STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
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APPLICATION OF NTE CONNECTICUT, LLC 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	:	DOCKET NO. 470
	:	NOVEMBER 15, 2016

SUPPLEMENTAL RESPONSES OF NTE CONNECTICUT, LLC TO CONNECTICUT SITING COUNCIL PRE-HEARING QUESTIONS 83 AND 84

In response to questions raised during the November 3, 2016 evidentiary hearing before the Connecticut Siting Council, NTE Connecticut, LLC hereby supplements its responses to Question Nos. 83 and 84.

Question No. 83

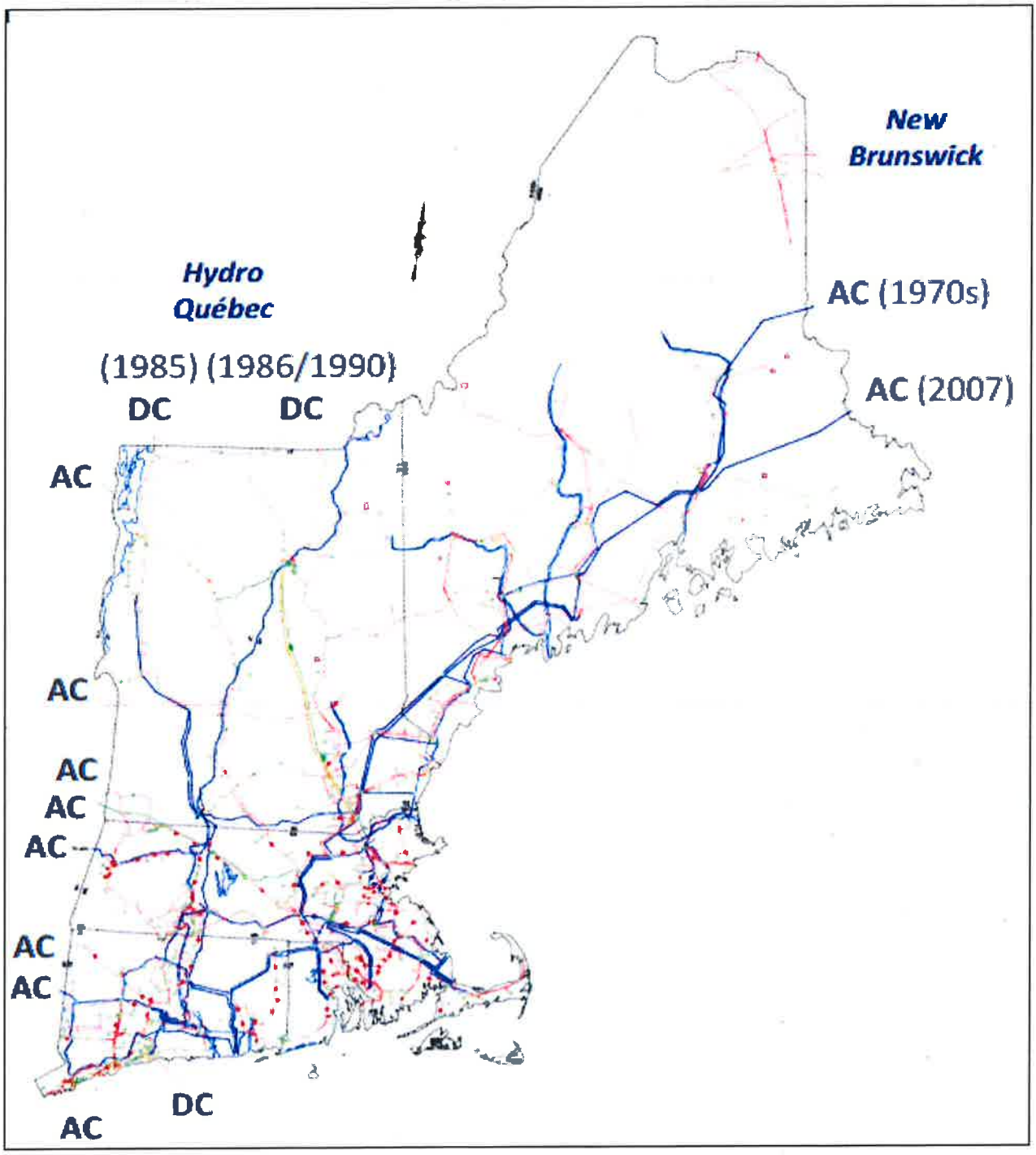
Discuss the concept of power pools and how electric generators operate in a regional New England System.

Supplemental Response

The concept of a regional New England electricity market began with the Northeast Blackout of 1965, during which more than 30 million customers from Maine to New Jersey were without power, and the recognition that the reliability of an electricity system is best met by pooling power generation resources across a region (e.g. the New England states) as opposed to on an individual (e.g. state-by-state) basis. Connecticut, Maine, New Hampshire, Vermont, Massachusetts and Rhode Island are part of this electricity market that currently exists in New England and is operated by the Regional Transmission Operator ISO-NE. These New England

states, and the power plants and electric ratepayers within them, are symbiotically linked and physically interconnected by a series of transmission lines, as shown in Figure 1 below.

Figure 1 – ISO-NE Transmission System[1]



[1] *See* ISO New England Overview and Regional Update, January 21, 2015, page 6.

It is these transmission lines that enable the New England states to rely on each other to collectively minimize the system's wholesale electricity costs while simultaneously maximizing the system's reliability for the benefit of electric ratepayers across the region. For example, Connecticut ratepayers benefit from wind generation in Vermont and Maine, and Vermont and Maine ratepayers benefit from reliable sources of baseload generation like the Millstone nuclear plant in Connecticut.

As previously discussed, ISO-NE procures capacity resources (e.g. new and existing power plants) needed for the reliable operation of the electricity system (and the reliability of the New England states within it) via the Forward Capacity Auctions ("FCA"). (A more detailed discussion of the FCA and ISO-NE's Forward Capacity Market is provided in the Application Appendix B-2 Section 3.3.) The FCA uses a downward sloping demand curve and because that demand curve is downward sloping (and not vertical) the FCAs (and by extension ISO-NE) recognize capacity resources that are procured in excess of the minimum reliability requirement (NICR, or Net Installed Capacity Requirement) provide value to the system's reliability.

Through the FCA, ISO-NE procures the capacity resources needed for the reliable operation of the electricity system (which includes serving the customers of the collective New England states). Capacity resources that clear the FCA receive a Capacity Supply Obligation ("CSO"), which requires the capacity resource to bid into the day-ahead energy market for the 12-month Capacity Commitment Period. In the press release for the most recent FCA (FCA 10), ISO-NE stated: "*The FCM is designed to procure the resources that will be needed to meet projected demand.*"[2] This is consistent with and supported by the Council's statements in Docket No. 192B, where the Council concluded: "*The Council believes that meeting the requirements of*

[2] *See* ISO-NE, Press Release: Finalized Capacity Auction Results Confirm 10th FCA Procured Sufficient Resources, at a Lower Price, for 2019–2020, February 29, 2016, page 1.

ISO-NE's FCA is essential to securing sufficient capacity for reliability of the New England electric power system, which includes serving Connecticut."[3]

KEC plans to participate in FCA 11, scheduled to be held in February 2017, and is expected to receive a CSO for the June 1, 2020 through May 31, 2021 Capacity Commitment Period. If KEC does receive a CSO, KEC will have been found to be needed for the reliability of the electricity system (of which Connecticut is an interconnected part). To qualify to participate in FCA 11, KEC underwent a rigorous evaluation process by ISO-NE's Independent Market Monitor, during which all aspects (including construction costs) of KEC's business case were thoroughly vetted for reasonableness.

NTE Energy is developing KEC and planning to participate in FCA 11 in order to meet the need for new flexible and efficient power generation in Connecticut and the region. This decision was made after extensive analysis and in recognition of the significant lead time involved in (1) identifying the need, (2) developing a project vision, (3) investigating and evaluating the viability of potential locations and host communities, (4) engaging in an extended environmental justice review process, (5) preparing and processing applications for the necessary permits and approvals (including applying for and securing a Certificate of Environmental Compatibility and Public Need from the Connecticut Siting Council), (6) participating in Forward Capacity Auctions, (7) establishing contracts with and assisting in the permitting efforts undertaken by others for critical infrastructure (e.g. natural gas connections, transmission

[3] *See* Council Administrative Notice Item No. 41, Connecticut Siting Council, Docket No. 192B - CPV Towantic, LLC Motion to Reopen and Modify the June 23, 1999 Certificate of Environmental Compatibility and Public Need based on changed conditions pursuant to Connecticut General Statutes § 4-181a(b) for the construction, maintenance and operation of a 785 MW dual-fuel combined cycle electric generating facility located north of the Prokop Road and Towantic Hill Road intersection in the Town of Oxford, Connecticut, Record and Final Decision ("Towantic Record"), Opinion dated May 14, 2015, page 3.

interconnections, roads), (8) constructing and testing the facility prior to commercial operation. Collectively, these efforts typically take 5 years from 'the idea' to actual operations.

In contrast, power plant retirements can happen quite suddenly and without a 5 year warning. This happened in FCA 8, during which Vermont Yankee and Brayton Point (approximately 2,000 MW of capacity) submitted retirement plans only months prior to the auction being held, and significantly less than 5 years from FCA 8's Capacity Commitment Period. (These facilities were located in Vermont and Massachusetts, respectively.) More specifically, ISO-NE did not procure enough capacity in FCA 8 to meet the Net Installed Capacity Requirement (i.e. the minimum amount of capacity needed to reliably operate the electricity system), as new capacity resources did not have enough time to prepare a bid into the auction. In turn, this resulted in a very high capacity clearing price of $15/kW-mo for FCA 8, approximately double the capacity clearing price in FCA 10 of $7.03/kW-mo. Furthermore, since ISO-NE procured less capacity resources than the minimum reliability requirement (the NICR) the reliability of the electricity system in the region and the state of Connecticut was threatened. This example illustrates that events (e.g. retirements) that occur outside of Connecticut (e.g. Vermont and Massachusetts) can have a material impact inside of Connecticut (e.g. higher prices and lower reliability), and that Connecticut is an inseparable part of and contributor to the health and reliability of the regional electricity system.

Due to this disconnect between the timeline to bring new power generation online and foresight into announced retirements, it is imperative that projects like KEC receive all permits and approvals (including the Certificate of Environmental Compatibility and Public Need) ahead and in anticipation of future retirements – such as the 6,000 MW of at-risk retirements identified on page 11 of ISO-NE's 2016 Regional Electricity Outlook.

Question No. 84

Comments have been made that there is not a need for the plant's power output in Connecticut, but that the power is needed to serve Boston and/or eastern New England. Is this correct? If no, why not?

Supplemental Response

As discussed above, Connecticut and the rest of the ISO-NE region are inextricably interconnected and rely on each other for a reliable electricity system. (Figure 1 in Question No. 83 illustrates their physical interconnection.) ISO-NE defines capacity need through the FCA. However, the Siting Council should also consider and find that the facts demonstrate a clear need for KEC in both Connecticut and the ISO-NE region in order to provide benefits to Connecticut ratepayers:

- **New Capacity to Offset Retirements**: KEC is needed to replace the capacity of existing facilities that have retired or are expected to retire in the near future both in Connecticut and elsewhere in the region.
- **Winter System Reliability**: KEC is needed to maintain the reliability of the electricity system during peak winter conditions through use of firm natural gas supply and dual-fuel capability.
- **Support for the Development and Integration of Renewable Resources**: KEC is needed to support the growth of renewable forms of power generation by providing fully dispatchable, flexible and efficient power generation.
- **Reduction in Greenhouse Gas Emissions**: KEC is needed to reduce greenhouse gas emissions through the use of clean burning natural gas and world class turbine

technology (with an efficiency rating of more than 50% when operating in combined cycle mode).

- **Support for the 2014 Integrated Resources Plan for Connecticut.** KEC is needed to support the recommended resource strategies in the 2014 Integrated Resources Plan for Connecticut ("2014 IRP") relating to (i) supporting energy efficiency and demand response programs, (ii) safeguarding the reliability of the state's electric ratepayers, (iii) supporting reliability during winter peak demand, and (iv) supporting the development of Class 1 renewable generation.

New Capacity to Offset Retirements

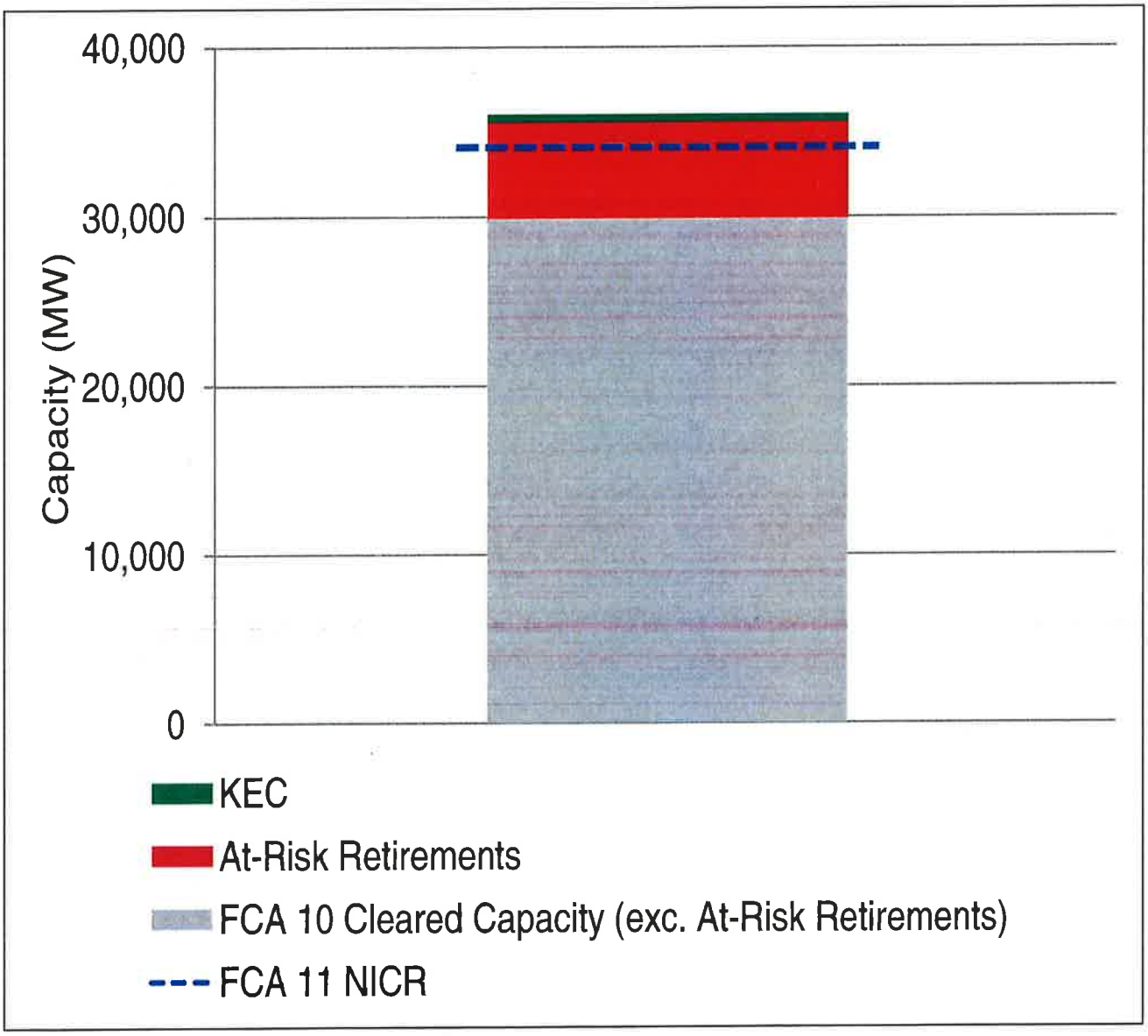
As previously discussed, page 11 of ISO-NE's 2016 Regional Electricity Outlook identifies 6,000 MW of at-risk retirements across the region, with approximately 2,500 MW located in Connecticut (Middletown, Montville, New Haven and Bridgeport Harbor Unit 3).

Before discussing the potential ramifications of these at-risk retirements, it's informative to provide some details about them. The average age of these facilities is approximately 50 years; their average heat rates are significantly higher than KEC (i.e. they use more fossil fuel to produce the same amount of electricity); their CO_2 emissions rates are significantly higher than KEC (i.e. they produce more emissions to create the same amount of electricity); their operating costs are significantly higher than KEC (which increases the cost of wholesale electricity to Connecticut ratepayers); and their ramp rates are significantly lower than KEC (which limits their ability to support the integration of intermittent renewable generation).

If this 6,000 MW were to retire as early as 2020 (which ISO-NE identifies on page 11 of the 2016 Regional Electricity Outlook as a potential retirement date), ISO-NE would need new capacity resources to maintain the reliability of the electricity system for the region and the state

of Connecticut. As illustrated in Figure 2, 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, and represented as the dashed blue line in Figure 2) - even with KEC's approximately 500 MW of new capacity included.

Figure 2 – Potential Retirement Impacts



To date, ISO-NE has conducted 10 FCAs and none of them have procured 4,000 MW of new capacity resources. It is therefore questionable, in the hypothetical example above, whether ISO-

NE would be able procure enough capacity resources to meet the minimum reliability requirement (NICR), and it is extremely unlikely it would be able to do so at a capacity clearing price in-line with the FCA 10 price of $7.03/kW-mo. Therefore it can be concluded that the 6,000 MW of retirements would likely (i) severely and negatively impact the reliability of the electricity market both regionally and within Connecticut and (ii) severely and negatively impact the cost of wholesale electricity both regionally and within Connecticut – a situation that is similar to what occurred in FCA 8 as described in Question No. 83.

This hypothetical example further illustrates that Connecticut is an inseparable part of the regional electricity system, and that events that happen outside of the state (i.e. 4,000 MW of retirements outside of the state) can have material negative consequences (decreased reliability and higher electricity costs) within the state. As a result, KEC is needed to safeguard the reliability within the state of Connecticut and combat the potential unreliability (and the associated higher wholesale electricity costs that could result) as a result of regional retirements outside of the state as identified by ISO-NE.

Winter System Reliability

The winter reliability risks to the electricity system across the region and within Connecticut may be isolated to a few days or hours in a given year, but that does not mean the risk is overstated nor that the benefits from facilities that help mitigate that reliability risk are inflated. This is no different than planning for summer system reliability to address the highest expected electricity demand in a given year - which may actually occur in a single hour or handful of hours within that year.

KEC provides two attributes that contribute to system reliability, especially during the winter. First, KEC is a dual-fuel facility, with the ability to switch operations to ultra-low sulfur

diesel (ULSD) in the unlikely event that a gas curtailment impacts those facilities holding firm gas supply contracts for short periods of time.[4] By having the ability to switch to ULSD KEC will be supporting the reliability of the system and the state of Connecticut through fuel diversity (since KEC will be able to continue to operate even if gas supply is unavailable). This is supported by the Council's Finding No. 83 in Docket No. 192B where the Council concluded: "*dual-fuel capability would be useful in the New England fuel mix to deal with the problem of winter peaks when gas becomes unavailable.*"

Second, KEC has a firm gas supply contract, and this contract is not dependent on upgrades to the existing natural gas pipelines. (As discussed in Section 1.6 of the Application, KEC's firm natural gas transport and supply contract will be sourced directly from the Algonquin Gas Transmission ("AGT") interstate natural gas pipeline, and will provide up to 95,000 million British thermal units ("MMBtu") per day for seven years, starting in 2020. This is enough natural gas to support KEC's operations at maximum output for 24 hours. The natural gas interconnection will include a natural gas pipeline lateral approximately 2.8 miles in length, connecting the existing AGT pipeline to KEC within an existing natural gas line lateral right-of-way owned and operated by Yankee Gas.) ISO-NE and the state of Connecticut have identified current and future pipeline constraints (most likely to manifest themselves during high winter heating demand) as a significant threat to system reliability.[5] ISO-NE President and CEO Gordon van Welie stated in his September 28, 2016 presentation that winter system reliability

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[4] *See* Council Administrative Notice Item No. 31, *2014/2015 Forecast of Electric Loads and Resources*, December 10, 2015, p. 30 ("The Council believes that dual-fuel capability is an important part of diversifying the fuel mix for electric generation, with the benefit of avoiding overdependence on a particular fuel.")

[5] *See* 2014 Integrated Resources Plan (IRP) for Connecticut, p. vi, Resource Strategy #4 ("The inadequate supply of infrastructure to meet the needs of New England's increasingly gas-dependent generation fleet is the most pressing problem facing Connecticut and New England at this time, threatening the reliability of the grid during cold winter weather . . .")

was one of the most pressing issues facing the region, describing on page 5 the winter time operation situation as "*precarious*" and "*...beyond 2019 it may become unsustainable...*". During these periods of extreme winter heating demand gas supply curtailments are likely for facilities with interruptible natural gas supply contracts. KEC is therefore well positioned to support system reliability because of its firm natural gas supply contract, which provides a secure source of fuel supply.

Development and Integration of Renewable Resources

Connecticut's Renewable Portfolio Standard calls for 20% of Connecticut's electricity usage come from Class 1 resources by 2020, which is higher than the Class I targets in Massachusetts and Rhode Island. Furthermore, ISO-NE on page 11 of its 2016 Regional Electricity Outlook identifies more than 6,000 MW (nameplate) of proposed wind and solar generation. As the state of Connecticut and the region attract these increasing amounts of renewable resources, Connecticut and the region will need flexible and efficient forms of power generation to maintain the reliability of the system. ISO-NE recognizes this, on page 10 of the 2016 Regional Electricity Outlook, in stating: "*The ability of many natural-gas fired plants to change output quickly helps balance an increasing amount of generation from intermittent power resources that rely on wind and solar.*" This is because wind and solar are (as the ISO-NE states) intermittent 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 does not shine. KEC, 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 (and thereby aid the state of Connecticut in meeting its RPS targets). This is supported by comments made by Katie Dykes

(current Commissioner of PURA and former Deputy Commissioner of the DEEP) in her November 3, 2016 interview with WNPR.[6] In the interview she stated:

> *"Today, in New England, gas and renewables are tied together—their destiny is linked in the grid that we have today. To the extent that the integration of more and more renewables in the absence of widely deployed storage—we're not quite there yet—means that this challenge of ensuring that the gas is going to be there to balance those renewables in what is essentially a very gas-dependent grid today means that achieving these goals of a cleaner grid while maintaining reliability means that grid operators, policy makers, have to continue to watch closely and think carefully about the reliability of our gas generation system. Our economy is built on an expectation of 24/7/365 reliable electric power, and that means that the integration of these renewable resources depends, at least in the near term, on having a reliable gas system to back it up."*

This view is further supported by Gordon van Welie President and CEO of ISO New England on page 4 of the 2016 Regional Electricity Outlook: "*...the region will be calling on natural-gas resources to counter fluctuations in output from renewables.*" Mr. van Welie then reiterated these comments in a presentation he delivered on September 28, 2016, stating on page 16: "*Growing levels of renewable generation will require a fleet of flexible resources...to reliably balance the variability of renewable resources.*" KEC's flexible and efficient operating attributes are very similar to the Towantic Energy Center – which in Finding No. 80 the Council concluded "*flexible and reliable generation [like the CPV dual-fuel, combined cycle plant] will be needed to maintain system reliability, while supporting the increasing amounts of intermittent renewable generation.*"

The need for flexible and efficient generation to integrate intermittent renewable generation is well documented beyond New England. Several balancing areas[7] that currently

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[6] "*Can New England Move Forward with Renewables Without Leaning on Natural Gas?*" NEXT with John Dankosky, WNPR, Hartford, Connecticut.

[7] A balancing area is an area comprising a collection of generation, transmission, and loads within metered boundaries for which a responsible entity (defined by NERC to be a balancing authority) integrates resource plans for that area ahead of time, maintains the area's load-resource balance, and supports the area's interconnection frequency in real time.

have significant amounts of intermittent renewable generation have formally recognized the need for flexible power generation to accommodate the intermittency of renewable generation and maintain system reliability. For example, in 2014, the California Independent System Operator Corporation ("CAISO") implemented a Flexible Resource Adequacy requirement to ensure sufficient amounts of fast ramping capacity resources to better integrate renewable generation into CAISO.[8] In Colorado, Xcel Energy has implemented Flex Reserve Service, which is a FERC-approved tariff to provide dedicated operating reserves comprised of quick start natural gas-fired power generation to address wind variability.[9] Similarly, in its 2013 IRP, Puget Sound Energy undertook an operational flexibility study to ensure it had enough balancing capacity to accommodate intra-hour flexibility needs arising from wind and load deviations.[10]

These examples in regions with high concentrations of renewable generation reinforce the need for flexible and efficient power generation with increasing amounts of intermittent renewable generation – and KEC, with its 6,500 Btu/kWh full load heat rate and 29 MW per minute ramp rate, can meet this need.

Reduction in Greenhouse Gas Emissions

As described in the Application, KEC will be using a Siemens H-class natural gas turbine, which represents a world class turbine technology with an efficiency rating of more than 50% when operating in combined cycle mode. This will enable KEC to operate ahead of older, more inefficient forms of power generation, which will result in a reduction in regional CO_2 emissions. More specifically, as illustrated in Table 1-1 on page 13 of the Application KEC is

[8] *See* California Independent System Operator Corporation, Fifth Replacement FERC Electric Tariff, Section 40.10.4.1, Effective Flexible Capacity Calculation.

[9] *See* Open Access Transmission Tariff of Xcel Energy Inc., Schedule 16, p. 157, Flex Reserve Service.

[10] *See* 2013 Integrated Resources Plan (IRP) for Puget Sound Energy, Appendix G, p. G-1 – G-28, Operational Flexibility.

forecasted to reduce annual CO_2 emissions by approximately 300,000 tons. This will help the state of Connecticut meet and likely exceed its CO_2 emissions reduction targets under the Global Warming Solutions Act.

Support for the 2014 Integrated Resources Plan for Connecticut

The Public Utility Environmental Standards Act and the 2014 Integrated Resources Plan for Connecticut provide guidance on the definition of need and the empirical evaluation and consideration of need for power generation within the state of Connecticut, respectively. Public benefit and public need is defined in the Public Utility Environmental Standards Act Ch. 277a. (page 795), "*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 and a public need exists when a facility is necessary for the reliability of the electric power supply of the state.*" And, as stated in the 2014 IRP, "*Connecticut law requires that an IRP be prepared every two years, and that it assess the state's energy and generation capacity needs to provide a plan to meet those needs, lower costs, and advance the state's environmental goals, giving priority to resources that reduce demand for electricity...*". As also stated in the 2014 IRP, "*The IRP must also consider the reliability of the electric system, including the diversity, availability, security, and environmental impacts of different fuel types, and the appropriate reliance on electricity imported into the region.*" While the 2014 IRP advocates for increasing amounts of demand response and renewable generation resources, the 2014 IRP 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). Moreover, as discussed in the Application Appendix B-2 Section 2.3.1, KEC provides a public benefit to the ratepayers of Connecticut through wholesale electricity cost savings – estimated to be on average $215 million

per year – as a direct impact of KEC's introduction and participation in the Forward Capacity Auction and ISO-NE daily energy market.

In addition to previously described needs for and benefit from KEC within the state of Connecticut, KEC supports the objectives of the 2014 IRP. More specifically, KEC's demonstration of need relative to the 2014 IRP's Resource Strategies 1, 2, 3, 4 and 6 is discussed below.

- **Resource Strategy #1: Continue to improve the cost-effectiveness and increase energy savings from conservation & load management programs and state buildings.**
- **Resource Strategy #2: Pursue options to retain demand resources.**

These strategies #1 and #2 pertain to Connecticut's desire and ability to continue funding and implementing demand response resources to reduce electricity usage growth. Connecticut has been very successful in attracting large amounts of demand response resources, and expects demand response resources to slow future electricity demand growth. However, this also introduces reliability concerns for the ISO-NE system, which are reduced by the addition of KEC.

Increasing amounts of demand response resources on the electricity system are likely to exacerbate the reliability challenges associated with the integration of renewable generation. Demand response resources reduce the system's electricity demand. Furthermore, as (i) the 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 renewable generation. In turn, this increases the need for flexible and efficient power generation on the system to help ISO-NE

manage the intermittent nature of the renewable generation. And by helping to manage the renewable generation KEC will be supporting the continued growth of demand response resources within the state of Connecticut in a reliable way.

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. (These retirements will be discussed in detail as part of the discussion of Resource Strategy #3).

- **Resource Strategy #3: Monitor Capacity Market and Plan for Contingencies**

In the 2014 IRP, Connecticut reaffirmed its obligation to ensure adequate capacity is available to safeguard the reliability of the state's electric system. More specifically, the 2014 IRP describes how the state depends on ISO-NE's Forward Capacity Market to procure capacity resources and meet its reliability needs (page 77), but that the state reserves the right to acquire capacity resources outside of the Forward Capacity Market to maintain reliability if needed (page vi).

The 2014 IRP (Page 13) states "*Local electric supply should be adequate barring the unexpected loss of approximately 2,000 MW of supply.*" As previously discussed, on page 11 of ISO-NE's 2016 Regional Electricity Outlook, Connecticut has approximately 2,500 MW of at-risk retirements – Middletown, Montville, New Haven and Bridgeport Unit 3.

These four facilities represent approximately 20% of the total capacity in Connecticut. These facilities are in addition to the approximately 500 MW that has already retired from

Bridgeport Unit 2 and Norwalk. While new power generation within Connecticut such as Bridgeport Harbor Unit 5 and the Towantic Energy Center will help offset a portion of these 3,000 MW of retired and at-risk retirements, they do not fully offset them – together Bridgeport Unit 5 and Towantic are approximately 1,250 MW. Since the 2014 IRP did not forecast the retirement of Middletown, Montville, New Haven and Bridgeport Unit 3 (approximately 2,500 MW), it can be extrapolated that based on the 2014 IRP and taking into consideration the approximately 2,500 MW of at-risk retirements within Connecticut, Connecticut's reliability may be at risk. KEC, with its 500 MW of flexible and efficient power generation, is well positioned to help address this risk.

- **Resource Strategy #4: Procure resources to address winter peak demand.**

This strategy pertains to natural gas infrastructure constraints in Connecticut and the region, particularly during the winter. As stated in the 2014 IRP, Connecticut may be forced to acquire non gas-fired resources if the regional problem is not addressed: "*In the absence of a credible market solution, the problem is left to the state to solve in several possible ways:...by procuring approximately 5,000 MW of non-gas fired generation or measures that reduce demand for electricity...*".

KEC provides two attributes that contribute to system reliability during the winter – specifically its dual-fuel capability that provides fuel diversity, and its firm natural gas supply contract. By having (i) a reliable source of natural gas supply and (ii) in the extreme event firm gas supply is unavailable the ability to operate on ULSD, KEC is helping to address winter peak demand and the associated reliability issues in Connecticut and the region.

- **Resource Strategy #6: Support development of additional Class I renewables.**

This strategy pertains to the increased development of Class I renewable generation within the state of Connecticut. As previously discussed, Connecticut's RPS target of 20% Class 1 renewable generation by 2020 will bring additional renewable generation into the state and wider region. However, similar to how non-dispatchable demand response resources create reliability concerns to ISO-NE, the limited dispatchability of wind and solar generation also creates reliability concerns. KEC is a quick-start and quick-response combined cycle facility with a ramp rate of 29 MW per minute and can respond quickly to sudden changes in renewable generation output on the ISO-NE system. KEC will provide Connecticut with a flexible source of power generation that will promote the further development of Class I renewable generation within the state and surrounding region. Without power generation like KEC, the amount of Class I renewable generation that can be installed in Connecticut and ISO-NE could be significantly limited.

The Need for KEC in Connecticut and New England

As demonstrated above, there is a need for KEC in Connecticut. As stated by ISO-NE in its 2016 Regional Electricity Outlook and in comments made by ISO-NE President and CEO Gordon van Welie in his presentation delivered on September 28, 2016, the New England electricity system is facing challenging and serious reliability issues related to (i) at-risk retirements, (ii) winter peak demand, (iii) renewable generation integration. These reliability issues impact the entire electricity system (of which Connecticut is an interconnected part), and if not addressed will result in higher wholesale electricity costs and lower reliability for Connecticut ratepayers. KEC is needed to help address these issues, while also reducing CO_2 emissions in the region. Based on the definition of public benefit and public need in the Public

Utility Environmental Standards Act and the resource strategies outlined in the 2014 IRP, the Council should find that the facts presented herein demonstrate a clear public benefit and public need in Connecticut.

CERTIFICATION OF SERVICE

I hereby certify that on this 15th day of November 2016, a copy of the foregoing was hand delivered to the following:

John Bashaw, Esq.
Mary Mintel Miller, Esq.
Reid and Riege, P.C.
One Financial Plaza, 21st Floor
Hartford, CT 06103
jbashawfilrrlawpc.com
mmiller@rrlawpc.com

Sean Hendricks, Town Manager
Town of Killingly
172 Main Street
Killingly, CT 06239
shendricks@killinglyct.org

Joshua Berman
Staff Attorney
Sierra Club
50 F Street NW, 8th Floor
Washington, DC 20001
josh.berman@sierraclub.org

John Looney, Esq.
Roger Reynolds, Esq.
Connecticut Fund for the Environment
900 Chapel Street, Upper Mezzanine
New Haven, CT 06510
jlooney@ctenvironment.org
rreynolds@ctenvironment.org

Kenneth C. Baldwin