 operating hours per year (a total of 500 hours for both the backup generator and the emergency fire pump). (NTE 1, p. 38).

54. The emergency fire pump engine will provide on-site firefighting capabilities as a backup to the electric motor-driven fire pump. The emergency fire pump engine will fire ULSD fuel, and will typically only operate for testing and to maintain operational readiness in the event of an emergency. It will be limited to a maximum of 300 operating hours per year (a total of 500 hours for both the backup generator and the emergency fire pump). (NTE 1, p. 38).

55. When fired with natural gas, KEC will have a nominal electric production capability of approximately 550 MW, with 301 MW from the CTG. Exhaust heat from the CTG will pass through the HRSG and produce steam that will drive the STG. This process will result in the generation of approximately 248 MW, when the duct burners are in operation, and 151 MW without the duct burners. KEC will have an approximately 14-MW parasitic load (nominal) with duct firing, resulting in a total net output to the grid of approximately 535 MW (nominal) with duct firing. (NTE 1, p. 39).

56. KEC will have a 6,500 Btu/kWh full load heat rate and 29 MW per minute turbine ramp rate. (NTE 7, p. 8; NTE 26, p. 7)

57. When firing ULSD, KEC will have a total gross electrical production capability of 383 MW (nominal), with 260 MW from the CTG and 123 MW from the STG. Duct firing will not occur when firing ULSD in the CTG. (NTE 1, p. 39).

58. A one million-gallon storage tank will be constructed south and west of the turbine building to store ULSD. The tank will have a steel containment structure and interstitial monitoring. This will provide

sufficient ULSD for approximately two days' use at full operating load, with truck delivery to replenish the supply should extended use be required. The plant is expected to be permitted to operate a maximum of 720 hours (30 days) per year on ULSD. (NTE 1, pp. 41-42; Tr. p. 187).

Public Need and Benefit of the Proposed Project

59. The New England Independent System Operator ("ISO-NE") is an independent, non-profit Regional Transmission Organization ("RTO") serving Connecticut, Massachusetts, New Hampshire, Rhode Island, Vermont, and portions of Maine. Among other items, ISO-NE operates the region's transmission network and administers the Federal Energy Regulatory Commission ("FERC") approved wholesale energy, ancillary, and capacity markets. Load-serving entities located within the State of Connecticut are members of ISO-NE. (NTE 1, p. 7).

60. ISO-NE operates a unified power grid operating in all six New England states. Generator-related events (e.g., retirements and unit failures) that occur outside of Connecticut can have a material impact inside of Connecticut (e.g, higher electricity prices and lower reliability of electric service). Connecticut is an inseparable part of and contributor to the health and reliability of the regional electricity system. (NTE 20, p. 5).

61. ISO-NE annually prepares the Capacity, Energy, Loads and Transmission ("CELT") report, which includes electricity demand projections for the next ten (10) years. (Council Admin. Notice 22).

62. ISO-NE annually establishes the Installed Capacity Requirement ("ICR"), which is the minimum amount of capacity required for ISO-NE to meet future system-wide electricity demand. (NTE 1, p. 10).

63. ISO-NE's most recent demand projections in the 2016 CELT report, based on gross summer peak load, increase from 28,966 MW in 2016 to 31,794 MW in 2025. (Council Admin. Notice 22, Table 1.1; Tr. p. 954).

64. To calculate net summer peak load, ISO-NE subtracts from gross summer peak load its projections for behind-the-meter solar power and passive demand response. (Tr. p. 954-955).

65. ISO-NE's demand projections for net summer peak load are flat or increasing slightly, from 26,704 MW in 2016 to 27,122 MW in 2025. (Council Admin. Notice 22, Table 1.1; Tr. pp. 955-957).

66. To achieve these flat or slightly increasing demand projections, there will need to be increases in behind-the-meter solar power and passive demand response in the range of 5 to 13% per year from 2016 to 2025. (Tr. pp. 960-961; Council Admin. Notice 22, Table 1.1).

67. Energy efficiency or passive demand response measures cost $2-4 million per megawatt to procure, which costs are paid by electricity consumers, compared to approximately $1 million per megawatt to build KEC, which costs are only paid by electricity consumers if KEC supplies electricity to the grid. (Tr. p. 1115-1117).

68. In order to continue to see increases in energy efficiency to the extent ISO-NE projects n the 2016 CELT report, it may become necessary to invest in improvements to heating, ventilating and air conditioning technologies, which are more expensive than investments in lighting improvements, which currently make up the majority of energy efficiency savings. (Tr. pp. 772-773).

69. Demand response measures can reduce energy usage, but they have little impact on peak demand. (Tr. p. 416).

70. ISO-NE's projected reserve capacity is declining from 2019 through 2025, without accounting for projected retirements. (Council Admin. Notice 22, Table 1.1, section 4; Tr. pp. 969-973).

71. The following power generation facilities, representing approximately 4,200 MW of non-gas generating capacity, are retired or forecasted to retire by ISO-NE by the end of 2020—collectively representing approximately 15% of the total capacity in ISO-NE: Norwalk (Retired); Bridgeport Harbor 2 (Retired); Brayton Point (Retiring by 2017); Pilgrim (Retiring by 2019); Mt. Tom (Retired); Salem Harbor (Retired); Vermont Yankee (Retired). Of these retired power generation facilities, Norwalk and Bridgeport Harbor 2 are located in Connecticut and represent approximately 500 MW of non-gas generating capacity—approximately 5% of the total capacity in Connecticut. (Council Adm. Notice 28, p. 11; NTE 20, pp. 16-17).

72. ISO-NE, in its 2016 Regional Electricity Outlook, has identified the following facilities to be ""at-risk of retirement"" as soon as 2020. Collectively, these facilities represent more than 6,000 MW of capacity—approximately 20% of the total capacity in ISO-NE: Bridgeport Harbor 3, Middletown, Montville, New Haven, Canal, West Springfield, Mystic, Yarmouth, Merrimack, Schiller, and Newington. Of these at-risk electric generating facilities, Bridgeport Harbor Unit 3, Montville, New Haven, and Middletown are located in Connecticut and represent approximately 2,500 MW of non-gas generating capacity—approximately 20% of the total capacity in Connecticut—which exceeds the amount of new capacity known to be coming on-line in Connecticut. If all 6,000 MW retires, ISO-NE would have to procure approximately 4,000 MW of new capacity resources to meet the minimum reliability requirement (NICR, or Net Installed Capacity Requirement) even with KEC's approximately 500 MW of new capacity included. No prior FCA has procured 4,000 MW of new capacity resources. (Council Adm. Notice 28, p. 11; NTE 14, pp. 9-10; NTE 20, pp. 7-8, 16-17).

73. Approximately 35% of ISO-NE's non-gas generating capacity has retired, is retiring relatively soon, or at risk of retiring by 2020, and approximately 30% of Connecticut's non-gas generating capacity has retired, is retiring relatively soon, or at risk of retiring by 2020. (NTE 14, p. 10; Tr. p. 268).

74. The generating facilities that are at risk of retiring are an average of 50 years old, have significantly higher heat rates and emissions than KEC, have higher operating costs than KEC (i.e., produce more expensive energy), and their ramp rates are significantly lower than KEC. (NTE 20, p. 7).

75. ISO-NE accomplishes system planning for reliability via the capacity procurement mechanism established in the Forward Capacity Market ("FCM"), approved by FERC in 2006. As members of ISO-NE, Connecticut load-serving entities participate within ISO-NE's FCM capacity procurement mechanism to meet projected peak electricity demand plus a target amount of reserves. It is through the FCM that ISO-NE determines the reliability-driven need for new capacity resources like KEC. The FCM takes into account locational capacity needs to ensure that regional zones have sufficient capacity to maintain reliability when transmission constraints prevent the delivery of electricity to any particular capacity zone. As part of the FCM, ISO-NE conducts yearly Forward Capacity Auctions ("FCAs") to procure capacity resources needed to meet projected system electricity demand. (NTE 1, pp. 9-10).

76. Each FCA is conducted three years prior to the capacity commitment period (i.e., delivery year) for which it is being held. For each FCA, capacity resources receive a capacity supply obligation ("CSO") of at least one year, which requires the capacity resource to bid into the energy market. In

return, cleared capacity resources receive the applicable clearing price for that FCA (and can be financially penalized if they do not deliver on the assigned capacity supply obligation). (NTE, pp. 9-10).

77. The capacity clearing price has been declining in recent FCAs. (Tr. p. 1171).

78. The clearing price in FCA 11 held on February 6, 2017 was $5.297/kW-month. (NAPP Admin. Notice 27, p. 2)

79. NTE's minimum bid price approved by the Internal Market Monitor for FCA 11 was below the final clearing price. (Tr. p. 1155).

80. NTE withdrew from FCA 11 prior to the final round. (Tr. p. 1154-1155).

81. While NTE could have bid in the final round, NTE was not comfortable obtaining a capacity supply obligation given the unknown final clearing price and the permitting and schedule uncertainties that existed at the time of the auction. (Tr. pp. 1155-1156).

82. The clearing price of $5.297/kW-month was the dynamic de-list price for at least one existing facility, meaning that had KEC remained in the auction and the price dropped below $5.297/kW-month, that existing facility would be required to retire and KEC would have received a capacity supply obligation. (Tr. pp. 1170, 1195-1196).

83. NTE indicated that it would accept a Council condition of approval that it obtain a capacity supply obligation prior to starting construction. (Tr. p. 1179).

84. The 2014 Connecticut Integrated Resources Plan ("IRP") advocates for increasing amounts of demand response and renewable generation resources, and also affirms that conventional resources such as KEC are also required to maintain the reliability of New England electricity system (of which Connecticut is an interconnected part). The IRP also states that reliability could be a concern in Connecticut if as much as 2,000 MW of capacity retires. (NTE 20, p. 14; Tr. pp. 412-413; Council Adm. Notice 66, pp. 13-14).

85. As (i) the net demand for electricity is lowered by demand response resources, and (ii) the amount of renewable generation increases due to state RPS targets, this will result in (iii) an increasing proportion of electricity demand being served by intermittent and variable renewable generation. In turn, this increases the need for flexible, efficient, and dispatchable power generation on the system to help ISO-NE manage the intermittent nature of the renewable generation. (NTE 20, pp. 15-16; Tr. p. 949).

86. Wind and solar, while valuable components of the capacity resource mix, are intermittent and variable resources and are not fully dispatchable (i.e., they cannot quickly adjust their output to respond to changing demand). Moreover, their output cannot always be depended on; sometimes the wind does not blow and the sun is obscured (at night or by cloud cover). KEC, as a fully dispatchable resource, with its 6,500 Btu/kWh full load heat rate and 29 MW per minute turbine ramp rate, is needed to ensure the reliable integration of these intermittent resources into the system. (NTE 14, pp. 6-7; NTE 20, p. 11; Tr. pp. 727-728).

87. Most utility-scale solar and wind projects in ISO-NE are supported with power purchase agreements, the cost of which is paid by electricity customers. The cost of these projects is currently more than the cost of obtaining the equivalent amount of electricity in the competitive market. For example, the

Block Island off-shore wind project currently costs electricity customers hundreds of millions of dollars more than if the same amount of electricity were obtained in the competitive electricity markets. (NTE 25, pp. 13-15).

88. In October 2016 the results of the New England Clean Energy RFP were announced, and no off-shore wind, battery storage, or new Canadian hydro imports were selected. (NTE 25, p. 13).

89. In November 2016, the Connecticut Department of Energy and Environmental Protection announced that 25 bidders had been selected from over 100 bids received for Class I renewables. The selected projects did not include off-shore wind, battery storage or new Canadian hydro imports. (NTE 25, p. 14).

90. Current ISO-NE market rules for battery storage require the battery to be able to discharge electricity for at least 2 hours to qualify as a capacity resource in the Forward Capacity Market. (Tr. p. 939).

91. Projections contained in the Massachusetts State of the Charge Report shows that 72% of the battery power storage in 2020 will only be capable of discharging for less than 2 hours. (Tr. p. 939).

92. Federal subsidies such as the investment tax credit and production tax credit for renewable resources will decrease from 2016 on, phasing down or out by approximately 2020. (Tr. pp. 1002-1003).

93. In order for the deployment of intermittent resources such as solar and wind energy to continue to grow, ISO-NE will need fast-responding, flexible capacity resources that are not constrained in their operation. (Council Admin. Notice 33, p. 6).

94. The reduction in electricity demand from demand response resources is also likely to result in downward pressure on energy and capacity prices, which will simultaneously reduce revenues for power generation within the State of Connecticut. While lower energy and capacity prices result in lower wholesale electricity costs, benefitting ratepayers, they also could expedite the retirement of approximately 2,500 MW of at-risk retirements in Connecticut, increasing the need for KEC. (NTE 20, p. 16; Tr. pp. 274, 770).

95. KEC provides two attributes that contribute to system reliability, especially during the winter, when availability of fuel for power plants is a concern. First, KEC has a firm gas supply contract that is not dependent on upgrades to the existing natural gas pipelines. Second, KEC is a dual-fuel facility, with the ability to switch operations to ULSD in the unlikely event that a gas curtailment impacts, for short periods of time, those facilities holding firm gas supply contracts. (NTE 20, pp. 9-10; Tr. pp. 184-185, 985).

96. KEC's flexible and efficient operating attributes are very similar to the Towantic Energy Center—where in Finding No. 80 of that Certificate process, the Council concluded "flexible and reliable generation [like the Towantic dual-fuel, combined cycle plant] will be needed to maintain system reliability, while supporting the increasing amounts of intermittent renewable generation." (NTE 20, p. 12; Tr. pp. 284-286, 949).

97. KEC's entry into the electric generation marketplace will result in a decrease in annual emissions by New England power plants due to KEC operating ahead of (i.e., displacing) older, less efficient and higher-emitting power plants in the market. During the initial five years of KEC's operations (assumed to be 2020-2024), region-wide emissions of carbon dioxide (CO_2) are projected to decrease by 1.5 million tons, while NO_x and sulfur dioxide (SO_2) are projected to decrease by 3,500 tons and

1,900 tons, respectively. The cumulative decrease in CO_2 is equivalent to planting 35,000,000 trees. (NTE 1, pp. 12-13; Tr. pp. 736-738).

98. The reduction in emissions is primarily driven by KEC's high operating efficiency, which in technical terms equates to a low full load heat rate. More specifically, as a highly-efficient combined cycle natural gas-fired electricity generating facility, KEC burns less fuel (e.g., natural gas) per megawatt-hour (MWh) of electricity produced than nearly all of the existing natural gas-, fuel oil-, and coal-fired power plants in New England, resulting in lower energy costs for KEC. As such, due to KEC's lower energy costs, it will be dispatched, or operated, ahead of electric generation facilities with higher energy costs (which are also less environmentally friendly) currently operating in the market. (NTE 1, p. 13; NTE 14, p. 14; Tr. pp. 265-268).

99. In addition to the emission reduction benefits discussed above, NTE has stated its commitment to reduce greenhouse gas emissions by 80% by 2050. This will help Connecticut meet or exceed carbon dioxide emissions reduction targets under the Connecticut Global Warming Solutions Act. (Tr. pp. 1129-1130; NTE 16, pp. 5-6).

100. When KEC enters the market, it is likely to be one of only a handful of facilities in New England with both firm natural gas and ULSD supply, and it will be 25 percent more efficient at generating electricity than today's average Connecticut power plant. (NTE 1, p. 14).

101. At the October 11, 2016 presentation to the Town Council, NTE proposed a financial package that included proposed tax payments and CEBA cash and tangible benefits totaling approximately $100 million. The CEBA tangible benefits included an approximately 20-acre conservation easement, increased capacity and improved reliability of the community water supply by connecting the Killingly and Plainfield water supply systems, and improvements to Lake Road. (NTE 29, App. T).

102. Following the October 11, 2016 meeting and the November 30, 2016 meeting with the public to discuss the CEBA package, the Town continued to negotiate the terms of the tax stabilization agreement and CEBA with NTE. As of the January 26, 2017 evidentiary hearing, the Town and NTE had essentially finalized the terms of the agreements, subject to final approval by the Town Council, which the Town Manager would recommend. (Tr. pp. 1025, 1027-1029).

103. The tax stabilization agreement proposed in October, which was the subject of subsequent negotiations, included pre-operation payments for two years, a different annual payment amount for operational years 1 through 7, and a third annual payment amount for operational years 8 through 20. (NTE 29, App. T).

104. Other benefits proposed under the CEBA included a one-time cash payment to fund community projects, creation of a conservation easement, improved reliability of the community water supply by connecting the Killingly and Plainfield water supply systems of the Connecticut Water Company ("CWC"), improvements to Lake Road, and a project decommissioning commitment, and NTE supplied a letter to the Town about committing to a property value guarantee with residents near the plant. (NTE 29, App. T; Tr. pp. 878, 1038-1039).

105. At the height of construction, KEC will employ nearly 300 workers with annual wages of more than $50 million. (NTE 1, App. B-2, p. 3).

106. Upon completion of construction, KEC will support more than 25 full-time on-site positions with attractive salaries and benefits, including total annual wages of $3 million. (NTE 1, App. B-2, p. 3).

107. In addition to the direct job benefits described above, KEC will provide significant indirect and induced economic benefits, in the form of hundreds of jobs by 2024 and hundreds of millions of dollars in increased economic output from 2017 through 2024, to the Town of Killingly, the region, and the State of Connecticut. (NTE 1, p. 12, App. B-1, p. 5, App. B-2, p. 8).

Permits and Approvals

108. The 150-foot stack is KEC's tallest structure. On July 18, 2016, the FAA issued a Determination of No Hazard to Air Navigation for the proposed stack. (NTE 1, App. J). Based on the FAA's evaluation, no navigation marking or lighting of the stack is deemed necessary. (NTE 1, p. 130).

109. NTE will be required to obtain the following major permits or approvals from the Connecticut Department of Energy and Environmental Protection ("DEEP"): Air Permit to Construct; Title IV Acid Rain Permit; Title V Permit to Operate; Clean Water Act Section 401 Water Quality Certification; Wastewater Discharge Permit, General Permit for Stormwater Discharge. NTE will also be required to obtain a Clean Water Act Section 404 General Permit from the Army Corps of Engineers. (NTE 1, p. 193).

Site Work

110. The KEC footprint, once constructed, will occupy approximately 13 acres of the 63-acre Generating Facility Site. A total of 24 acres on the Generating Facility Site will be graded and used during construction; this includes the KEC footprint; utility switchyard; stabilized grading and stormwater management features; and temporary construction worker parking and equipment laydown. The construction laydown and staging areas will be reestablished as green areas once construction is complete. Portions of these areas may be used for overflow or emergency parking with grass pave or a turf reinforcement option. Upon completion of KEC, only 2.1 acres of the site will be paved surfaces and an additional 3.3 acres will be buildings and other impervious surfaces. (NTE 1, p. 32).

111. A buffer of at least 50 feet will remain around the entire perimeter of the Generating Facility Site with the exception of the access driveway, and maintenance drive to the northern stormwater basin. Existing vegetation will be retained wherever practical. Existing stone walls will also be maintained where feasible. (NTE 1, p. 32; Tr. pp. 364-365).

112. Site preparation will, in certain portions of the KEC site, require the removal of existing trash piles, vegetation, roots, and stumps; stone walls that cannot be retained; topsoil; subsoil; fill soil; unsuitable materials; rock; structures and foundations; and subsurface utilities. (NTE 1, p. 70).

113. With the exception of the small cemetery on the Switchyard Site, the existing structures and foundations on the KEC site will be removed. Following demolition and the removal of debris, the KEC site will be graded and excavated utilizing techniques such as clearing, grubbing, material removal, and limited blasting. The intent of the grading plan is to minimize the total net import or export of material (i.e., balance the total cut and fill). To achieve this, during this process, excavated material will be reused on-site as fill wherever possible. Soils or material unsuitable for use on-site will be recycled off-site for landscaping or non-engineering grade fill. (NTE 1, p. 70; Tr. p. 662).

114. Import of limited quantities of clean, tested structural fill may be required if adequate material is not present on site. (NTE 1, p. 70; Tr. p. 197).

115. In some locations, excavation up to 30 feet of glacial till and bedrock are proposed to reach the required subgrade. Conventional heavy construction equipment, such as excavators, bulldozers, graders, front-end loaders, and dump trucks, can remove soils and portions of weathered rock (e.g., cobbles and boulders) that will be encountered at the ground surface and in the glacial till. (NTE 1, p. 70).

116. Certain areas will require blasting to reach the proposed subgrades. Pre-blast surveys will be performed upon permission for all structures within approximately 250 feet of the blasting location, including room-by-room and wall-by-wall video documentation and well water quality tests, to document existing conditions. Controlled blasting techniques will be planned in advance and will be used to ensure that nearby structures are not damaged by blasting, flyrock or vibrations. Conventional blasting mats will be utilized to contain flyrock within the construction work area. Vibrations from blasting will be minimized by carefully controlling the size and timing of the blasts. By utilizing a series of smaller blasts instead of one large blast, vibrations are greatly reduced. A specialized blasting contractor will implement the work in accordance with a formal blasting plan. (NTE 1, p. 70; NTE 16, pp. 15-16).

117. To minimize and mitigate adverse impacts, detailed construction procedures will be developed and implemented in accordance with Best Management Practices, which will aim to maximize the use of previously disturbed areas; minimize clearing of forested areas; avoid excessive earth movement; and maintain practical technical equipment orientation to facilitate construction in an efficient, safe, and least-impact manner. (NTE 1, p. 71).

Water Use

118. Normal operation of KEC when firing natural gas will require on the order of 50,000 to 100,000 gallons per day (gpd) of water. On an average operating day, up to 50,000 gpd will be required primarily for HRSG makeup. When ambient temperatures are above approximately 59°F, KEC will use evaporative cooling of the combustion turbine inlet air to enhance efficiency and energy output. The evaporative cooler will use up to an additional 50,000 gpd, depending on ambient temperature. (NTE 1, p. 46).

119. In those limited times when the plant is required to use ULSD for grid reliability purposes, additional water will be needed, up to a total amount of 400,000 gpd for all plant operations. However, ULSD firing would only occur during extremely limited times when natural gas is not available, and at no time would occur for more than 720 hours over a given year. (NTE 1, p. 46).

120. A 500,000-gallon water storage tank will be constructed on-site to store demineralized water for HRSG makeup water, and for water injection for NOx emissions control when using ULSD. (NTE 1, p. 50).

121. Water will be demineralized using a reverse osmosis membrane and mixed bed polisher located in the water treatment building, a dedicated structure to be located on the northeast corner of the site adjacent to the water storage tanks. (NTE 1, p. 50).

122. Water for fire protection is supplied from the 500,000 gallon raw/fire water storage tank. This tank will have a dedicated reserve of approximately 150,000 gallons for fire protection. (NTE 1, p. 50).

123. To maintain adequate water supply pressure to KEC, a small booster pump station may be constructed on-site. Pumps and underground piping will be constructed on-site to supply KEC's needs. (NTE 1, p. 50).

124. KEC's water supply will be provided by the Connecticut Water Company (CWC), Crystal Water Division, a subsidiary of Connecticut Water Service, Inc. (NTE 1, p. 46.).

125. CWC has indicated that it has a sufficient supply of water, including appropriate margins of safety and with consideration for drought conditions, to supply KEC's water needs. (NTE 1, App. H-1; NTE 28; Tr. pp. 405-406, 663-664).

126. To reliably provide water to KEC, CWC will connect, solely at NTE's expense, CWC's infrastructure in Plainfield to its infrastructure in Killingly. (NTE 1, App. H-1; Tr. pp. 405-406, 424-425).

127. NTE determined that CWC was the preferred option because of the confirmation and commitment of adequate supply by CWC, the infrastructure improvements would provide increased capacity and reliability of the water supply to the Town of Killingly, and the CWC option would require a simple and reliable water treatment system at KEC, result in less makeup water and wastewater discharge, have no impact on the Quinebaug River, and require lower installation and operating costs. (NTE 22).

128. NTE evaluated using treated effluent from the Killingly Water Pollution Control Authority ("KWPCA") for its water needs. NTE determined that this was not the preferred alternative because of the variability of the treated effluent water quality, reduced reliability due to water treatment complexity, increased makeup water requirements, increased load on the KWPCA due to increased KEC wastewater discharge, decreased flow to the Quinebaug River, and higher installation and operating costs. In addition, this option would require a water supply from an entity that is neither obligated nor under contract to provide such water. (NTE 22).

Water Discharge

129. Wastewater generated by KEC will include demineralizer water treatment (reverse osmosis system) reject, plant equipment and floor drain discharges, sanitary wastes, CTG evaporative cooler blowdown, and HRSG blowdown. (NTE 1, p. 50; Tr. pp. 191-192).

130. It is estimated that the KEC will produce an average of approximately 30,000 to 45,000 gpd of wastewater under normal natural gas-fired operation, and up to 90,000 gpd of wastewater during ULSD operation. Wastewater generated by KEC will be pre-treated to the extent required to assure compliance with sewer discharge requirements of the Town of Killingly's sewer system, operated by Suez. Use of an oil/water separator for the building drains will ensure compliance with these criteria. (NTE 1, p. 51).

131. All wastewaters will flow directly, via an approximately 3,100-foot sewer interconnection, to the existing Killingly sewer system piping located in Lake Road. Suez confirmed that the existing wastewater collection and treatment system has the ability to accept and treat the required volumes. (NTE 1, p. 51; NTE 1, App. H-2).

Project Fuel

132. KEC will generate approximately 550 MW of electricity using primarily natural gas, with ULSD as a limited use backup fuel. ULSD use will be limited in accordance with KEC's air permit to instances when natural gas is not available, and for no more than 720 hours on rolling annual basis. It is expected that the actual use of ULSD will be on the order of once every two to three years. The ability to utilize ULSD as a backup fuel enhances reliability for the ISO-NE grid under conditions when natural gas use may be curtailed or is unavailable and electricity is required. The HRSG will be equipped with natural gas-fired duct burners for supplemental firing, and evaporative cooling of the CTG combustion air will be used to increase efficiency when temperatures exceed 59°F. (NTE 1, p. 39).

133. Natural gas will be supplied via a new natural gas pipeline lateral interconnected to one of the two nearby AGT natural gas pipelines that lie approximately 2 miles to the north of the Property. KEC will require a maximum of 3.9 million cubic feet (MMcf) per hour of natural gas when operating at 100% load at a minimum pressure of 550 pounds per square inch gauge (psig) at the inlet of the gas turbine interface and approximately 650 psig at the KEC site boundary. (NTE 1, p. 39).

134. A proposed interconnection will provide natural gas to KEC utilizing the existing Yankee Gas ROW located just west of the Property. Yankee Gas will replace, solely at NTE expense, the existing pipeline with a new expanded natural gas pipeline in the existing ROW capable of serving the natural gas fuel supply requirements of KEC and the natural gas customers currently served. Yankee Gas will also install a short section of natural gas lateral along Lake Road from the existing ROW to the Generating Facility Site specifically to serve the natural gas fuel supply requirements of KEC. The updated ROW, including the lateral, will be approximately 2.8 miles long and will include metering at the AGT pipeline and metering/regulation at the KEC site. (NTE 1, pp. 39-41; Tr. pp. 432-433).

135. Natural gas supplied to KEC will pass through a moisture separator prior to use. A vane type filter/separator will be provided in the gas stream, upstream of the CTG, to restrict particles and liquids from entering the combustion turbine. (NTE 1, p. 41).

136. Natural gas will be provided through a firm natural gas fuel supply contract to meet KEC's requirements. This arrangement will minimize gas supply costs and provide high levels of reliability and operational flexibility. (NTE 1, p. 41).

137. During certain unforeseen natural gas pipeline supply curtailments, KEC will use ULSD to fire the CTG in accordance with the air permit. Although NTE is requesting authorization from DEEP to use ULSD for up to 720 hours per year (30 days), actual use is expected to occur on the order of once every two to three years and only under the circumstance where natural gas supply is not available. ULSD, which has a maximum sulfur content of 0.0015%, will be purchased from local suppliers. (NTE 1, p. 41).

138. The ULSD storage system will include a one million gallon storage tank with a steel containment structure and interstitial monitoring, a truck unloading area, fuel pumping facilities, and associated piping from the storage area to the combustion turbine. The fuel storage tanks, truck unloading area, and associated pumping and piping facilities will be designed in accordance with all applicable regulatory standards and will include appropriate secondary containment features. (NTE 1, p. 41; Tr. p. 187).

Fire Protection

139. The on-site fire protection system will consist of hydrants, hose stations, sprinkler systems, foam systems for the ULSD storage area, deluge systems, CO2 system, and portable fire extinguishers. Water for fire suppression will be supplied from KEC's 500,000-gallon raw/fire water storage tank. Water supply from this tank will be designed to maintain a minimum of approximately 150,000 gallons of water storage for use in the unlikely event of a fire. The fire suppression system will include one electric- and one diesel engine-driven main fire pump and one small jockey pump for pressure maintenance. A fire main will be installed, with hydrants situated throughout the Generating Facility Site. A standpipe system will be provided for the turbine building. (NTE 1, p. 56; Tr. p. 393).

140. The CTG will include a high-pressure CO2 fire protection system, the STG will include sprinkler systems, and the GSU will include a deluge system. Portable CO2 and dry chemical fire extinguishers will be provided throughout KEC buildings to provide quick response in the event of a fire. (NTE 1, p. 56).

141. In addition to the on-site resources, NTE will coordinate and train with local fire stations to ensure that appropriate equipment and training is available to meet emergency needs. NTE will keep an emergency response plan and will ensure that proper access for fire and emergency response personnel is maintained. NTE will also retain a special inspector, at its cost, to assist the municipal fire marshall in reviewing the construction plans and conducting inspections, and remit a fee to the Code Training Fund to be used in the training of local fire marshalls on the complex issues of electric generating construction. (NTE 1, p. 56; NTE 7, p. 34-35; NTE 15, p. 15).

Facility Operation

142. KEC is proposed to be permitted for continuous operation seven days per week, 52 weeks per year, although two weeks of routine maintenance outage time is typically expected per year. (NTE 1, p. 39).

143. During normal operation, the generation from KEC may vary from approximately 40% load (or 220 MW gross) to 100% load (550 MW gross) depending on the ISO-NE electric system dispatch. (NTE 1, p. 39).

144. KEC is designed for a service life of at least 30 years, and, as noted above, has committed to reducing its greenhouse gas emissions by 80% by 2050. (NTE 1, p. 39; Tr. pp. 1129-1130).

145. KEC's equipment and construction costs are anticipated to total $537 million. Equipment costs total $318 million, and include: the combustion turbine and generator; the heat recovery steam generator (HRSG); the exhaust stack; the steam turbine and generator; cooling and related systems; and the plant switchyard. Construction and other costs total $219 million, and include development, design, and construction. (NTE 1, p. 19-20).

Visibility

146. The 150-foot stack, the tallest feature of KEC, will be located in the north-central portion of the layout, just to the southwest of the center of the Generating Facility Site. The stack will be a neutral color steel construction and will include a galvanized test platform. (NTE 1, App. K, p. 7).

147. The Generating Facility Site has substantial wooded vegetation, with only the southeastern corner near Lake Road unscreened by trees. The Switchyard Site is more open along Lake Road, but much

of the Switchyard Site is also heavily forested. Although clearing will be required around KEC and for the proposed temporary work spaces, an approximately 50-foot wooded buffer will be maintained wherever possible. Landscaping is planned around the entrance, near the front of the administration building, and near the associated visitor parking area. There will also be landscaping planned along the frontage of the Switchyard Site. (NTE 1, App. K, p. 7).

148. Tetra Tech, Inc. ("Tetra Tech") performed a visual impact assessment for a 5-mile radius around the KEC site. Tetra Tech identified locations with potential views of the 150-foot tall KEC stack using a digital elevation model viewshed analysis, and then generated photographic simulations to assess the potential impact to the visual landscape. The analysis focuses on the anticipated change in observer views toward the 73-acre property within which KEC is proposed, including whether there would be a change in the character or quality of the view, and considers the viewer context as it relates to the manner in which a change would be experienced. (NTE 1, App. K, p. ES-1).

149. For the majority of vantage points within the 5-mile radius, potential views of KEC will be screened by intervening distance, topography, vegetation, and/or existing structures. (NTE 1, p. 131; Tr. pp. 196-197).

150. At certain locations, elements of KEC will be visible, most particularly the top of the stack. Simulations have been prepared to illustrate the limited vantage points from which KEC may be visible. In those locations, the view will typically be fleeting (as for travelers along Lake Road) or visible within a context comprised of similar landscape features, as KEC will be located within an industrial area and relatively proximate to a similar facility, the Lake Road Generating facility, which has three slightly taller stacks. (NTE 1, pp. 131-32).

151. KEC's lighting will be limited to the amount necessary for safety and will be designed to prevent excess light extending off of the Property. Lighting will be directed inward, toward the KEC structures and equipment. Additionally, in many instances, lighting will be minimal unless triggered by a motion sensor or manually turned on for safety, security, or task lighting. (NTE 1, App. K, p. 35).

152. The only potential visible plume will be the water vapor emitted from the stack under certain operating and atmospheric conditions. Any visible plume from this source would be the result of water vapor condensation forming in the exhaust plume as it exits the stack, similar to a person's visible breath on a cold winter morning. (NTE 1, App. K, p. 35).

Noise

153. KEC has integrated low-noise features into its layout and design to meet the stringent state and local requirements. These features include: positioning louder equipment (e.g., the air-cooled condenser fans) towards the middle of the site; the use of sound attenuation enclosures around major equipment (e.g., the combustion turbine); the placement of noise-generating equipment inside buildings; and the incorporation of mitigation measures (e.g., acoustic silencers, sound walls or barriers, and specifying low-noise equipment). (NTE 1, p. 133).

154. The adjacent residential property line will experience KEC sound levels of 46 to 49 dBA, meeting the 51 dBA requirement found in state and local regulations. All other residential property lines will experience KEC sound levels of 44 dBA or lower. The majority of the more densely populated residential areas (around Alexander Lake and southwest of the Property closer to Route 101) will experience KEC sound levels that are at 30 dBA or below. (NTE 1, p. 133; Tr. pp. 376-377, 573).

155. Nighttime sound associated with KEC will not only comply with the required 51 dBA at the property boundary but, due to noise attenuation of residential construction, will result in an interior noise level at the nearest residence ranging from 31 dBA to 36 dBA. This is well within the range of typical interior noise levels in bedrooms where people are sleeping, which is 30 dBA to 40 dBA (Harris 1998). (NTE 1, p. 133).

156. While daytime construction noise is exempt from state and local regulation, NTE will implement construction management protocols, including noise mitigation measures, to minimize noise impacts during construction. These measures include maintaining tools and equipment in good working order, limiting use of major earth moving equipment to daytime hours, scheduling major construction activities during normal working hours, using properly operating mufflers on internal combustion engines, limiting evening shift work to low noise activities, and establishing community communications protocols. (NTE 1, App. L, p. 17).

157. The facility will comply with all local and state noise regulations. (NTE 1, App. L, p. 24; Tr. pp. 643, 1055-1056).

Traffic

158. KEC is located approximately 1.35 miles from a major interstate highway (I-395) and proximate to an industrial area that currently supports truck and other traffic. Once KEC is operational, very little traffic will be associated with the facility. (NTE 1, p. 129).

159. When KEC begins commercial operation, the staff is anticipated to include 25 to 30 employees working over three shifts. This represents a total of 32 vehicle trips during the morning peak hour and 30 vehicle trips during the afternoon peak hour, according to the ITE *Trip Generation Report.* This is an insignificant number of trips that will not significantly impact the existing level of service at the nearby intersections. In the rare circumstances when KEC will operate using ULSD, the ULSD tank can be replenished by two fuel delivery trucks per hour. The additional truck traffic anticipated for fuel delivery will not add significantly to the level of truck traffic currently using the segment of Lake Road from I-395 to the KEC site and will not have a significant impact on the local roadway network. (NTE 1, p. 128; NTE 1, App. I).

160. All truck traffic from the KEC site will be directed east toward I-395. NTE will relocate the existing "no through truck traffic sign" on Lake Road to a location just west of the KEC entrance driveway. (NTE 1, p. 128; Tr. pp. 328-330, 333).

Historic and Cultural Resources

161. Historical and archaeological background research has been conducted; detailed archaeological surveys have been conducted; and an evaluation has been completed of structures currently located on the KEC site. These investigations have concluded that no significant cultural resources exist that will be adversely affected by construction or operation of KEC. (NTE 1, p. 137; NTE 1, App. N).

Geology of the Proposed Site

162. The elevation of the Property ranges from approximately 238 feet amsl along the northwestern boundary of the Generating Facility Site, to a maximum elevation approaching 391 feet amsl in the southwest corner of the Switchyard Site. The undulating Generating Facility Site reaches a maximum elevation of just over 362 feet amsl in the southwest corner. (NTE 1, p. 67).

163. Test borings conducted at the Property encountered an approximate range of 1 to 5 feet of topsoil/subsurface soil overlying an approximate range of 2 to greater than 28 feet of glacial till overlying the bedrock. Cobbles and boulders were also observed at the ground surface. The observed glacial till was dense to very dense gray-brown silty sand consisting of sand, silt and gravel deposits. Drill rig response and drilling also indicated this stratum includes numerous cobbles and boulders. (NTE 1, p. 66; NTE 1, App. C).

164. The bedrock observed at the Property was hard gray gneiss to white quartzite with a low foliation angle. When bedrock was encountered in the testing bores, the top of the bedrock elevation ranged from approximately 3 to 24 feet below ground surface. Locally, the bedrock is weathered. (NTE 1, p. 66; NTE 1, App. C).

Wetlands

165. A delineation of wetlands and waterways at the KEC site has been completed that identified approximately 10.95 acres of regulated wetland within the 73-acre site. (NTE 1, p. 76; NTE 1, App. E).

166. On the Generating Facility Site, the 'A series' wetlands are interconnected and are the major wetland system. The 'A series' consists of a man-made pond (Wetland A1) and two intermittent stream wetland systems (Wetland A2 and A3) that join together before flowing off-site. (NTE 1, App. E, pp. 3-6).

167. A small disturbed wetland (Wetland X) is located near Wetland A1, with other small pockets of wetland (Wetlands C and E) located farther from Lake Road and the KEC footprint. There is also Wetland B, located in the far western section of the Generating Facility Site, and contains a small embedded vernal pool habitat. (NTE 1, App. E, pp. 7-8).

168. All wetland fill has been avoided on the Generating Facility Site, and design measures have been incorporated to preserve wetland functions and values. (NTE 1, p. 76).

169. On the Switchyard Site, Wetland D is a portion of a larger wetland that is located within the existing electric transmission ROW that extends onto the property. Due to various constraints, approximately 0.3 acre of wetland impact is unavoidable on the Switchyard Site. Wetland replication and restoration is proposed to offset this proposed impact. This will include a wetland replication area of at least 18,750 square feet to be located within a conservation easement of approximately 0.77 acre, as well as wetland restoration in the form of invasive vine and shrub removal (approximately 18,000 square feet on the Switchyard Site and 35,000 square feet on the Generating Facility Site). A post-construction invasive species control plan will also be prepared and implemented. (NTE 1, p. 76; NTE 15, p. 11).

170. NTE will implement construction procedures to protect stormwater quality at the Property. The drainage design and water quality mechanisms have been designed in accordance with the 2004 Connecticut Stormwater Quality Manual. Potential sources of pollution have been evaluated, and mitigation measures and construction procedures have been compiled in a site-specific SWPPP. (NTE 1, p. 108; NTE 15, Ex. 3).

171. Existing stormwater flows on the Generating Facility Site drain generally northward from a central wetland area with higher elevations. The proposed development will result in the disturbance of approximately 24 acres of upland area. Following construction, the majority of the KEC footprint

not taken up by structures will consist of pervious materials, with slopes of approximately 2%. (NTE 1, p. 109).

172. The existing, well-established, dense vegetation on the Property currently influences stormwater runoff, slowing and reducing runoff and increasing losses from infiltration, evaporation, and transpiration. Stormwater management will prioritize minimizing the area of disturbance and protecting the natural features of the land to the maximum extent possible. Measures will include: limiting the total area of clearing and grading; minimizing the area exposed to active development at any one time; protecting vegetation from construction equipment with fencing, tree armoring, tree walls and/or retaining walls; installing operating storm drainage systems and stable outlets as soon as possible; and adhering to a construction schedule to complete final grading and stabilization as soon as possible. (NTE 1, p. 109).

173. During construction, the potential sources of water pollution (e.g., oil; paint, solvents, cleaners, and other chemicals handled and/or stored on-site; construction debris and dirt) will be carefully managed to prevent accidental release. Staked haybales will protect storm drains from sediment prior to paving. Following the initial paving, silt socks or sacks, crush stone berms or stone filled geotextiles may be installed to replace the haybales as appropriate. (NTE 1, p. 109).

Site Ecology

174. Approximately 23 acres of trees will be cleared at the Generating Facility Site, and less than 1.5 acres of trees will be cleared at the Switchyard Site. Tree clearing has the potential to affect forest-interior bird species (e.g., wood thrush, ovenbird, scarlet tanager). The new forest edge created by KEC could also extend the zone of influence of the brown-headed cowbird further into the interior of the Generating Facility Site's upland and wetland forested habitats. (NTE 1, p. 78).

175. The northern and northwestern sections of the Generating Facility Site, which includes the western bedrock dominated ridge, as well as the eastern forested ridge, will continue to provide suitable habitat for all the species currently present, with the possible exception of the Louisiana waterthrush (*Parkesia motacilla*), a wetland-depended species, observed breeding within Wetland Unit A3, which may be displaced to other available wetland areas in the vicinity of the KEC site. (NTE 1, p. 78).

176. Two potential amphibian breeding areas were identified early on in February, 2016, during initial reconnaissance field investigations at the Property. Specifically, these were the man-made pond (i.e., Wetland A1), and a small flooded portion of Wetland B located in the far western portion of the Generating Facility Site. The small area of vernal pool habitat embedded in Wetland B is the only viable on-site habitat for the breeding and reproduction of wood frogs and spotted salamanders, which are considered obligate "vernal pool" amphibians. While spotted salamander egg masses were observed at the man-made pond (Wetland A1), predation by fish, green frogs and bullfrogs, and other predators (e.g., crayfish), preclude successful reproduction. Wetland A1 is not a vernal pool. In fact, the pond is an "ecological sink" or "trap" which, due to the surrounding suitable terrestrial habitat and the favorable hydroperiod, attracts spotted salamanders to a poor quality habitat for breeding, with only a slight possibility of reproductive success. However, the pond appears to be suitable breeding habitat for green frogs (*Lithobates clamitans*), to a lesser extent for bull frogs (*Lithobates caesbeianus*), and also for spring peepers (*Pseudacris crucifer*). It also contains a sizable population of smallmouth bass (*Micropterus dolomieu*) (NTE 1, p. 79; NTE 21, pp. 2-12).

177. Although the vernal pool habitat that is located within a portion of Wetland B does not have optimal hydrology for the reproduction of spotted salamanders (*Ambystoma maculatum*), it is possible that successful reproduction could be supported during certain years. Given that adult spotted

salamanders live for 15 to 20 years, with some recorded as old as 30 years, a population is likely to exist in the area surrounding that vernal pool. (NTE 1, p. 80; NTE 21, pp. 2-12).

178. Development associated with KEC will not encroach more than about 430 feet from the edge of the vernal pool habitat in Wetland B, as measured from the toe of the proposed fill slope. A significant amount of suitable terrestrial habitat will remain in the vicinity of this breeding habitat for both of the obligate vernal pool amphibians to use during the terrestrial phase of their lifecycle. Dispersal and connectivity corridors will remain significantly intact, including connectivity with other documented off-site vernal pool habitat, thus continuing to support metapopulation dynamics. (NTE 1, p. 80).

179. REMA Ecological Services, LLC conducted reptile surveys at the Property for NTE. This included targeted searches for the two "Connecticut-listed" reptiles (i.e., wood turtle, eastern box turtle) that have been documented by DEEP in the vicinity of the Property. The listed turtles were not encountered at the Property or in its immediate vicinity. However, other reptiles, particularly snake species, were encountered at the Property, including milk snake (*Lampropeltis t. triangulum*), brown snake (*Storeria dekayi*), and ring-neck snake (*Diadophis punctatus edwardsii*). (NTE 1, p. 80; NTE 1, App. F-1).

180. At the Property, the core habitat for the wood turtle is located off-site, west and northwest, along the Quinebaug River riparian corridor. While suitable terrestrial habitat exists at the KEC site, such as deciduous woods and open field, local topography greatly inhibits connectivity between the Quinebaug River habitats and those of the KEC site; the Generating Facility Site's prominent western ridge blocks movement of wood turtles and slopes immediately to the east of the Quinebaug River are too steep for wood turtle passage. Although possible, it is not considered likely that wood turtles occur at the Property. (NTE 1, p. 80).

181. Measures will be implemented during construction (e.g., silt fencing and confirmation that no turtles are located within the work space), following CT DEEP guidelines, to prevent potential impact to turtle species. (NTE 1, p. 80).

182. An acoustic bat survey, approved by USFWS, was conducted by Tetra Tech, targeting the federally and state-listed northern long-eared bat. While the northern long-eared bat was not detected, several other bat species were detected as potentially foraging or roosting at the Property. Of the five bat species detected, four species—the eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and little brown bat (*Myotis lucifugus*) —are "listed" in Connecticut. Based on the presence of the "Connecticut-listed" bat species at the Property, no tree clearing will occur in the months of June and July in order to avoid the pup season for the bat species. (NTE 1, p. 81; NTE 1, App. F-3; Tr. p. 203).

Air Quality Issues

183. KEC will fire natural gas during normal operation, with the capability to fire ULSD as a backup fuel for no more than 720 hours per year, and only under the circumstance where natural gas is not available. (NTE 1, p. 42).

184. KEC, like most of the northeast United States, is located in a designated ozone (O_3) nonattainment area. KEC will implement stringent emission controls in order to demonstrate Lowest Achievable Emissions Rates ("LAER") for NO_X to minimize emissions of this O_3 precursor. Best Available Control Technology ("BACT") will be applied to control emissions of all other regulated pollutants. (NTE 1, p. 43).

185. KEC will utilize clean-burning natural gas with a maximum sulfur content of 0.5 grains per 100 standard cubic feet (gr/100 scf) in conjunction with limited firing of ULSD as backup fuel, to minimize sulfur dioxide ("SO_2"), particulate matter ("PM"), sulfuric acid ("H_2SO_4"), lead ("Pb"), and hazardous air pollutant ("HAP") emissions. Use of a high efficiency CTG in combined cycle mode will minimize greenhouse gas ("GHG") emissions. (NTE 1, p. 44).

186. KEC will use dry low NO_X ("DLN") combustors and a water injection system to control NO_X emissions during combustion of natural gas and ULSD, respectively. Downstream of the combustion control systems, selective catalytic reduction ("SCR") technology will further control NO_X emissions, and an oxidation catalyst will control carbon monoxide ("CO") and volatile organic compound ("VOC") emissions. (NTE 1, pp. 44-45).

187. NTE selected natural gas, the lowest NO_X-emitting fuel available, as KEC's primary fuel source. To ensure reliability, limited firing of ULSD in the CTG may occur when natural gas is unavailable. KEC will fire low sulfur fuels tominimize the quantity of SO_2, $PM_{10}/PM_{2.5}$, H_2SO_4, Pb, and HAP emissions. Due to the negligible ash content in natural gas and the limited hours of ULSD operation, the concentration of $PM_{10}/PM_{2.5}$ from fuel ash will be low. Natural gas is the lowest GHG-emitting fossil fuel and will be the primary fuel for KEC. (NTE 1, p. 45).

188. As required under 40 CFR 75, a continuous emission monitoring system ("CEMS") will be incorporated into KEC to continuously monitor NO_X, CO, and NH_3 emissions from the CTG and duct burners. The CEMS will record emissions to ensure compliance with the required standards. Quarterly CEMS emission reports will be prepared and submitted in accordance with 40 CFR 75. (NTE 1, p. 46).

189. NTE will procure emission reduction credits ("ERCs") to offset the emissions from KEC. The NO_X ERCs will be obtained prior to the date KEC becomes operational, and will come from the same nonattainment area as KEC, or a contiguous nonattainment area that is designated as an equal or higher nonattainment classification that contributes to nonattainment (upwind) in the KEC area. Since NTE will purchase NO_X ERCs to offset potential emissions at a ratio of 1.2 to 1, total regional NO_X emissions will decrease as a result of KEC. Additionally, KEC will displace older, less efficient and higher emitting generating facilities, resulting in further regional air quality improvements. (NTE 1, p. 45; Tr. pp. 335-336, 367-368, 1060-1063).

190. NTE has committed in the air permitting process to reducing KEC's greenhouse gas emissions by 80% by 2050, consistent with the Connecticut Global Warming Solutions Act. (Tr. pp. 1129-1130).

191. Annual potential emissions are presented in Table 1 below:

Table 1 : KEC Facility-Wide Annual Potential Emissions (tons per year [tpy])

Pollutant	CTG and Duct Burners	Auxiliary Boiler	Natural Gas Heater	Emergency Generator	Fire Pump	Facility Total
NO_X[a]	130.1	1.64	0.12	2.92	0.3	135.1
CO[a]	134.6	7.14	0.37	1.60	0.26	144.0
VOC[a]	41.7	0.78	0.03	0.15	0.02	42.7
SO_2	25.1	0.29	0.02	0.003	0.0005	25.4

$PM_{10}/PM_{2.5}$	101.7	0.97	0.05	0.09	0.02	102.8
Greenhouse Gas (GHG) (as CO_2 equivalent [$C0_2e$])	1,989,650	22,610	1,170	308	49	2,014, 335[a]
H_2SO_4	8.76	0.02	0.001	0.0002	0.00003	8.8
Lead (Pb)	0.0018	$9.5x10^{-5}$	$1.2x10^{-5}$	$1.4x10^{-6}$	$2.3x10^{-7}$	0.002
NHa	49.8	N/A	N/A	N/A	N/A	49.8
Max Individual HAP (hexane)	7.17	0.35	0.02	N/A	N/A	7.5
Total Hazardous Air Pollutants (HAPs)	14.3	0.37	0.02	0.01	0.003	14.7

[a] Includes 547 tpy of fugitive GHG emissions from circuit breakers and natural gas handling.

(NTE 18, Table E-6).

192. The project would be subject to the Regional Greenhouse Gas Initiative ("RGGI"), which would require KEC to obtain allowances each year to match its annual CO_2 emissions. (Tr. pp. 391-392)

193. The project would also be subject to the federal Acid Rain Program, under which KEC must obtain enough SO_2 allowances each year to cover its annual SO_2 emissions. (NTE 1, p. 193).

194. As required by the Clean Air Act, the United States Environmental Protection Agency ("USEPA") sets National Ambient Air Quality Standards ("NAAQS") through a rigorous scientific process at levels determined to be protective of the most sensitive individuals such as children, the elderly, and chronic asthmatics. Furthermore, an added margin of safety is included in calculating the standards. (NTE 1, pp. 86-92; Tr. pp. 651, 1067-1068).

195. Based on DEEP-approved air quality modeling, maximum predicted emissions impacts from worst-case scenarios are compared to the Significant Impact Levels ("SILs"). SILs are screening levels used to determine the scope of the required air quality analysis that must be carried out in order to demonstrate that a proposed source's emissions will not cause or significantly contribute to a violation of any NAAQS or increments under the Prevention of Significant Deterioration (PSD) program. If maximum predicted impacts are below the corresponding SILs, then compliance is demonstrated and no additional analysis is necessary. (NTE 1, pp. 92-93; Tr. pp. 344-346).

196. The proposed project's emissions impacts are predicted to be below the SILs for all pollutants except for NO_2 and $PM_{2.5}$. The predicted impacts exceed the 1-hour NO_2 and 24-hour $PM_{2.5}$ SILs. (NTE 1, pp. 98-99).

197. For the pollutants with model-predicted concentrations above the SILs, cumulative modeling was conducted with other existing regional sources, as identified using the DEEP source selection criteria and Radius Search Tool. Consultation with the Massachusetts Department of Environmental Protection and Rhode Island Department of Environmental Management also occurred to identify any sources in those states which met DEEP's screening criteria. With the results of the cumulative modeling added to representative existing background concentrations, based on DEEP's ambient air quality monitoring network, KEC confirmed that the resulting total concentrations for NO_2 and $PM_{2.5}$ are below their corresponding NAAQS concentrations. (NTE 1, pp. 99-101; Tr. pp. 346-347).

198. A PSD increment consumption analysis was conducted for 24-hour $PM_{2.5}$, the only pollutant/averaging time for which a PSD increment has been set and for which the project impact will exceed the SIL. The cumulative impacts of the project and the proposed Invenergy Clean River Energy Center (the only other PSD increment-consuming source in the area) are less than the available increment, therefore, the project will meet all applicable air quality standards. (NTE 1, p. 101).

Safety Considerations

199. As part of normal operating procedures to be developed for KEC, an emergency management plan will be developed and coordinated with the Town of Killingly. The final procedures will be filed with the Town of Killingly's fire department and safety authorities. (NTE 1, p. 55).

200. KEC will incorporate a variety of alarms and control systems to provide early identification of emergency situations that may require plant and/or system shutdown. Radio/mobile phone communications will be provided to link all personnel. Employees will be trained for these emergency conditions and how to respond to unsafe operating conditions. (NTE 1, pp. 55-56).

201. Construction, operation, and maintenance of KEC will require a number of chemicals and lubricants. The chemicals will be stored in contained areas, appropriately designed for storage with secondary containment that will meet all applicable safety codes. (NTE 1, p. 56).

202. Once operational, the most significant chemical storage requirements, other than for ULSD, will be for the treatment of steam and feedwater systems, and the operation of the SCR system. Operation will require limited amounts of lubricating oils and certain other industrial chemicals, which will be stored in covered areas. Operating personnel will be trained on the proper use, handling, protective equipment, storage, and disposal of all chemicals to be stored on the Generating Facility Site. (NTE 1, p. 60).

203. On-site tanks will be equipped with a level gauge, and monitored locally or in the control room. KEC has incorporated technology and developed responses for any significant change in tank level. In the event of a tank failure, rupture, or other release, KEC will implement its Spill Prevention Control and Countermeasure (SPCC) Plan for its oil storage tanks and an Emergency Response Plan, which will address all oil and chemical storage and include notification of the appropriate regulatory agencies. (NTE 1, p. 60).

204. Operation of KEC will be managed and supervised by a team of experienced operating personnel, including a facility manager, an operations manager, reporting shift supervisors, control room operators, roving operators, and a maintenance manager, with reporting maintenance supervisors and technicians. KEC will be staffed by approximately 25 to 30 employees, working in shifts around the clock. No staff will be stationed on the Switchyard Site. (NTE 1, p. 63).

Solid and Hazardous Waste

205. KEC isanticipated to be a conditionally exempt small quantity generator under the federal Resource Conservation and Recovery Act ("RCRA") because it will generate less than 100 kilograms (220 pounds) per month of materials classified as hazardous. (NTE 1, p. 60).

206. KEC will generate solid waste during construction, including packing materials, office waste, scrap lumber, metals, cables, glass, cardboard containers, and debris from lunches and catering/vending

machines. Solid waste that can be neither recycled nor reused will be stored in on-site containers for disposal. (NTE 1, p. 62).

207. During KEC's operations, generated solid waste is anticipated to consist of office waste, including paper and miscellaneous trash, as well as plant operations wastes such as spent chemical and lube oil containers, water treatment waste, used spare parts, packaging, etc. Any solid waste generated will be removed by a licensed hauler. SCR catalysts will be removed and returned to a catalyst vendor for regeneration, salvage, or disposal. (NTE 1, p. 62).

Electric and Magnetic Fields

208. The new interconnection transmission line crossing Lake Road will locally increase the magnetic field level. The anticipated levels are similar to those encountered beneath typical distribution lines, and decrease with distance from the Eversource ROW. Under all loading scenarios and across all modeled cross sections, KEC magnetic-field levels are a small fraction of International Commission on Non-Ionizing Radiation Protection ("ICNIRP") and International Committee on Electromagnetic Safety ("ICES") exposure limits. (NTE 1, p. 135).

209. The new KEC interconnection is sited such that there are no adjacent statutory facilities (e.g., residential areas, schools, day cares, playgrounds) where children might congregate located in the vicinity of KEC. (NTE 1, p. 136).

Electrical Interconnection

210. The total of approximately 550 MW of generation will be integrated into the ISO-NE electric grid via an electrical interconnection with the existing 345-kV transmission system. (NTE 1, p. 36).

211. The on-site generator step-up transformers, located adjacent to each respective generating unit, will convert (step up) the generated electricity's voltage from the CTG's approximately 20 kV and the STG's approximately 18 kV, to 345 kV in order to provide electricity at the same voltage as the existing electric transmission circuit. (NTE 1, p. 36).

212. An overhead 345-kV transmission line will extend from the Generating Facility Site's electrical equipment across Lake Road to the Switchyard Site. The Utility Switchyard, to be constructed on the Switchyard Site, will allow for direct interconnection of the electrical lines from KEC into the existing Eversource 345-kV transmission system. (NTE 1, p. 36).

213. The Utility Switchyard will include circuit breakers, disconnect switches, surge arrestors, relays, controls and communications equipment required to integrate KEC's electric generation into the ISO-NE electric grid, while maintaining reliability and stability. (NTE 1, p. 36).

214. NTE evaluated the feasibility of constructing one electrical switchyard as opposed to the preferred proposal of two switchyards—one on the Generating Facility Site and one on the Switchyard Site. KEC chose the two switchyard option for several reasons. First, because KEC will have its own circuit breakers, this provides added protection to the KEC equipment, while the breakers at the Eversource switchyard will provide backup protection to the KEC equipment and provide Eversource with primary protection to the transmission system. The two switchyard configuration also provides improved personnel safety, greater operating flexibility and reliability for both KEC and Eversource, and considerable open space on the Generating Facility Site, important for both construction and maintenance of the facility. (NTE 25, pp. 3-6).

215. NTE also evaluated the feasibility of constructing a gas-insulated switchyard and an underground connection to the Eversource transmission lines located east of the Generating Facility Site. These options were not preferred because the combination would not preserve the transmission line capacity due to inherent thermal limitations associated with underground conductor, cause a large gap in the visual screen on the eastern boundary of the Generating Facility Site, increase blasting and civil works, add 300,000 pounds per year of greenhouse gas emissions due to gas leakage from the gas-insulated switchyard equipment, and significantly increase the overall cost of the project. (NTE 25, pp. 6-12).

Natural Gas Interconnection

216. KEC will be served by an upgraded natural gas pipeline lateral to be constructed and owned by Yankee Gas. Yankee Gas currently owns and operates a distribution level natural gas pipeline that extends from the AGT mainline, approximately 2 miles northwest of the Property in the Town of Pomfret, to Lake Road in the Town of Killingly, at which point the pipeline turns eastward along Lake Road, continuing past the Property approaching the Killingly Industrial Park. (NTE 1, p. 166).

217. To meet KEC's natural gas requirements (3.9 MMcf per hour), the pipeline lateral will be upgraded to an expected diameter of 14 inches with a pressure of 700 psi. (NTE 1, p. 166; Tr. p. 202).