

DOCKET NO. 470 – NTE Connecticut, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 550-megawatt dual-fuel combined cycle electric generating facility and associated electrical interconnection switchyard located at 180 and 189 Lake Road, Killingly, Connecticut. } Connecticut
} Siting
} Council

May 11, 2017

Opinion

Introduction

On August 17, 2016, NTE Connecticut, LLC (NTE or Applicant), 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 new 550-megawatt (MW) dual fuel combined cycle electric generating facility and associated electrical interconnection switchyard located at 180 and 189 Lake Road, Killingly, Connecticut.

Under the Public Utility Environmental Standards Act, the Council's charge is to balance the need for adequate and reliable public utility services at the lowest reasonable cost to consumers with the need to protect the environment and ecology of the state. Pursuant to Section 16-50p of the Connecticut General Statutes (C.G.S), for an application for an electric generating facility under C.G.S. §16-50i(a)(3), the Council shall not grant a Certificate, either as proposed or as modified by the Council, unless it shall find and determine:

- (a) A public benefit for the facility and considers neighborhood concerns with respect to the nature of the probable environmental impacts of the facility, including public safety;
- (b) the nature of the probable environmental impact of the facility alone and cumulatively with other existing facilities, including a specification of adverse effects relative to electric and magnetic fields, impact on and conflict with the policies of the state concerning the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, forests and parks, air and water purity and fish, aquaculture and wildlife; and
- (c) why the adverse effects are not sufficient reason to deny the application.

Under C.G.S. §16-50p(c)(3), a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity. In deciding this application, the Council must balance the public benefit for the proposed 550 MW dual-fuel combined cycle electric generating facility and associated electrical interconnection switchyard at the lowest reasonable cost to consumers with the potential environmental impacts created by construction and operation of these facilities.

The deadline for a decision on this application is June 1, 2017. In addition to the applicant, six parties and intervenors, including the Town of Killingly, participated in this proceeding. Of the six parties, three are also Connecticut Environmental Policy Act (CEPA) intervenors. The public hearings held on this application consisted of six evidentiary sessions and a public comment session.

Project Description

The purpose of the proposed project, referred to as the Killingly Energy Center (KEC), is to construct, operate and maintain a 550 MW dual-fuel, combined cycle independent power production facility and associated equipment in the wholesale electric power market operated by ISO-New England, Inc. (ISO-NE). The facility would require electrical, natural gas, wastewater and water supply interconnections. KEC is expected to have a service life of at least 30 years and would operate as a baseload facility. During normal

operation, power production from KEC would vary from approximately 40 percent load to 100 percent load depending on the ISO-NE system dispatch and ambient conditions. The KEC is comprised of two components: the Generating Facility Site and the Utility Switchyard Site. Both sites are located in the Rural Development District Zone in an area of Killingly that includes a mix of industrial and residential development. The Lake Road Generating Facility (LRGF), an approximately 800 MW combined-cycle electric generating facility certificated by the Council in 1998, is located approximately 1 mile northeast of the proposed KEC.

Generating Facility Site

The KEC Generating Facility Site would be located on an approximately 63-acre parcel located north and west of Lake Road with an address of 189 Lake Road. It is identified in the Town of Killingly's *2010-2020 Plan of Conservation and Development* as an area intended for future industrial use. The Generating Facility Site consists of one residence and associated structures located in the southwest corner and the remainder of the property consists of undeveloped woodland, a man-made pond, wetlands and bedrock outcroppings. The site was formerly agricultural land that is now covered with a mixture of hardwood and coniferous forest. Approximately 24 acres of land would be disturbed for facility construction leaving approximately 39 acres of land undisturbed.

The Generating Facility site would include two buildings: the turbine building and the administrative/warehouse/water treatment building. Other facility components include, but are not limited to, the plant switchyard, transmission line segment, water tanks, water demineralization trailers, fuel-oil storage tank, the heat recovery steam generator (HRSG), air cooled condenser (ACC), auxiliary boiler and backup generator.

Utility Switchyard Site

The KEC Utility Switchyard Site would be located on an approximately 10-acre parcel located immediately across the street from the Generating Facility Site that is south and east of Lake Road with an address of 180 Lake Road. It consists predominantly of woodland with an open field, outbuildings, stone walls, a remnant foundation and a small family cemetery. Approximately 4 acres of land would be disturbed for switchyard construction leaving approximately 6 acres of land undisturbed.

The Utility Switchyard Site would be owned and operated by Eversource. The utility switchyard would be designed to be air-insulated. An existing Eversource electric transmission line right-of-way abuts the Utility Switchyard Site to the east. Two 115-kilovolt (kV) lines are on the eastern portion of the right-of-way and two 345-kV lines are on the western portion of the right-of-way. A short electric transmission line segment originating from a structure in the plant switchyard on the Generating Facility Site would cross Lake Road and terminate at a structure within the Utility Switchyard Site.

Backup Fuel

Backup fuel would be required in order to meet KEC's obligations to ISO-NE, as delivery obligations are not excused even in the event of curtailment of firm natural gas supply. While KEC would be predominantly a natural gas-fired facility, the proposed KEC facility would also be able to burn Ultra Low Sulfur Diesel (ULSD) as an alternative fuel during the winter for reliability. It is expected that KEC would be limited to a maximum of 720 hours per year of ULSD operation under its Air Permit. However, given NTE's "firm gas" arrangement, NTE projects that ULSD would be needed, on average, for very few hours per year based on historical force majeure or curtailments on the Algonquin natural gas transmission pipeline located to the north of the KEC.

Project Alternatives

NTE evaluated potential development sites throughout New England, but selected Connecticut because it was identified by NTE as having a need to supplement and replace existing aging power generating assets. Also, locations in Connecticut are closer to load centers and south of transmission and natural gas constraint points in the New England region where much of the existing generation is north of these constraints.

NTE reviewed three alternative sites in Killingly. Alternative Site 1 is located at 295 Lake Road. While there was a potential for an option agreement from the property owner, this site is constrained due to the parcel configuration and location of existing infrastructure corridors. Thus, it is unlikely to support a generating facility layout. Alternative Site 2 is located at 251 Lake Road. However, the owner was not interested in an option agreement with NTE. Thus, the third site, consisting of the Generating Facility Site and the Utility Switchyard Site, was selected for the Project.

NTE considered other technology alternatives in lieu of the proposed Project. Specifically, NTE considered solar and wind-powered electric generating technologies. However, solar and wind are intermittent resources, as opposed to flexible, baseload technologies. Furthermore, solar and wind generating technologies would only generate about 12 MW and 3 MW of capacity, respectively, at the KEC site based on the parcel size.

NTE considered energy storage, but determined that energy storage systems do not yet allow for reliable power generation across the potential demand spectrum.

NTE also considered simple cycle combustion technology, but found it to be less efficient (i.e. a higher heat rate) and better suited for peak electricity generation than baseload.

The Council notes that the KEC Site is proximate to natural gas and electric transmission, but a fuel cell alternative, which could also be baseload, was not explored in this proceeding.

Municipal Consultation

Since January 2016, the record reflects that NTE met with municipal officials in the towns of Killingly, Pomfret and Putnam, state legislators and members of the surrounding community. NTE gave a presentation about the project to the Killingly Town Council on March 8, 2016. On March 22, 2016, NTE held an open house meeting in Killingly. Notice of the open house meeting was mailed to approximately 350 addresses in proximity to the proposed project site. NTE formally commenced the 60-day municipal consultation process on May 4, 2016 by submitting a technical report to the towns of Killingly, Pomfret and Putnam that included a description of the proposed electric generating facility, the need for the facility, the site selection process and the nature of potential environmental effects in accordance with C.G.S. §16-50f. Another open house meeting was held in Killingly on May 4, 2016. Notice of the open house meeting was published in the Norwich Bulletin. Project maps, plans, studies and reports are published on the KEC website and hard copies are available for review at the Killingly Town Hall and Killingly Public Library. On August 14, 2016, the Pomfret Conservation Commission submitted correspondence to the Council expressing concerns about wetland filling, tree clearing, water consumption in the context of the Quinebaug River and impacts from air emissions. On December 15, 2016, the Killingly Town Council submitted correspondence to the Council expressing concerns about potable water consumption.

Environmental Justice

Pursuant to C.G.S. §22a-20a, applicants seeking a permit from DEEP or the Council for a new or expanded facility, defined as an “affecting facility,” that is proposed to be located in an “environmental justice community” must file an Environmental Justice Public Participation Plan (EJPPP). KEC is an “affecting

facility” as it is a new electric generating facility with a capacity of more than 10 MW and the Town of Killingly is an “environmental justice community” as it meets the definition of a distressed municipality under C.G.S. §32-9p. On March 31, 2016, NTE submitted an EJPPP to DEEP that was approved by DEEP on April 19, 2016. Public informational meetings were held on May 4, 2016, July 11, 2016 and October 19, 2016. In accordance with C.G.S. §22a-20a, any municipality, owner or developer may enter into a Community Environmental Benefits Agreement (CEBA) in connection with the “affecting facility.” Since approximately October 11, 2016, NTE and the Town of Killingly have been discussing a CEBA. On December 8, 2016, NTE submitted the Environmental Justice Final Report to DEEP and the Council.

Municipal Regulate and Restrict Orders

Pursuant to C.G.S. §16-50x, any town, city or zoning commission and inland wetland agency may make orders to regulate and restrict the proposed location of an electric generating facility. Each regulate and restrict order is subject to the applicant’s right of appeal within thirty days. On October 13, 2016, the Town of Killingly Planning and Zoning Commission and Inland Wetlands and Watercourses Commission issued regulate and restrict orders. On October 27, 2016, NTE filed an Appeal and Response to the Town’s Regulate and Restrict (ARRR) Orders. The response included the submission of a modified site plan, revised Stormwater Pollution Protection Plan, an updated Acoustic Modeling Analysis, an updated Erosion and Sedimentation Control Plan and updated Wetland Report. During the evidentiary hearing held on November 3, 2016, the Council voted to incorporate NTE’s ARRR Orders into the proceedings held on the application consistent with Council practice in past matters.

Public Benefit

Reliability and Forward Capacity Market Auction

In terms of the reliability of the electric power supply of the state, the Council notes that Connecticut and the rest of the ISO-NE region are inextricably interconnected and rely on each other for a reliable electricity system. Specifically, the physical power from the KEC facility would be delivered to ISO-NE and would follow the normal flow of power to where it is needed within the ISO-NE region. In short, KEC’s power output would not necessarily remain within the boundaries of the State of Connecticut, and the electric reliability of the New England region must be considered to ensure electric reliability in Connecticut.

Moving on to a regional basis, the reliability of the electric power supply is composed of two components: transmission security and resource adequacy. In terms of transmission security, while KEC would have a transmission interconnection, KEC itself is not an electric transmission facility within the meaning of C.G.S. §16-50i(a)(1). KEC is an electric generating facility under C.G.S. §16-50i(a)(3). While KEC could provide internal generation for Connecticut to reduce the potential impact of a loss of an electric transmission line that imports power to Connecticut, the Council does not find that NTE has demonstrated that KEC is strictly necessary for transmission reliability.

In terms of regional resource adequacy, resources are identified in terms of their capacity in MW. ISO-NE considers the following resources to be capacity resources, including but not limited to, nuclear-powered generation, fossil-fueled generation, renewable generation, and demand-side resources, such as load management and energy efficiency measures.

ISO-NE computes and annually updates an installed capacity requirement (ICR) for the New England Region. There is no separate ICR for Connecticut. ICR is a measure of the installed capacity resources that are projected to be necessary to meet both ISO-NE’s and the Northeast Power Coordinating Council’s (NPCC) reliability standards with respect to satisfying the peak load forecast for the New England Balancing Authority while maintaining required reserve capacity. After the capacity credits for imports from New

England's Hydro Quebec interconnection are deducted from ICR, the remaining value is referred to as Net Installed Capacity Requirement (NICR). Effectively, this makes NICR a measure of installed capacity resources needed for New England electric reliability.

ISO-NE holds an annual auction to acquire the power system resources needed to meet future demand for the New England region. The annual Forward Capacity Market Auction (FCA) is held approximately three years in advance of each Capacity Commitment Period (CCP) to provide time for new resources to be developed. A CCP is for a period of one year. Capacity resources that clear the auction will receive a monthly payment during the CCP in exchange for their commitment to provide power or curtail demand when called on by ISO-NE. Capacity resources that clear the auction receive a Capacity Supply Obligation (CSO). A CSO requires the capacity resource to bid into the day-ahead electrical energy market during the 12-month CCP, which begins roughly three years after the auction is held. For example, for the eleventh FCA (FCA #11), resources that cleared in February 2017 are committed to the June 1, 2020 through May 31, 2021 CCP.

While NICR is a reliability "target" for New England, the FCA rules allow the New England region to acquire more or less capacity (in MW) than NICR. Thus, if the amount of MW of capacity resources that clears in a given FCA auction is less than or equal to NICR, then it is self-evident that all of those capacity resources are necessary for resource adequacy and thus electric reliability.

However, it is possible to have more resources clear in a given FCA than NICR. Specifically, in FCA #11, NICR was 34,075 MW, and 35,835 MW cleared the auction, leaving a "surplus" of 1,760 MW. However, ISO-NE, in its filing of the auction results with the Federal Energy Regulatory Commission (FERC), does not specifically indicate which of the resources that cleared the auction specifically add up to NICR and which resources are considered the "surplus" resources, over and above NICR. Thus, the Council cannot "break apart" auction results and arbitrarily designate certain cleared capacity resources as "NICR" resources and others as "surplus" resources. The Council must view all of the cleared resources as a "package" required for New England resource adequacy necessary for the electric reliability of the New England region and necessary for the electric reliability of the State of Connecticut.

FCA #11 had six rounds of competitive bidding. NTE withdrew from FCA #11 before it was concluded and did not receive a CSO. Hence, KEC did not clear the auction. Thus, in the final FCA #11 results filed with FERC, ISO-NE acquired resources in excess of NICR and without KEC. Therefore, ISO-NE has effectively determined that KEC is not required for resource adequacy, at least through the CCP of 2020-2021.

Resource Adequacy Reports

According to the Council's biennial 2014/2015 Forecast of Connecticut Electric Loads and Resources Report dated December 10, 2015, "This Council has considered Connecticut's electric energy future and finds that even taking into account the most conservative prediction, the ISO-NE 90/10 forecast, and conservatively neglecting the effects of non-ISO-NE-dispatched DG, the electric generation supply during 2015-2024 will be adequate to meet demand." This analysis is based on the electric generation in Connecticut (and import into Connecticut) versus the ISO-NE 90/10 forecast for Connecticut itself, not the New England region as a whole.

Another report based on Connecticut, the 2014 DEEP Integrated Resources Plan, states that, "New resources cleared in FCA #9, including a 725 MW combined-cycle plant located in Connecticut, will help the reliability needs for 2018. The 2014 IRP projects that resources within Connecticut are expected to be sufficient to meet Connecticut's Local Sourcing Requirement through 2024, although Connecticut generation prices will be affected by regional supply/demand conditions. If the resources cleared in FCA #9 do not

Docket No. 470
Opinion
Page 6

come online by the 2018 timeframe, the region will experience a capacity shortfall, which will increase prices for all ratepayers in the region, including Connecticut.”

In terms of regional resource adequacy, the Council refers to the 2015 ISO-NE Regional System Plan (2015 RSP). This is the most up to date version of this biennial report at this time because another version is not expected until approximately October 2017. In the 2015 RSP, ISO-NE noted that, “Assuming all FCA #9 existing and new resources remain in service in 2018 and beyond, the region would have sufficient resources through 2023, according to RSP15 resource adequacy study results.” The generation resources “new” to FCA #9 include, but are not limited to, the Towantic Power Plant at approximately 725 MW, Wallingford Energy at approximately 90 MW and a dual-fuel peaking power plant approximately 195 MW in the Southeast Massachusetts/Rhode Island (SEMA/RI) capacity zone. These three new resources also cleared FCA #11, so they are expected to continue to generate electricity through at least 2021. In addition, FCA #9 in 2015 cleared a total of 34,695 MW. FCA #10 in 2016 cleared a total of 35,567 MW. Finally, FCA #11 in 2017 cleared a total of 35,835 MW. Thus, the Council finds that there has been no net loss of capacity resources since the 2015 RSP and FCA #9. In fact, there has been a net gain of cleared resources from FCA #9 to FCA #11 of 1,140 MW.

There has been extensive discussion by the Applicant about power plant retirements in this proceeding. Specifically, in the 2016 Regional Electricity Outlook (2016 REO), ISO-NE identifies approximately 4,037 MW of generating resources as “closed” and “retiring.” Of the 4,037 MW, 1,842 MW has already retired. The remaining 2,195 MW will be retired by May 2019. Thus, these retirements do not change FCA #11’s cleared capacity total because all of these resources are expected to be retired prior to the 2020-2021 CCP for FCA #11.

ISO-NE also identifies approximately 5,573 MW (or sometimes referred to in this proceeding as 6,000 MW as a round number) as “at risk” for retirement. In the 2016 REO, ISO-NE showed that these “at risk” facilities could be retired by 2020. However, in the 2017 ISO-NE Regional Electricity Outlook (2017 REO), ISO-NE made a less specific prediction that these resources are “at risk for retirement in coming years” and referred to these resources in a table as “hypothetical” retirements in the 2025 through 2030 timeframe. Consistent with the 2017 prediction, virtually all of the 5,573 MW (except for about 100 MW) cleared FCA #11. Thus, such resources are committed to operating through at least May 31, 2021. For all these above reasons, the Council does not find a public benefit for KEC at this time.

Neighborhood Concerns

The Council held a public comment session on October 20, 2016 at the Killingly High School that commenced at 6:30 p.m. and concluded at 9:41 p.m. During the public comment session, approximately 75 interested persons provided oral limited appearance statements. State Representative Danny Rovero expressed concerns about another power plant being constructed in Killingly and the location of the proposed KEC in proximity to a lake, wetlands, the Quinebaug River and several schools. State Senator Mae Flexer also expressed concerns about another power plant being constructed in Killingly and about the dedication of large quantities of local water to the proposed facility. Further, if the Council approves KEC, Senator Flexer urges the Council to do so only if there is a guarantee of a Project Labor Agreement.

While the public comment record was open, approximately 78 interested persons provided written limited appearance statements. Of the oral and written limited appearance statements in favor of the proposed facility, comments include, but are not limited to, creation of local jobs; cleaner source of energy; tax revenue; reliable energy generation; economic growth for the area; lower energy costs; and proximity to existing electric transmission and natural gas infrastructure. Of the oral and written limited appearance statements in opposition to the proposed facility, concerns include, but are not limited to, air emissions; lack of need for

the energy; impacts to wetlands and watercourses; noise; increased traffic; diminished water supply; impacts to wildlife; visibility; threat of spills and explosions; property values; and construction impacts.

Public Safety

KEC would be designed, constructed and operated in accordance with federal, state, and local regulations and responsible engineering practices, including the Occupational Safety and Health Administration standards. The latest edition of design standards and regulations would be used to develop KEC's programs. Plans and provisions for cyber security protection would be implemented, consistent with the North American Electric Reliability Corporation (NERC), and plans and provisions for physical site security would be implemented, consistent with the Council's Whitepaper on the Security of Siting Energy Facilities.

KEC would incorporate a variety of alarms and controls systems to provide early identification of emergency situations that may require plant and/or system shutdown. KEC would have an on-site fire protection system consisting of hydrants, hose stations, sprinkler systems, deluge systems, CO₂ system, and portable fire extinguishers. Fire suppression water would be supplied from KEC's 500,000-gallon raw/fire suppression water storage tank.

A 12,000-gallon tank would store 19 percent aqueous ammonia for emissions control and would be located within a concrete containment area with the capacity to store 110 percent of the aqueous ammonia. The generators would be water-to-air cooled units. Thus, there is no need for on-site hydrogen for the purposes of generator cooling.

NTE originally proposed a lined containment area for the 1,000,000-gallon ULSD storage tank. Under its ARRR Orders configuration, NTE proposes steel containment around the ULSD tank. Therefore, under either configuration, the Project would include measures to contain the ULSD in event of a leakage.

NTE would comply with the conditions of the Electric Generator Decision and Order dated March 17, 2011 in Council Docket No. NT-2010. This includes the requirement that flammable natural gas not be used to clear KEC's natural gas lines. NTE would develop an emergency response/safety plan in consultation with State and local public safety officials.

An electric and magnetic field (EMF) analysis was performed that includes KEC's new 345-kV electrical interconnection and the existing electric transmission line right-of-way west of the Utility Switchyard. All projected magnetic field levels identified in the EMF Report would remain far below the International Commission on Non-Ionizing Radiation Protection acceptable exposure level of 2,000 milligauss (mG) for the general public as recognized in the Council's "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut."

Environmental

Water Supply

KEC is proposed to utilize an ACC rather than wet-cooling to minimize water use from evaporative cooling. Notwithstanding, there would be evaporative cooling in use to chill the inlet air to the combustion turbine to improve power output and efficiency at temperatures over 59 degrees F. Water is also needed for steam-cycle makeup water, water injection during ULSD firing to control nitrogen oxide emissions, and potable water for internal use at the plant.

KEC water supply would be provided by the Connecticut Water Company (CWC), Crystal Water Division, a subsidiary of Connecticut Water Service, Inc. CWC currently serves the Town and would require no increase

in permitted capacity of existing wells to meet KEC's water needs. The Eastern Regional Distribution Improvements (ERDI) would be required for water supply to KEC. This would include a new 12-inch water line approximately 12,000 feet long and running in roughly a north-south direction from the Crystal System in Killingly to the Crystal-Plainfield System in Killingly. NTE would also comply with Connecticut Department of Public Health requirements. KEC's worst-case potable water consumption from CWC would be about 400,000 gpd (as a round number) when operating under full load conditions with ULSD. The worst-case water consumption under full load natural gas operation would be considerably less at about 70,000 gpd. A safe yield analysis was performed, and it was determined that CWC would have adequate water supply to serve KEC once the two water systems are connected, i.e. ERDI are completed. CWC also considered drought conditions in its analysis.

Air Quality

As required by the Clean Air Act, the EPA sets the National Ambient Air Quality Standards (NAAQS) through a rigorous scientific process at levels determined to be protective of the health of the most sensitive individuals such as children, the elderly, chronic asthmatics, and people with other pulmonary diseases. Furthermore, an added margin of safety is included in calculating the standards.

Maximum predicted emissions impacts from the worst-case scenarios are compared to the Significant Impact Levels (SIL). SILs are used to determine the scope of the required air quality analysis that must be carried out in order to demonstrate that the source's emissions will not cause or contribute to a violation of any NAAQS or increment 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. The proposed project's emissions impacts are predicted to be below the SIL for all pollutants except for 1-hour NO₂ and 24-hour PM_{2.5}. However, NTE has performed cumulative modeling with other existing regional sources, as identified by DEEP. With such modeling, NTE confirmed that the resulting total concentrations for NO₂ and PM_{2.5} are below their corresponding NAAQS concentration standards.

NTE would commit to reducing its greenhouse gas (GHG) emissions 80 percent from the time KEC is operational to 2050 in order to reduce its GHG emissions consistent with Connecticut's Global Warming Solutions Act. In order to accomplish this, NTE would commit to operating KEC less frequently in the later years. In other words, after 30 years of operation, KEC's GHG emissions would be 20 percent of the GHG emission in the first year of operation. NTE is also looking at some potential offset mechanisms that could allow KEC to operate more frequently such as, for example, acquiring additional Regional Greenhouse Gas Initiative (RGGI) offsets, or perhaps a renewable energy credit type of offset. While the final details are being worked out, NTE's commitment to an 80 percent reduction in GHG emissions from approximately 2020 to 2050 still stands.

Visibility

The tallest feature of the proposed KEC plant would be the HRSG stack reaching 150 feet above (final) grade or about 465 feet above mean sea level (amsl). NTE selected a HRSG stack height of 150 feet because it believes it would best balance minimizing air quality impacts while minimizing visibility. Specifically, throughout the five-mile (radius) visual study area of about 50,265 acres, approximately two percent of this area or just over 1,000 acres would have views of the HRSG stack, taking into account the effects of terrain and vegetation. The Council notes that the visibility area of roughly 1,000 acres would not materially change between leaf-off and leaf-on conditions.

The selected HRSG stack height of 150 feet would be shorter than the three approximately 165-foot stacks at LRGF and would not be expected to be an intrusive visual element in the area. The Council notes that LRGF has a comparable ground elevation to KEC, so it is appropriate to compare the LRGF stack height versus the KEC stack height on a “height above grade” basis.

The Project would not be expected to materially impact The Last Green Valley National Heritage Area (LGVNH), which extends over an approximately 706,000-acre area generally located along the Quinebaug River Valley. The Airline North State Park Trail (NSPT) runs generally in an east-west direction, and it is located approximately 1.8 miles northwest of KEC at its closet point. In most locations on the NSPT, dense existing vegetation would be expected to screen the distant views of KEC. An approximately 32-mile portion of Route 169, from Rocky Hollow Road in Lisbon to the Massachusetts border in Woodstock, has been designated as a National Scenic Byway. A portion of Route 169 is located approximately two miles west of KEC. However, intervening topography and tall, dense vegetation would significantly screen views of KEC from this roadway.

State-designated Scenic Roads within a five-mile radius of KEC include portions of Route 244 (at a distance of 3.1 miles from KEC) and Route 97 (at distance of 4.5 miles from KEC). These State Scenic Roads are located at an even greater distance from KEC than Route 169 and views of KEC would be similarly screened by vegetation.

Other features at the Generating Facility Site include the HRSG, which extends from its stack and the turbine building, with the ACC located east of the HSRG stack and north of the turbine building. The ACC structure consists of a large bank of fans on a steel support structure. Although no building enclosure is associated with the ACC, the fan bank itself represents a solid visual element at the top of the ACC.

Ancillary buildings, equipment and storage tanks would have an industrial appearance, but would be considerably smaller than the main structures. None of these elements would be expected to affect KEC’s potential for visual impact on the surrounding area.

KEC would be designed to maintain as much of the existing vegetation as possible. 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 would be required around KEC and for the temporary work spaces, an approximately 50-foot wooded buffer along Lake Road would be maintained as originally proposed.

Noise

KEC would be considered an industrial Class C noise emitter, and its surrounding areas are treated as Class A residential receptors. State of Connecticut Noise Standards for a Class C source emitting to a Class A receiver are 61 dBA daytime and 51 dBA nighttime. KEC is not located within a high-background noise area because the L_{90} ambient measurements are below 51 dBA. Thus, the 51 dBA nighttime standard applies as the most stringent standard to be met. KEC would comply with this standard either as proposed or as revised in accordance with the ARRR. Specifically, in either case, KEC’s 51 dBA sound contour “curve” does not go outside of the boundaries of the Generating Facility Property. Thus, KEC would comply with the DEEP noise standard at all abutting properties.

Wetlands

There are seven wetlands on the Generating Facility Property, known as Wetland A1, Wetland A2, Wetland A3, Wetland B, Wetland C, Wetland E, and Wetland X. There is one wetland located on the Utility Switchyard Property, known as Wetland D. No direct wetland impacts are expected on the Generating

Facility Property. However, approximately 12,500 square feet of direct wetland impacts of Wetland D on the Utility Switchyard Property are expected in order to accommodate the utility switchyard. Alternative layouts for the utility switchyard were considered during the planning phase in an effort to avoid direct wetland impacts, but the site constraints and Eversource's required specifications for the utility switchyard did not allow complete avoidance.

A suitable site for wetland creation is the northeastern section of the Switchyard Site, which is currently an open field. The designed final vegetation classes for the wetland creation are wet meadow and emergent marsh with a native scrub-shrub transition zone. This would not only replace the vegetative cover types at the impact area, but would also complement the wetland habitats immediately off-site to the east within the Eversource electric transmission right-of-way. Within a conservation easement of about 0.77 acre, the proposed created wetland area would be approximately 17,000 square feet in size or about 0.39 acres. No significant or adverse impacts to wetlands and watercourses, either on-site or off-site, would be expected to result from the proposed Project. The proposed mitigation package, consisting of wetland habitat replication, enhancement and preservation would be expected to more than offset the associated direct wetland impacts.

Wildlife

The proposed HRSG stack design avoids certain features that may be of concern with regard to bird mortality from bird strikes, based on studies, including those prepared for the U.S. Fish & Wildlife Service. Specifically, the proposed HRSG stack design avoids lighting, guy wires or height over 300 feet.

The broad-winged hawk, a State-designated Species of Special Concern, was observed at the Utility Switchyard Site. However, it would be unlikely that the broad-winged hawk would be impacted because much unfragmented, high quality forest would remain at or near the Utility Switchyard Site.

During the acoustical survey, five bat species were identified: the eastern red bat; the big brown bat; the hoary bat, a State-designated Species of Special Concern; the silver-haired bat, a State-designated Species of Special Concern; and the little brown bat, a State-designated Endangered Species.

As a precautionary measure, tree clearing for the Project would be restricted in accordance with U.S. Fish and Wildlife Service Rule 4(d) requirements and would not occur in the months of June or July, in order to avoid the pup season for the bat species. Significant wooded areas would remain on the site and in its vicinity, with expansion of edge effect habitat providing for additional foraging lanes for bats. The area would continue to provide habitat suitable for bat use during the summer activity period.

It is likely the eastern box turtle, a State-designated Species of Special Concern, occurs at the site, given the availability of habitats and the landscape context. It is not likely the wood turtle, also a State-designated Species of Special Concern, would occur at the site, given the availability of habitats and local topography. NTE has provided a Turtle Protection Plan (TPP) which includes, but is not limited to, silt fencing to isolate the work area during the hibernation period between November 1 and April 1 and work crew education about these two turtle species.

A survey of moth and butterfly species was performed in mid-2016. The purpose of the survey was to determine the presence of the following State-listed invertebrates identified by DEEP: the Fragile Dagger Moth, a State-designated Species of Special Concern; the Pink Star Moth, a State-designated Species of Special Concern; and the Frosted Elfin, a State-designated Threatened Species. None of the three State-designated invertebrate species were found at the KEC Site during the survey. While this does not preclude their presence, their absence during the survey and the differing habitats at the reported nearby collection sites make this possibility less likely.

Subsequently, NTE received additional information from DEEP regarding the Natural Diversity Database including some additional questions relative to some of the Lepidoptera, e.g. the butterfly and moth species. NTE has ongoing design development information that would be provided to DEEP that would incorporate the wetland replication area and include an upland component that would serve as a “butterfly garden” intended to attract and support the Lepidoptera species that are of interest to DEEP. NTE would include legumes and species that would support pollinators for the wetland replication area and butterfly garden area. NTE is also willing to consider such plantings along the embankment around KEC at the Generating Facility Site.

Historic

A Phase I Cultural Resources Reconnaissance Survey Report (CRRS Report) was prepared for the KEC project and considered both the 180 Lake Road and 189 Lake Road parcels. The assessment concluded that no further archaeological investigations are recommended. The Connecticut State Historic Preservation Office (SHPO) reviewed the CRRS Report and determined that there would be no effect on the historic properties, and no additional archaeological investigations are warranted.

In addition to the SHPO, NTE consulted with the two tribal historic preservation offices in the area. Specifically, the Mashantucket Pequot Tribal Nation (MPTN) indicated that it concurs with the CRRS Report that no archaeological sites were identified in particular areas. While the MPTN had additional comments, NTE believes that, based on the response from the SHPO, no further activities are required to address MPTN comments. No correspondence from the Mohegan Tribal Historic Preservation Office (MTHPO) had been received during this proceeding. However, MTHPO is planning to visit the site and has been reviewing NTE’s report.

The layout of the Utility Switchyard would be designed to avoid adversely impacting the private Sorrow Cemetery as identified in NTE’s Option Agreement submitted on August 25, 2016. Specifically, SHPO recommends a 50-foot buffer be incorporated into the design. A 50-foot minimum buffer can be accommodated by NTE for most, but not all, areas surrounding Sorrow Cemetery.

Stormwater

The KEC Site is located in Federal Emergency Management Agency (FEMA) Zone C, an area located outside of the 100-year and 500-year flood zones. However, a small area on the Generating Facility Property, north of the KEC footprint, is designated a 100-year flood zone or FEMA Zone A.

The drainage design and water quality mechanisms have been designed in accordance with the *2004 Connecticut Stormwater Quality Manual*.

Cost

While the Council understands that the proposed project would cost about \$537,000,000, the financial risk associated with construction, operation and maintenance of the project would fall on the developer, NTE, rather than the Connecticut ratepayers.

Conclusion

The public benefit, or need, for a facility is a function of time, a relationship directly contingent upon a date when additional capacity will be needed. The Council finds and determines that the proposed facility is not necessary for the reliability of the electric power supply of the state or for a competitive market for electricity at this time. If there is a future need for additional capacity, the market will respond.

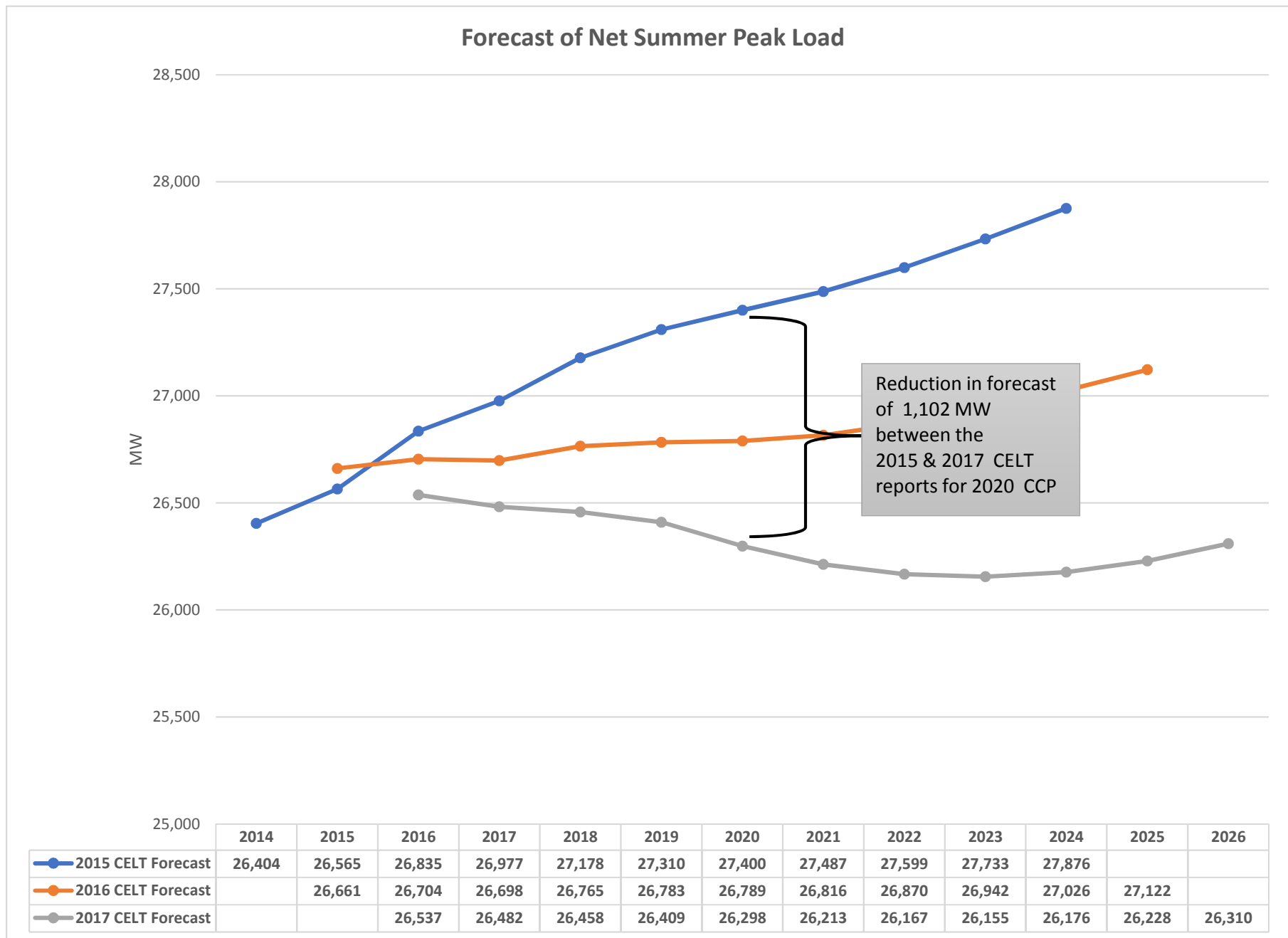
Docket No. 470
Opinion
Page 12

Without a finding and determination of a public benefit for the facility, which is the first decision criterion under C.G.S. §16-50p, the Council does not reach any finding and determination on the second decision criterion regarding environmental impacts and the Council does not reach any finding and determination on the third decision criterion regarding why the environmental impacts are or are not sufficient reason to deny the application. There is no public benefit to balance with the environmental impacts.

Furthermore, without a finding and determination of a public benefit for the facility at this time, the Council will not assert its jurisdiction over the ARRR Orders to affirm, modify or revoke any municipal regulate and restrict orders or make any order in substitution thereof in accordance with C.G.S. §16-50x. Likewise, the Council will not reach a determination at this time under CEPA regarding whether or not the facility is reasonably likely to have the effect of pollution, impairment or destruction of the public trust in the air, water or other natural resources of the state or whether there is a feasible and prudent alternative.

For the foregoing reasons, the Council finds and determines that there is not a public benefit for the KEC and hereby directs the application for a Certificate be denied without prejudice.

Invenergy Response to CLF No. 9
CONFIDENTIAL



Source: ISO-NE CELT reports, Section 1.1.

Unit	Fuel Type	Load Zone	FCA 11 CSO Award (MW)	Cumulative Capacity (MW)
YARMOUTH 3	Oil	ME	57.45	57.45
YARMOUTH 4	Oil	ME	602.05	659.50
MERRIMACK 1	Coal	NH	108.00	767.50
MERRIMACK 2	Coal	NH	330.00	1,097.50
NEWINGTON 1	Oil	NH	400.20	1,497.70
SCHILLER 4	Coal	NH	47.50	1,545.20
SCHILLER 6	Coal	NH	47.82	1,593.02
CANAL 1	Oil	SEMA	554.64	2,147.66
CANAL 2	Oil	SEMA	545.13	2,692.79
MYSTIC 7	Natural Gas	NEMA	570.80	3,263.59
WEST SPRINGFIELD 3	Natural Gas	WCMA	94.28	3,357.86
WEST SPRINGFIELD GT-1	Natural Gas	WCMA	36.91	3,394.77
BRIDGEPORT HARBOR 3	Coal	CT	383.43	3,778.20
MIDDLETOWN 2	Oil	CT	117.00	3,895.20
MIDDLETOWN 3	Oil	CT	233.68	4,128.88
MIDDLETOWN 4	Oil	CT	399.92	4,528.80
MONTVILLE 5	Oil	CT	81.00	4,609.80
MONTVILLE 6	Oil	CT	405.05	5,014.85
NEW HAVEN HARBOR	Oil	CT	447.89	5,462.74
			Total	5,462.74

Source: ISO-NE 2017 Regional Electricity Outlook, p. 28 and
<https://www.iso-ne.com/isoexpress/web/reports/auctions/-/tree/fcm-auction-results>

Ryan Hardy Work Papers
CONFIDENTIAL