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August 18, 2021

Melanie A. Bachman, Esq.
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition 1406A - Responses to Allco Renewable Energy Limited
Interrogatories

Dear Ms. Bachman:

NuPower Bridgeport FC, LLC ("NuPower") hereby submits to the Connecticut Siting Council ("Council") its responses to Allco Renewable Energy Limited's interrogatories.

Given that the Council has waived all hard copy filing requirements as part of its response to the COVID-19 pandemic, by this letter, NuPower submits to the Council an electronic copy of its responses. A hard copy of the responses will be mailed to the Council.

Should you have any questions regarding this filing, please do not hesitate to contact me.

Very truly yours,



Bruce L. McDermott

Enclosure

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Interrogatory ARE-1

NuPower Bridgeport FC, LLC

Witness:

Petition No. 1406A

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- Q-1: Referring to petition docket 1406A (March 31, 2021) (“Petition”), Attachment B, Report from Trinity Consultants (“Trinity Report”),
- a. Please provide the data files used in preparing the Trinity Report in a format that can be verified and confirmed by a third-party consultant.
 - b. Provide the results of the Trinity Report’s analysis in “plume mode.”
 - c. Please explain what traffic analysis was done regarding the driving hazards on I-95 from the additional hour each year of fog and ice that the Trinity Report concludes the Project will cause on I-95.
 - d. If a driver on I-95 dies as the result of an accident caused by the additional fog and ice caused directly by the Project, explain why both NuPower and The United Illuminating Company (“UI”) would not be liable for a charge of criminally negligent homicide under Conn. Gen. Stat. § 53a-58?
 - e. If a driver on I-95 dies as the result of an accident caused by the additional fog and ice caused directly by the Project, explain why both NuPower and UI would not be liable for a charge of manslaughter in the second degree under Conn. Gen. Stat. § 53a-56(a)(1) as recklessly causing the death of another person?
 - f. Referring to page 7 of the April 7, 2021 motion to reopen, you refer to the Project’s additional hours of source-induced ice and fog as “insignificant”. Can you please explain why adding hazardous driving conditions on I-95 is “insignificant”?
- A-1: a-f The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-2

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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- Q-2: Referring to Petition page 3 and the following statement therein: "The Project furthers Connecticut's renewable energy goals and contributes to the state's grid reliability."
- a. Explain how the project would contribute to the greenhouse gas emissions goals in Conn. Gen. Stat. 22-200a?
 - b. Explain how the Project would contribute to the state's grid reliability.
 - c. Do you contend that the state's grid is unreliable? If so, please explain.
 - d. How do you reconcile your claim of contribution to the state's grid reliability with the statement that the Department of Energy and Environmental Protection ("DEEP") made in its brief in Public Utilities Regulatory Authority ("PURA") docket 18-08-14 that there was a "lack of any appreciable benefits to the electric system" from the Project? See, *PURA review of the combined heat and power project solicitation pursuant to Conn. Gen. Stat. § 16-258e*, docket 18-08-14, *Brief of the Department of Energy and Environmental Protection*, June 7, 2019 at 9 (the "DEEP Brief").
 - e. How do you reconcile your claim that the Project furthers the renewable energy goals of the State of Connecticut with DEEP's assertion in the DEEP Brief at 12 that bringing the Project online would be "causing Connecticut to backslide on its climate goals"?
 - f. How do you reconcile your claim that the Project furthers the renewable energy goals of the State of Connecticut with DEEP's assertion in the DEEP Brief at 12 that bringing the Project online "undermines the state's ability to meet th[e] statutory targets" of Conn. Gen. Stat. § 22a-200a?"
 - g. Do you have any independent third-party, science-based analyses that reach the conclusion that using natural gas for electricity generation would contribute to the greenhouse gas emission goals of Conn. Gen. Stat. §22-200a? If so, please provide it.

Interrogatory ARE-2

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- A- 2:
- a. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.
 - b-d. The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.
 - e-g. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-3

NuPower Bridgeport FC, LLC

Witness:

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- Q-3: Referring to Petition page 3 and the statement that the Project would contribute to the “competitiveness of Connecticut’s electric market”:
- a. Please explain what “market” you are referring to?
 - b. Please explain how you believe the Project contributes to the competitiveness of Connecticut’s electric market.
 - c. Do you have any independent third-party analysis that support your claim that the Project contributes to the competitiveness of Connecticut’s electric market? If so, please provide it.
- A-3: The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-4

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- Q-4: Referring to Petition page 4 and the statement therein: "At the request of NuPower, Doosan conducted a hazard analysis of the Project to determine the risks associated with the installation of the Project and has developed mitigation plans for the risks identified. The analysis has resulted in design modifications to mitigate the risk of an explosion."
- a. Please provide a copy of the hazard analysis conducted by Doosan.
 - b. Are all of the proposed mitigation features now proposed for the Project included on other Doosan fuel cells operating in the State of Connecticut? If not, identify by project, which such mitigation features are not incorporated into other Doosan fuel cells operating in the State of Connecticut.
- A-4:
- a. See Petition Section X.
 - b. NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-5

NuPower Bridgeport FC, LLC

Witness:

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Q-5: Referring to Petition page 4 and the statement therein: "NuPower has exclusive rights to a long-term (up to 20 year plus renewals) lease of the Site."

a. Please provide a copy of the exclusive rights agreement.

A-5: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-6

NuPower Bridgeport FC, LLC

Witness:

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Q-6: Referring to Petition page 5 and the statement therein: "NuPower owns and operates a 440kw Doosan fuel cell located in the courtyard of the Cherry Streets Lofts Complex in Bridgeport."

- a. What has been the availability factor of the Cherry Street Lofts fuel cell since commencement of commercial operation?
- b. What has been the capacity factor of the Cherry Street Lofts fuel cell since commencement of commercial operation?
- c. What has been the efficiency factor of the Cherry Street Lofts fuel cell since commencement of commercial operation?
- d. Has there been a noise study or review of the Cherry Street Lofts fuel cell since commencement of commercial operation? If so, please provide it.
- e. Have there been any issues with the operation of the plant at the Cherry Street Lofts? If so, please explain what issues there have been and how they have been addressed.
- f. Have there been any complaints made by nearby residents with the operation of the plant at the Cherry Street Lofts? If so, please provide a copy of the complaints.
- g. Has there been an independent, third-party analysis done to determine the non-CO2 emissions produced by the Cherry Street Lofts fuel cell? If so, please provide it.
- h. Has there been an independent, third-party analysis done to determine the CO2 emissions produced by the Cherry Street Lofts fuel cell? If so, please provide it.
- i. Has there been an independent, third-party analysis done of the levels of hazardous materials in the fuel cell stack? If so, please provide it.
- j. Has there been an independent, third-party analysis done of the levels of hazardous materials in the components in the fuel processing system? If so, please provide it.

Interrogatory ARE-6

Allco Renewable Energy Limited

Witness:

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k. Please provide a copy of your procedures for removing and disposing of hazardous materials that exist in the cell stack assemblies and components in the fuel processing system.

A-6: a-k. The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-7

NuPower Bridgeport FC, LLC

Witness:

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Q-7: Referring to Petition page 8 and the statement therein: "The total height of the facility with the cooling fans will be approximately 70' 6" above ground level and approximately 84' 6" above mean sea level. The top of the parapet wall (base of steel structure) for the elevated highway ranges from 67.53' to 58.83' from east to west along the property. The structure will be a minimum of 5' from the property line and the distance from the property line to the I-95 roadway varies from approximately 6' to 8' as depicted on the site survey so therefore the setback is approximately 12' from the I-95 roadway."

- a. At Petition page 21 it is claimed that "[t]he proposed facility will not be visible from residential areas." Identify the structures that are higher than 70' and in-between the Project and residential areas.

A-7: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-8

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-8: Referring to Petition page 9, is the underground nitrogen stored in the underground tank only used for the piping for the centralized purge system? Please explain how the purge system works, what is purged and when purging occurs.

A-8: The stored nitrogen on site will be used solely for purging the fuel cells. When the fuel cells shutdown, in a fail-safe mode, the purge gas is utilized to rid the fuel processing system and the cell stacks of any gas.

Interrogatory ARE-9

NuPower Bridgeport FC, LLC

Witness:

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Q-9: Referring to Petition page 10 and the statement therein: "Because of the current lack of available hydrogen fuel in the United States, the fuel cell internally reformulates the natural gas into its own hydrogen fuel along with oxygen as a byproduct."

- a. What support to you have that there is a lack of hydrogen available in the United States?
- b. Isn't hydrogen used in formulating hundreds if not thousands of food products, including commonly used products such as Crisco?

A-9: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-10

NuPower Bridgeport FC, LLC

Witness:

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- Q-10: Referring to Petition page 10 and the statement therein: "The fuel cell produces electricity by physically passing the hydrogen through its fuel cell stack. Once this is completed, the hydrogen combines with the oxygen to form clean water which supports the fuel cell's internal cooling. As a result of the inherent nature of the fuel cell electrical production process, there is an extremely small emission level and water discharge."
- a. Please provide an independent, third-party analysis of the emission level by emission type that results from physically passing the hydrogen through its fuel cell stack.
- A-10: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-11

NuPower Bridgeport FC, LLC

Witness:

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- Q-11: Referring to Petition page 10 and the statement therein: “The Project will be interconnected to UI’s Congress Street Substation through a new duct bank/overhead route that is currently being designed and will be constructed by a NuPower and UI joint venture. As currently proposed, the length of the route is 7,800’. UI and NuPower have signed an Interconnection Participation MOU that provides that the parties will work together to design and construct the electric interconnection.”
- a. Please provide a copy of the Interconnection Participation MOU.
 - b. Please provide a copy of the system impact study.
 - c. Please provide a copy of the facilities study.
- A-11: The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-12

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-12: Referring to Petition page 10 and the statement therein: “The Project will provide the state’s electrical system with additional generating capacity that will meet demand using renewable energy.”

- a. Please explain how the use of natural gas as a fuel source is considered “renewable energy”.
- b. How do you respond or comment on UI’s parent company (Avangrid) recently calling fossil fuel generation “dirty”? *see, “Feud between energy giants puts state’s climate goals at risk,” Boston Globe, July 21, 2021 (“NextEra is more concerned about preserving its bottom line and dirty fossil fuel plants than it is about replacing a critical, 30-year-old breaker,’ said Susan Millerick, a spokeswoman for Avangrid.”), available at <https://www.bostonglobe.com/2021/07/21/science/feud-between-energy-giants-putsstates-climate-goals-risk/>.*
- c. Do you agree that fossil fuel generation is “dirty?” If not, please explain your disagreement.
- d. Do you have any independent third-party, science-based analyses that reach the conclusion that using natural gas for electricity generation is considered “renewable energy?” If so, please provide it.

A-12: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-13

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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- Q-13: Referring to Petition page 11 and the statement therein: “The Project is consistent with Connecticut’s 2013 Comprehensive Energy Strategy (“CES”), which sets forth clear goals for increasing the use of renewable energy as part of the state’s power generation portfolio.”
- a. Please explain why you refer to the 2013 CES when that document is outdated and superseded by the 2018 CES?
 - b. Please explain how the use of natural gas is using “renewable energy”.
 - c. Do you have any independent third-party, science-based analyses that reach the conclusion that using natural gas for electricity generation is considered “renewable energy?” If so, please provide it.
- A-13: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-14

NuPower Bridgeport FC, LLC

Witness: Dave Flanagan

Petition No. 1406A

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- Q-14: Referring to the Petition page 12 and the statement therein: "The Project will not need to be supplemented by combustion-based generation during peak hours when intermittent renewables are often unavailable. This will further contribute to a significant reduction in greenhouse gasses: (1) nitrogen oxides (NOX) by 18.64 metric tons; (2) sulfur oxides (SOX) by 4.68 metric tons; and (3) carbon dioxide (CO2) by 5,057 metric tons."
- a. Please provide your calculation of the claimed reductions in NOX, CO2 and SOX.
 - b. Please provide a list of what your statements assumes as peak hours.
 - c. Do you possess any independent, third-party reports or analyses that support your claimed reductions? If so, please provide it.
 - d. Please explain what peak hours you have assumed intermittent renewables would be unavailable.
 - e. Do you possess any independent, third-party reports or analyses that support your assumption regarding the peak hours you have assumed intermittent renewables would be unavailable?
 - f. Do you possess any independent, third-party reports or analyses that support your use of combustion-based generation as a proxy for your claimed reductions? If so, please provide it.
 - g. How do you reconcile your claims of reductions with the statement in the DEEP Brief at 12 that "bringing this project on line would increase carbon dioxide emissions when compared with the expected emissions from the grid over the next 20 years, causing Connecticut to backslide on its climate goals."
- A-14: a. The United States Environmental Protection Agency's Emissions & Generation Resource Integrated Database (eGRID) was used as a basis to calculate grid emissions of NO_x, CO₂ and SO_x needed to produce 9.66MW plus line losses in New England. The fuel cell emissions =were subtracted from the calculated emissions that would be released by producing the same quantity of energy as the fuel cell. The result is the reduction of NO_x, CO₂ and SO_x.

Interrogatory ARE-14

NuPower Bridgeport FC, LLC

Witness: Dave Flanagan

Petition No. 1406A

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- b. GST and LPT on-peak period is defined in United Illuminating's applicable tariffs on file with PURA. For your convenience, 10am-6pm Monday through Friday is the published peak hours.
- c. No.
- d. See response to Interrogatory ARE-14b.
- e. A third party report is not needed to foresee that the power output from a solar facility would be reduced on a cloudy day. A storm or overcast weather occurring between 10am-6pm would cause a situation where the power gap from inadequate sunlight affecting solar panel production would be supplemented by a combustion-based generator. A fuel cell runs 24/7, day or night, rain, ice or snow. In addition, in the winter months, sunset occurs before 5pm. With GST and LPT rates, this leaves an hour gap before the off-peak period which starts after 6pm.
- f. No. eGRID data was used.
- g. In PURA Docket No. 18-08-14, PURA Review of the Combined Heat and Power Project Solicitation Pursuant to Conn. Gen. Stat. Section 16-258e, NuPower was asked by PURA to explain the difference between the CO2 direct and avoided emissions presented in two exhibits in NuPower's PURA application. The exhibit relied upon by DEEP in its Brief on page 12, which is referenced in this interrogatory, used a future grid projection predicated on several assumptions that have yet to come to fruition including the adoption of wind powered generation. PURA's Decision in Docket No. 18-08-14 does not determine that the referenced statement from DEEP's brief was accurate.

NuPower's response to PURA was as follows:

Although we do not have the backup data used by Levitan and Associates, Inc (LAI), we believe that the primary difference between the two referenced projections is the base line used by both parties to measure the CO2 reduction. The NuPower analysis

Interrogatory ARE-14

NuPower Bridgeport FC, LLC

Witness: Dave Flanagan

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uses calculations provided by Doosan America (Doosan) for the CO2 reductions attributable to the electrical generation portion of the Project and by the Ramboll Group A/S (Ramboll) for the CO2 reductions attributable to the thermal loop portion of the Project using existing market conditions to determine an overall annual CO2 reduction. We believe that the LAI results are based on a 20-year projection of possible electrical generation sources. LAI projects an expanding renewable generation baseline in order to determine their 20-year CO2 net results.

Exhibit B is the work product of LAI and our understanding of the assumption and methodology is conjecture. However, based on what we can surmise from their December 18, 2018 report, LAI has projected an electrical generation mix for the New England region over a 20-year period. This projection would include a significantly different mix from existing generation resulting from an assumption of a wide spread adoption of wind and solar powered generation. Today, these technologies are intermittent power sources and the New England grid relies heavily on primarily natural gas combustion generation for base power. Fuel cells use a physical rather than a combustion process to provide base power generation with significantly less emissions as compared to natural gas combustion. We further assume that LAI projects that intermittent power generation will be paired with energy storage technologies to avoid the intermittency problem. For this to happen, current emerging storage technologies must become both cheaper and integrated into a slowly evolving New England grid system.

Response to Interrogatory EL-18.

Interrogatory ARE-15

NuPower Bridgeport FC, LLC

Witness:

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- Q-15: Referring to the Petition page 12 and the statement therein: “NuPower estimates that the Project will (1) provide up to 20 construction jobs in Connecticut; (2) provide up to \$78 million in capital investment; (3) generate over \$5.5 million in state tax revenue over 20 years; and (4) generate over \$5 million in local tax revenue over 20 years.”
- a. Please provide an explanation and detail as to the calculation of those estimates.
 - b. Please provide a per year calculation of what United Illuminating is projected to pay under the power purchase agreement.
 - c. Did you perform a comparison of the costs of the Project to ratepayers versus what a solar project would cost ratepayers for an equivalent number of megawatt hours per year? If not, why not? If yes, please provide the analysis.
 - d. Do you agree or disagree with the statement made in the DEEP Brief at page 10 that: “The result is that the [Project’s] contract [with UI] will cost ratepayers \$146 million more than the project’s benefits to ratepayers.” If you disagree, please explain your disagreements and your calculations of the net costs and benefits to ratepayers.
- A-15: The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-16

NuPower Bridgeport FC, LLC

Witness:

Petition No. 1406A

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- Q-16: Referring to the Petition page 12 and the statement therein: “Although not part of this Petition, in addition to the power produced by proposed facility, it will provide thermal energy to the district heating loop. The combined heat and power facility would be able to recover useful heat from electricity generation, and when used, can result in a fuel cell electrical efficiency factor of up to 90 percent.”
- a. What is the status of the thermal loop?
 - b. Please provide all contracts for the purchase of heat from the proposed thermal loop.
 - c. Please provide all letters of intent for the purchase of heat from the proposed thermal loop.
 - d. Please provide a plan set that shows where and how the thermal loop is proposed to be constructed. If a full plan set is not available, please provide the plans to the extent prepared.
 - e. Please provide one example with supporting documentation of an operating Doosan fuel cell in the United States that has operated for its life at an efficiency factor of 90 percent.
 - f. Doesn't the thermal loop conflict with the new emphasis of DEEP on deploying air source heat pumps? If not, please explain with reference to DEEP's current draft integrated resource plan.
 - g. In the case of counterparties that have executed letters of intent or a contract for the purchase of heat from the proposed thermal loop, have you analyzed the benefits of providing the equivalent amount of heat from air source heat pumps? If not, why not?
 - h. Do you possess any third-party reports or analyses that conclude that a thermal loop as proposed would be more beneficial to ratepayers than providing the equivalent amount of heat from air source heat pumps? If so, please provide it.
 - i. Do you possess any third-party reports or analyses that conclude that a thermal loop as proposed would be more beneficial to the environment than providing the equivalent amount of heat from air source heat pumps? If so, please provide it.

Interrogatory ARE-16

NuPower Bridgeport FC, LLC

Witness:

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- j. Do you possess any third-party reports or analyses that conclude that a thermal loop as proposed would be more beneficial to achieving the greenhouse gas emission goals of Conn. Gen. Stat. §22-200a than providing the equivalent amount of heat from air source heat pumps? If so, please provide it.

A-16: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

The Connecticut Siting Council does not have jurisdiction over thermal loops so that part of the Project was not included in Petition 1406A.

Interrogatory ARE-17

NuPower Bridgeport FC, LLC

Witness:

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Q-17: Referring to Petition, Attachment I, please explain why the ISO-New England letter refers to the generator applicant as Avangrid/United Illuminating.

A-17: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-18

NuPower Bridgeport FC, LLC

Witness:

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Q-18: Referring to Petition page 16 and the statement therein: "The Project is consistent with local, state and federal land use plans and is consistent with Bridgeport's Plan of Conservation and Development."

- a. Please explain exactly how the Project is consistent with local, state and federal land use plans and is consistent with Bridgeport's Plan of Conservation and Development.
- b. Please explain what federal land use plans you are referring to.
- c. Please explain what state land use plans you are referring to.
- d. Please explain what local land use plans you are referring to.

A-18: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-19

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-19: Referring to Petition page 16 and the statement therein: "Development of the Project will transform an underutilized property to a productive fuel cell facility that will deliver renewable energy to the regional grid."

- a. Wouldn't the site better serve the neighborhood if the State of Connecticut converted it to a park or converted it to a community use? If not, explain why not.
- b. Please explain how the use of natural gas can be considered "renewable energy."
- c. Do you have any independent third-party, science-based analyses that reach the conclusion that using natural gas for electricity generation is considered "renewable energy?" If so, please provide it.

A-19: a. The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

- b. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.
- c. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-20

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-20: Referring to Petition page 17 and the statement therein: "Air Emissions ...The proposed installation will have no substantial adverse environmental effect."

- a. Please explain why the Project's CO₂ emissions do not cause a substantial adverse environmental effect.
- b. Please explain the basis and assumptions for the calculation of the emissions listed in Table 1.
- c. Please provide an independent third-party analysis that supports the number of emissions listed in Table 1.
- d. Please explain why predicted NO_x emissions of 0.85 approximately 150 feet from a residential area is not a substantial adverse environmental effect on the inhabitants of that residential area.
- e. Please explain why predicted CO emissions of 0.42 approximately 150 feet from a residential area is not a substantial adverse environmental effect on the inhabitants of that residential area.
- f. Please explain why predicted VOC emissions of 0.42 approximately 150 feet from a residential area is not a substantial adverse environmental effect on the inhabitants of that residential area.
- g. Please explain why predicted CH₄ emissions of 0.42 approximately 150 feet from a residential area is not a substantial adverse environmental effect on the inhabitants of that residential area.
- h. Considering that CH₄ emissions are more than 80 times more damaging to the environment than CO₂ emissions, please explain why predicted CH₄ emissions of 0.42 is not a substantial adverse environmental effect.
- i. Please explain how CH₄ escapes into the air from the Project's operations.
- j. Please explain the amounts of benzene that are expected to be generated annually and provide your calculations and independent third-party analysis supporting your answer.

Interrogatory ARE-20

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- k. Please explain the amounts of lead that are expected to be generated annually and provide your calculations and independent third-party analysis supporting your answer.
 - l. Please explain the amounts of arsenic that are expected to be generated annually and provide your calculations and independent third-party analysis supporting your answer. m. Please explain the amounts of chromium that are expected to be generated annually and provide your calculations and independent third-party analysis supporting your answer.
 - n. Are PFOAs (Perfluorooctanoic acid) or other forever chemical compounds present or expected to be present in the emissions from the Project?
 - o. Are PFOAs or other forever chemical compounds present or expected to be present in the waste water from the Project?
 - p. Are PFOAs or other forever chemical compounds present or expected to be present in the fuel cell stacks from the Project?
 - q. Do you have any third-party independent report or analyses supporting you answers to 20n, 20o, and/or 20p? If so, please provide it.
- A-20:
- a-h. The December 17, 2020 Staff Report concluded that the project “[met] the air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect.”
 - i-q. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-21

NuPower Bridgeport FC, LLC

Witness:

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- Q-21: Referring to Petition page 20 and the statement therein: “The speakers produced overall Aweighted sound pressure of approximately 86 to 87 dBA at 5 meters and 77 to 84 dBA at 10 meters from the proposed fuel cell locations at ground level. Airborne noise from the speakers at nearby properties was measured at levels from 53 to 73 dBA. The highest property line measurement was 73 dBA at 571 Iranistan Avenue.”
- a. The Center for Disease Control states that: “Noise above 70 dB over a prolonged period of time may start to damage your hearing. Loud noise above 120 dB can cause immediate harm to your ears.” https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html. Please explain why the noise caused directly by the Project at levels above 70 dB is not a substantial adverse environmental impact to residents and others present in the area.
 - b. Please explain the noise impacts to residents and passerbys along the perimeter of the site when all fuel cells are operating.
- A-21: The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-22

NuPower Bridgeport FC, LLC

Witness:

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Q-22: Referring to Petition, Attachment M (which is the noise analysis prepared by Acoustical Technologies Inc) ("Noise Report"),

- a. Page 5 of the Noise Report states: "All of the measurements were made with the microphones and sound level meter at a height above ground between five and six feet." Page 8 of the Noise Report states: "Note: The speakers were raised to a height of about 10 feet above ground to provide a better path for sound to reach over the railroad tracks to the north (as shown in Figure 2)." The Petition at page 20 states: "The primary sources of noise for the proposed project are the dry air coolers located on the top floor of the structure." Page 8 of the Petition states: "The total height of the facility with the cooling fans will be approximately 70' 6" above ground level and approximately 84' 6" above mean sea level." Isn't the Noise Report's conclusions completely invalid because at a height of 10 feet above ground, transmission of noise is blocked or impeded by existing buildings and structures, and a result does not reflect sound transmission at 70 feet above ground level? If not, please explain why not.
- b. Page 9 of the Noise Report states: "Airborne noise at the residential zone locations to the north, north east and south east could not be heard when the speakers were operating due to the high background noise level from Interstate 95."
 1. Isn't it true that at ten feet above the ground that there are intervening structures between the source of the sound and the residential zone locations that block or impede the sound? If not, please explain why not.
 2. Isn't it true that those intervening structures would not block or impede that sound source at its true location of 70 feet above ground? If not, please explain why not.
 3. Isn't it true that the background noise from I-95 is much higher during the measurement period of 11am to 2pm as opposed to at night when residents sleep? If not, please explain why not.

Interrogatory ARE-22

NuPower Bridgeport FC, LLC

Witness:

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- c. Page 20 of the Noise Report states: “The P 11 residence at 720 Black Rock A venue is expected to see airborne noise levels of 62 dBA with all the fuel cells operating. Other homes along Black Rock Avenue should see similar airborne noise levels.” The World Health Organization (“WHO”) recommends that “[w]here noise is continuous, the equivalent sound pressure level should not exceed 30 dBA indoors, if negative effects on sleep are to be avoided. When the noise is composed of a large proportion of low frequency sounds a still lower guideline value is recommended, because low frequency noise (e.g. from ventilation systems) can disturb rest and sleep even at low sound pressure levels.” <https://www.who.int/docstore/peh/noise/Comnoise-4.pdf>. In light of the WHO’s recommendations, isn’t a 62db sound level for the Black Lane residents a substantial adverse environmental impact on them? If not, please explain why not.
- d. Page 20 of the Petition states: “NuPower has incorporated noise mitigation into the design of the Project in order to provide sufficient sound attenuation so the noise generated by the fuel cells will not exceed the 70 dBA industrial and 51 dBA residential limits.”
1. Do you have a report from a third-party that supports your assertion that with the proposed noise mitigation noise generated by the fuel cells will not exceed the 70 dBA industrial and 51 dBA?
 2. Please provide the plan that shows where the sound mitigation will be installed.
 3. Even if post-mitigation the sound levels are limited to 70 dBA industrial and 51 dBA residential at night-time, in light of the WHO’s recommendations noted above, aren’t those noise levels a substantial adverse environmental impact on nearby residents during usual sleeping hours?

Interrogatory ARE-22

NuPower Bridgeport FC, LLC

Witness:

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- e. Referring to A-CSC-9 and the statement: “The installation of sound attenuation walls is expected to reduce noise levels from the facility by approximately 12 to 14 dBA. NuPower has incorporated noise mitigation into the design of the project in order to provide sufficient sound attenuation so the noise generated by the fuel cells will not exceed the industrial and residential limits and be in compliance with the applicable City and State ordinances.”
 - 1. Please provide an independent report or analyses substantiating the claim that sound attenuation walls will reduce noise levels from the Project by approximately 12 to 14 dBA.
 - 2. If the noise from the Project with the sound attenuation walls reduces noise to the maximum noise levels permitted by law, is further development in the area that might cause or increase noise precluded or substantially adversely affected? If not, please explain why not.
 - f. While the Noise Report talks about maximum levels of noise to residents in certain areas as a result of the operation of the Project, nowhere in the Noise Report is there a discussion of the *increase in noise levels* residents would experience as a result of the Project. Why not?
 - g. What are the hourly projected increases in noise levels to residents in the area from the Project?
 - h. Please explain your assumptions used for your answer to 22g.
- A-22: a-h. The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-23

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- Q-23: Referring to Petition page 24 and the statement therein: “The Project represents a clean and safe method of electricity generation in a manner consistent with federal and state policies to protect public health and safety.”
- a. Please explain what you mean by “clean.”
 - b. Do you contend that using natural gas as a fuel for the project is “clean”?
 - c. Please explain why you are not using renewable hydrogen as fuel for the Project.
 - d. Please list any independent third-party, science-based analyses that reach the conclusion that using natural gas as a fuel for electric generation is a “clean” method of electricity generation.
- A-23: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-24

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- Q-24: Referring to Petition page 24 and the statement therein: "In terms of public health the Project will generate electricity in a cleaner and more environmentally acceptable manner compared to conventional generation such as nuclear, combustible natural gas, coal or oil as fuel."
- a. Please explain why you omitted a comparison to solar energy.
 - b. Please explain why you omitted a comparison to wind energy.
 - c. Please explain how the Project will generate electricity compared to your assumptions 10 regarding solar or wind generation used in your answer to JP-8.
 - d. Please explain your comparison to combustible natural gas. In particular, please explain what type of natural gas plant you are using for your comparison.
 - e. Please explain your comparison to nuclear energy.
- A-24: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-25

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- Q-25: Referring to Petition page 26 and the statement therein: "The Project will not pose any safety concerns or hazards to the general public."
- a. Do you not consider hours of Project induced ice and fog on I-95 a safety concern or hazard to the general public? If not, please explain.
 - b. Do you not consider the noise generated by the Project a safety concern or hazard to the general public? If not, please explain.
 - c. Do you not consider the emissions generated by the Project a safety concern or hazard to the general public? If not, please explain.
 - d. Do you not consider the hazardous materials generated by the Project a safety concern or hazard to the general public? If not, please explain.
 - e. Do you not consider the CO2 emissions generated by the Project a safety concern or hazard to the general public? If not, please explain.
- A-25: a. The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-25

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- b. The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.
- c-e. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-26

NuPower Bridgeport FC, LLC

Witness:

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Q-26: Referring to Petition page 26 and the statement therein: "Given the site's unique location, NuPower does not anticipate that the Project will have a significant impact on traffic flow?"

- a. Is NuPower committing to ensure that all vehicles related to the construction of the facility will not park or stand on the public streets around or nearby the project site?
- b. Explain how the above statement is consistent with the Trinity Consultants' report that the Project's vapor plume will increase fog and ice on I-95?

A-26: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-27

NuPower Bridgeport FC, LLC

Witness:

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- Q-27: Referring to Petition page 26 and the statement therein: "Any potential construction-related traffic will be temporary and restricted to the Project's approximately 18-month construction period."
- a. Please provide a description of the anticipated construction related traffic.
 - b. Please provide a description of the route that construction related traffic will use to get to the Project site.
- A-27: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-28

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-28: Referring to Petition page 26 and the statement therein: "No raw or hazardous materials or fuels will be delivered to or stored at the Property."

a. Please reconcile that statement with the chemical compounds that result from the processing of natural gas for use by the Project.

A-28: During the processing of natural gas to be used by the Project, specifically, the desulfurization of natural gas, sulfur (which is added to natural gas by the gas company for safety reasons) and other byproducts will be removed from natural gas and stored in sealed vessels. These vessels will then be taken off-site and transported by a licensed hazardous waste transporter to an approved disposal facility. At which point, the sulfur and byproduct materials will either be regenerated or properly disposed of, and the vessels returned to Doosan for reuse. Consequently, the only hazardous materials that will be present on-site, albeit inside a properly sealed space, will be sulfur and other byproducts of the desulfurization process.

Interrogatory ARE-29

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-29: Referring to Petition page 27 and the statement therein: "The Project will not impact the public health and safety of the Property or that of the area surrounding the Property."

- a. Do you not consider hours of Project induced ice and fog on I-95 an impact to the public health and safety? If not, please explain.
- b. Do you not consider the noise generated by the Project an impact to the public health and safety? If not, please explain.
- c. Do you not consider the emissions generated by the Project an impact to the public health and safety? If not, please explain.
- d. Do you not consider the hazardous materials generated by the Project an impact to the public health and safety? If not, please explain.
- e. Do you not consider the CO₂ emissions generated by the Project an impact to the public health and safety? If not, please explain.

A-29: See response to Interrogatory ARE-25.

Interrogatory ARE-30

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-30: Explain how Petition, Attachment J, which is a determination made almost 15 years ago under California's then existing law, is relevant to the Petition and the construction and operation of the Project in Connecticut?

A-30: The document certifies that the model unit meets the specified air emission standards and the certification was granted in 2018. It is referenced for purposes of showing that the proposed units are certified to meet the listed standards, not so much that they meet California standards.

Interrogatory ARE-31

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-31: Referring to Attachment CSC-6-1, please provide the excel spreadsheet in native format with all functions intact that supports the numbers shown in Attachment CSC-6-1.

A-31: The Emissions Balance table shown in Attachment CSC-6-1 is a report generated by Doosan's highly proprietary economic feasibility and analysis tool which cannot be disclosed. The United States EPA Emissions & Generation Resource Integrated Database (eGRID) is used as a basis to calculate grid emissions of NO_x, CO₂ and SO_x needed to deliver 9.66MW in the NEWE region (labeled Grid Avoided Emissions in the table). The fuel cell emissions associated with producing 9.66MW of power (labeled Fuel Cell Electric without thermal loop in the table) are subtracted from the Grid Avoided Emissions. The result is the reduction of NO_x, CO₂ and SO_x which is labeled BALANCE in the table.

Interrogatory ARE-32

NuPower Bridgeport FC, LLC

Witness: Dave Flanagan

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Q-32: Referring to Attachment CSC-6-1, please provide all assumptions used in the calculation of the numbers shown therein, and the documentation supporting those assumptions.

A-32: Grid emissions are calculated using EPA eGRID data published for the NEWE region. The grid emissions are based on the grid producing 9.66 MW with a 4.88% grid transmission & distribution loss (also published by EPA). Fuel Cell emissions are based on the fuel cell system producing 9.66 MW.

Interrogatory ARE-33

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-33: Describe how the hazardous materials that collect in the stacks will be handled and disposed of.

A-33: Hazardous materials will not collect in the stacks.

Interrogatory ARE-34

NuPower Bridgeport FC, LLC

Witness:

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Q-34: Will you agree to a deposition of Trinity Consultants by Allco?

A-34: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-35

NuPower Bridgeport FC, LLC

Witness:

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Q-35: Will you agree to a deposition of Acoustical Technologies Inc by Allco?

A-35: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-36

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-36: Do you agree the addition of CO₂ emissions from the Project would pollute, impair or aid in destroying the air, water or other natural resources of the State of Connecticut? If not, please explain why not.

A-36: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-37

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-37: Do you agree that the area for the proposed Project is an environmental justice community? If not, please explain why not.

A-37: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-38

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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- Q-38: Do you agree that the residential area surrounding and affected by the proposed Project has one of the highest incidents of emergency room hospital visit rates for asthma in the State of Connecticut? If not, please explain why not.
- A-38: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-39

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-39: Do you agree that the residential area surrounding and affected by the proposed Project has one of the highest incidents of hospitalizations for asthma in the State of Connecticut? If not, please explain why not.

A-39: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-40

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-40: Have you examined how a facility like the Project can affect communities that already have high rates of emergency room visits and hospitalizations for asthma? If not, please explain why not.

A-40: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-41

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-41: Do you agree that communities that experience high rates of emergency room visits and hospitalizations for asthma have justifiable safety concern with projects such as the Project? If not, please explain why not.

A-41: Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-42

NuPower Bridgeport FC, LLC

Witness:

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- Q-42: Do you agree with the statement: "Climate change poses an existential threat to humanity." William Tong, *State of Connecticut v. Exxon Mobil Corp.*, HHD-CV20- 6132568-S (Conn. Sup. Ct. filed Sept. 14, 2020) No. 100.31 at P1. If not, please explain why not.
- A-42: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-43

NuPower Bridgeport FC, LLC

Witness:

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- Q-43: Do you agree with the statement: Connecticut is already suffering from “sea level rise, flooding, drought, increases in extreme temperatures and severe storms, decreases in air quality, contamination of drinking water, increases in the spread of diseases, and severe economic consequences.” *Id.* at P17. If not, please explain why not.
- A-43: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council’s review of the project and the approval sought by NuPower.

Interrogatory ARE-44

NuPower Bridgeport FC, LLC

Witness:

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- Q-44: Do you agree with the statement: “[C]limate change will continue to have increasingly serious, life-threatening, and financially burdensome impacts on the people of Connecticut and the lands, waters, coastline, species, natural resources, critical ecosystems, infrastructure and other assets owned by the State and its political subdivisions.” *Id.* At P23. If not, please explain why not.
- A-44: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council’s review of the project and the approval sought by NuPower.

Interrogatory ARE-45

NuPower Bridgeport FC, LLC

Witness:

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Q-45: Do you agree with the statement: "Credible scientific evidence indicates- especially considering recent extreme weather events-that the catastrophic effects of climate change are occurring sooner than anticipated." *Id.* at P172. If not, please explain why not.

A-45: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-46

NuPower Bridgeport FC, LLC

Witness:

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- Q-46: Do you agree with the statement: "Climate change has negatively impacted, is negatively impacting, and will continue to negatively impact Connecticut's people, lands, waters, coastline, infrastructure, fish and wildlife, natural resources, critical ecosystems, and other assets owned by or held in the public trust by the state of Connecticut and/or its municipalities." *Id.* at 173. If not, please explain why not.
- A-46: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-47

NuPower Bridgeport FC, LLC

Witness:

Petition No. 1406A

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- Q-47: Do you agree with the statement: "Climate change has caused, is causing, and will cause sea level rise, flooding, drought, an increase in extreme temperatures, a decrease in air quality, an increase in severe storms, contamination of drinking water, and an increase in certain disease-transmitting species." *Id.* at 174. If not, please explain why not.
- A-47: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-48

NuPower Bridgeport FC, LLC

Witness:

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Q-48: Do you agree with the statement: "As a result of the negative impacts on Connecticut's environment, climate change has caused, is causing, and will cause an increase in illness, infectious disease and death." *Id.* at 175. If not, please explain why not.

A-48: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-49

NuPower Bridgeport FC, LLC

Witness:

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- Q-49: Do you agree with the statement: "As a result of the negative impacts on Connecticut's environment, climate change has caused, is causing, and will cause serious damage to existing infrastructure, including but not limited to coastal and inland development, roadways, railways, dams, water and sewer systems, and other utilities." *Id.* at 176. If not, please explain why not.
- A-49: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-50

NuPower Bridgeport FC, LLC

Witness:

Petition No. 1406A

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- Q-50: Do you agree with the statement: "As a result of the negative impacts on Connecticut's environment, climate change has caused, is causing, and will cause serious detrimental economic impacts on the State of Connecticut, its people, businesses and municipalities, including but not limited to heat-related productivity losses, increased energy cost and consumption, and agriculture, tourism, and recreation losses." *Id.* at 177. If not, please explain why not.
- A-50: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-51

NuPower Bridgeport FC, LLC

Witness:

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- Q-51: Do you agree with the following statement in the DEEP Brief regarding the Project: “bringing this project on line would increase carbon dioxide emissions when compared with the expected emissions from the grid over the next 20 years, causing Connecticut to backslide on its climate goals.” If not, please explain why not.
- A-51: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council’s review of the project and the approval sought by NuPower.

Interrogatory ARE-52

NuPower Bridgeport FC, LLC

Witness:

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- Q-52: Do you agree with the following statement in the DEEP Brief regarding the Project: "Connecticut's Global Warming Solutions Act requires the state to reduce greenhouse gas emissions by 10% below 1990 levels by 2020 and 80% below 2001 levels by 2050. Conn. Gen. Stat. § 22a-200a. The proposed project undermines the state's ability to meet those statutory targets. Procurement of generation projects that increase carbon emissions is not in the long-term interest of ratepayers." If not, please explain why not.
- A-52: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.

Interrogatory ARE-53

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

Petition No. 1406A

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Q-53: Referring to page 9 of the Petition, you reference an underground nitrogen tank within the Plant, can you please explain what this is and what its function is?

A-53: Upon further review, due to space limitations, the installation of an underground nitrogen tank storage system was moved to above ground.

Interrogatory ARE-54

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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Q-54: Referencing page 6 of the April 7, 2021 motion, there is mention of an "Excess Flow Valve." Is the petitioner aware of any cases where such valves have malfunctioned? If so, please provide all such examples known to petitioner.

A-54: No.

Interrogatory ARE-55

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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Q-55: Referencing page 6 of the April 7, 2021 motion, there is mention of an "Excess Flow Valve." Has the petitioner investigated under what conditions such valves have malfunctioned? If not, please explain why not.

A-55: NuPower is not aware of any cases of malfunction.

Interrogatory ARE-56

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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Q-56: Referencing page 7 of the April 7, 2021 motion, there is mention of an "Earthquake Valve." Is the petitioner aware of any cases where such valves have malfunctioned? If so, please provide all such examples known to petitioner?

A-56: No.

Interrogatory ARE-57

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

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Q-57: Referencing page 7 of the April 7, 2021 motion, there is mention of an "Earthquake Valve." Has the petitioner investigated under what conditions such valves have malfunctioned? If not, please explain why not.

A-57: No.

Interrogatory ARE-58

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

Petition No. 1406A

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Q-58: What would cause the Earthquake valves to shut the flow of the natural gas?

A-58: Seismic activity.

Interrogatory ARE-59

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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Q-59: Have you prepared or commissioned a report to look at the increased health risks, particularly to those with asthma, that the Project would impose upon nearby residents? If not, please explain why not. If yes, please provide a copy of such report(s).

A-59: No. Pursuant to Conn. Gen. Stat. Section 16-1(a)(20) fuel cells are a Class I renewable energy source.

Interrogatory ARE-60

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

Petition No. 1406A

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Q-60: Reference Interrogatory JP-7, you responded "No" to the question of whether the presence of sulfur in the fuel cell process will cause any odor during the operation and maintenance of the Plant. Please explain how sulphur does not emit odor to the surrounding areas?

A-60: During the desulfurization process, sulfur (which is added to natural gas by the gas company for safety reasons) will be removed from the natural gas and stored in a closed vessel. The byproducts of the desulfurization process, stored in the enclosed vessel, will then either be regenerated off-site or safely disposed of. At no point during the desulfurization process and/or subsequent disposal of byproduct materials, will sulfur be released into the air. For this reason, no sulfur odors are expected during the operation and maintenance of the Plant.

Interrogatory ARE-61

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-61: Where does the water discharge from the Project go?

A-61: The relatively small amount of water discharge from the site will be discharged as clean water into the storm system.

Interrogatory ARE-62

NuPower Bridgeport FC, LLC

Witness:

Petition No. 1406A

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Q-62: Referring to Petition page 7 and the statement: “The fuel cells are factory-assembled and tested prior to shipment and will have an operational life of 20 years.”

- a. What happens to the fuel cells after 20 years?
- b. What components have a different operational life and how are those components handled during the twenty-year operational life of the Project?

A-62: The basis of Allco’s request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, “In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state.” NuPower objects to this interrogatory since it is not related to the Project’s potential impact on air, water or natural resources of the state.

Interrogatory ARE-63

NuPower Bridgeport FC, LLC

Witnesses: Dave Flanagan
and Daniel Donovan

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- Q-63: Referring to your answer to JP-8 and the statement: “The natural gas fuel source for the fuel cell is uninterrupted but the same is not true for solar and wind. The typical availability of a solar facility is 17% and the typical availability of wind is 25%. This means a fossil fuel power plant must operate 83% of the time to backfill the solar production gap and 75% of the time to replace the wind production gap. This results in the release of 3,450 tons of CO₂ per MW annually or 82 tons more compared to the fuel cell system to cover the down-time associated with solar and the release of 3,118 tons of CO₂ per MW annually or 250 tons less compared to the fuel cell system to cover the down-time associated with wind.”
- a. Please provide all documents on which you relied for your calculation of the numbers provided in your answer to JP-8.
 - b. Please provide the excel spreadsheet in native format with all functions intact that shows the calculations of the numbers provided in your answer to JP-8.
 - c. Please explain why you believe a comparison to a fossil fuel plant is the appropriate comparison in your answer to JP-8.
 - d. Please explain how your answer to JP-8 recognizes that much of Connecticut’s electricity comes from the zero-carbon Millstone plant.
 - e. Do you dispute that the Millstone plant provide electricity with zero-carbon emissions? If yes, please explain.
 - f. Do you dispute that the Millstone plant in 2020 provided 79% of the electricity in Connecticut used by standard service customers and customers of last resort? If yes, please explain.
 - g. Is the Project intended to run 24 hours per day, seven days per week, subject to availability? If not, please explain why not and when it is expected to run.
 - h. Is the Project, intended to act as a peaking plant to produce only when solar and wind is less available? If not, please explain and please explain why using the intermittency of solar in your answer to JP-8 is appropriate and relevant to the operation of the Project.

Interrogatory ARE-63

NuPower Bridgeport FC, LLC

Witnesses: Dave Flanagan
and Daniel Donovan

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- i. Please explain how your comparison to a natural gas plant is in your answer to JP-8 is valid or appropriate in light of the fact that gas peaker plants only operate a few hours per year.
- j. Why is your comparison in your answer to JP-8 appropriate when the Project and the comparison plant both use natural gas?
- k. How do you reconcile your availability factor for wind with the claim of General Electric of a 60-64% capacity factor for its offshore wind turbine? <https://www.ge.com/renewableenergy/wind-energy/offshore-wind/haliade-x-offshoreturbine>.
- l. Why does your comparison not take into account battery storage?
- A-63: a. The Year 10 RFP for the Connecticut LRECZREC program which was issued on April 30, 2021 states the capacity factor of Solar PV (AC)- Fixed tilt is 16.9% and the capacity factor for wind is 20.0%. [.https://www.uinet.com/wps/wcm/connect/www.uinet.com-7188/6c8133e3-1400-479c-b51f-244389f50a2c/Year+10+LREC+ZREC+RFP.pdf?MOD=AJPERES&_amp;CACHEID=ROOTWORKSPACE.Z18_J092I2G0N01BF0A7QAR8BK20A3-6c8133e3-1400-479c-b51f-244389f50a2c-nAVceUI.pdf](https://www.uinet.com/wps/wcm/connect/www.uinet.com-7188/6c8133e3-1400-479c-b51f-244389f50a2c/Year+10+LREC+ZREC+RFP.pdf?MOD=AJPERES&_amp;CACHEID=ROOTWORKSPACE.Z18_J092I2G0N01BF0A7QAR8BK20A3-6c8133e3-1400-479c-b51f-244389f50a2c-nAVceUI.pdf)
- b. See Attachment ARE-63-1.
- c. The comparison of the fuel cell to a fossil fuel plant is appropriate because Mr Provey asked how the Project CO₂ emissions would compare to Harbor Station No. 5.
- d. ISO New England reports the metered electrical generation by fuel type on a weekly basis in their Weekly Market Performance Report. For the full year 2020, the Millstone plant provided only 27% of the electrical generation according to the ISO New England. During that same time fossil fuels provided the vast majority of the power at 53% of the electrical generation while solar and wind contributed 2% and 4% respectively. (<https://www.iso-ne.com/about/key-stats/resource-mix/>)

Interrogatory ARE-63

NuPower Bridgeport FC, LLC

Witnesses: Dave Flanagan
and Daniel Donovan

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- e. No.
- f. See response to Interrogatory ARE-63d.
- g. Yes the fuel cell system intended to run 24 hours per day, seven days per week, subject to occasional maintenance.
- h. The fuel cell system is not operating as a peaking plant. The statement that rightfully asserts the fuel source for fuel cells is not interruptible but the fuel source for solar and wind is interruptible is relevant because the grid must cover the production gap when solar and wind are inoperable which produces green house gasses.
- i. The answer to JP-8 is appropriate because Mr Provey asked how the Project CO₂ emissions would compare to Harbor Station No. 5. Since the fuel cell system is not a peaker, it was our understanding that Mr Provey was interested in understanding how a continuously running fuel cell would compare to a continuously running gas fired power plant. Comparing a continuously operating fuel cell system to a gas peaker plant service is not relevant.
- j. The answer to JP-8 is appropriate because Mr. Provey asked how the Project CO₂ emissions would compare to Harbor Station No. 5. The answer compares the fuel cells system CO₂ emissions to the projected Harbor Station No. 5 CO₂ emissions.
- k. The Year 10 RFP for the Connecticut LREC/ZREC program issued on April 30, 2021 states the capacity factor of wind is 20.0%.
- l. Mr. Provey asked about solar, wind and Harbor station. He did not ask about battery storage. Furthermore, although battery storage energy systems (BESS) are an exciting concept, the Connecticut market does not have the financial support necessary for such large-scale BESS projects. NuPower is actively developing BESS projects in New England. Based on our experience, Connecticut and ISO New England policies are in a very early stage and have not reached a level that provides the necessary structure for

Interrogatory ARE-63

NuPower Bridgeport FC, LLC

Witnesses: Dave Flanagan
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independent developers of BESS projects. Upcoming Federal legislation may also begin to support the roll out of large-scale BESS projects. Until this occurs only states with aggressive battery storage programs will be able to support the independent development of a BESS market.

Interrogatory ARE-64

NuPower Bridgeport FC, LLC

Witness:

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Q-64: Dual-fuel (hydrogen and natural gas) projects are being constructed even in coal-friendly States for commercial operation in 2025 with a starting mix of 30% hydrogen. See, e.g., <https://www.bv.com/news/black-veatch-supporting-western-power-agency-first-hydrogencapable-combined-cycle-units>. Why is the Project not committing to use a minimum level of hydrogen as a fuel source?

A-64: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-65

NuPower Bridgeport FC, LLC

Witness:

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- Q-65: Will the Project participate in the ISO-NE market for ancillary services such as regulation, ten-minute synchronized reserves (TMSR), ten-minute non-synchronized reserve (TMNSR); and thirty-minute operating reserves (TMOR)? If not, explain why not. If yes, explain what ancillary services the Project will provide.
- A-65: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-66

NuPower Bridgeport FC, LLC

Witness:

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Q-66: Do you contend that New England has inadequate capacity resources to meet demand? If yes, please explain. If not, please explain why the Project is necessary.

A-66: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-67

NuPower Bridgeport FC, LLC

Witness:

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- Q-67: Please explain why the Project is necessary in light to the Siting Council's approval of the Killingly Energy Center ("KEC") in docket 470B.
- A-67: The basis of Allco's request for participant status in this proceeding was CGS Section 22a-19(a)(1) that provides, in part, "In any administrative, licensing or other proceeding ... any person ... may intervene as a party on the filing of a verified pleading asserting that the proceeding or action for judicial review involves conduct which has, or which is reasonably likely to have, the effect of unreasonably polluting, impairing or destroying the public trust in the air, water or other natural resources of the state." NuPower objects to this interrogatory since it is not related to the Project's potential impact on air, water or natural resources of the state.

Interrogatory ARE-68

NuPower Bridgeport FC, LLC

Witness: Dan Donovan

Petition No. 1406A

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- Q-68: The Siting Council made a factual finding (number 120) in Docket 470B, order of June 6, 2019, that on a megawatt equivalent basis, a fuel cell project would result in far greater environmental impacts than the KEC. Do you dispute that finding? If so, please explain. If not, please explain why the Project is needed.
- A-68: To be accurate, Finding of Fact 120 in Docket No. 470B says, "In addition to solar and wind, fuel cells are also considered a Class I renewable energy source in Connecticut per CGS § 16-1. Fuel cells were considered by NTE as an alternative, but dismissed due to their lack of proven operation at a sufficiently large scale. For example, the 63.3 MW fuel cell facility approved by the Council in Petition No. 1184 was, at the time, among the largest fuel cell proposals in the world. Site impacts include about 13.7 acres of land and water consumption is approximately 300,000 gallons per day (gpd). For a fuel cell project to generate approximately 650 MW, would result in far greater impacts than KEC. (NTE 4, response 4, CGS § 16-1)."

Interrogatory ARE-69

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-69: Please provide a list of the hazardous materials that are expected to be in the Cell Stack Assembly ("CSA") and the Integrated Low-Temperature Shift Converter ("ILS").

A-69: Phosphoric acid Class 8, UN3244, PGII, is an integral part of the fuel cell system, acting as the electrolyte within the fuel cell stack. Phosphoric acid is a surprisingly common substance that is contained in common cola drinks. A leak of phosphoric acid is not possible because there is no reservoir of liquid: A total of 1200 Lbs. of phosphoric acid is constrained within the porous structure of the fuel cell stack material by capillary action.

The ILS is a tank containing 900 Lbs. of a self-heating solid catalyst composed of copper, zinc oxide, and alumina. The product contains design protections to prevent self heating within the power plant. CLASS 4.2, UN3190, PGII.

Interrogatory ARE-70

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-70: Please provide the annual quantity of each hazardous material that is expected to be generated by the Project and lodged in the CSA.

A-70: There are no hazardous materials lodged in the CSA during operations.

Interrogatory ARE-71

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

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Q-71: Please provide the annual quantity of each hazardous material that is expected to be generated by the Project and lodged in ILS.

A-71: No additional hazardous materials are expected to be lodged in the ILS during the operation of the fuel cell.

Interrogatory ARE-72

NuPower Bridgeport FC, LLC

Witness: Walter Bonola

Petition No. 1406A

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Q-72: Please provide the annual quantity of each hazardous material generated by the Project that is expected to escape into the atmosphere.

A-72: Other than the materials listed in Table 1 of the Petition, there are no hazardous materials expected to escape into the atmosphere.

Interrogatory ARE-73

NuPower Bridgeport FC, LLC

Witness:

Petition No. 1406A

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Q-73: Please provide independent third-party reports that support your answers to 69, 70, 71 and 72.

A-73: NuPower objects to this interrogatory because it seeks information that is not relevant and not likely to lead to the discovery of admissible evidence which will assist the Council's review of the project and the approval sought by NuPower.