Memorandum

To: Energy Efficiency Board

CC: Executive Secretary, James Williamson

From: Stacy Sherwood and Technical Consultant Team

Date: 12/7/2023

Re: District Heating System Incentive

In the November 1, 2023 filing on behalf of the Companies, Southern Connecticut Gas (“SCG”) included a request for the Department of Energy and Environmental Protection (“DEEP”) and the Connecticut Energy Efficiency Board (“EEB”) to approve the projected incentive for a district hearing system and for DEEP to approve a funding source and defined mechanism of collection.[[1]](#footnote-1)

According to Public Service Companies Chapter 283 Section 15-258d, both the EEB and DEEP must jointly approve or disapprove the proposed program plan.[[2]](#footnote-2) This is the first time that a project has requested the incentive and currently there is no incentive approved as part of the 2022-2024 Conservation and Load Management (“C&LM”) Plan. NuPower Bridgeport FC, LLC (“NuPower) has proposed a thermal loop project, to be located in Bridgeport, Connecticut, that will displace gas for 22 buildings that will be connected to the loop. To determine the incentive level for a district heating system, SCG and United Illuminating engineers utilized the 2022 Commercial & Industrial Net Present Value (“NPV”) Screening Tool with the Avoided Energy Supply Cost 2021 avoided cost study, and demand pricing induced pricing effect (“DRIPE”) values. Based on those calculations, SCG is proposing an incentive of $0.741 per lifetime CCF-NPV. It is estimated that over the projected 14-year life of the thermal loop, the system will displace 7,559,038 ccf (100 cubic feet) of natural gas. Using that incentive value, that is then divided by the 1.46 benefit cost ratio target for 2022, the overall project incentive for the NuPower Thermal Loop is estimated to be $3,836,470.

Specifically, the language states that the approval is for the program plan and does not specify individual projects. District heating loop incentives must meet the following parameters:

* Incentive payment based on the customer’s projected natural gas demand reduction for the period the customer commits to utilize the services of the heating system.
* Projected natural gas demand reduction is based upon the customer’s weather-adjusted historical usage data from the previous three years.
* Incentive payment goes to the end use customer.
* The incentive payment made to the end use customer cannot exceed the incentive payment made for equivalent natural gas demand reductions through the C&LM.
* The owner or operator of the heating system may charge each end use customer a connection charge up to an amount equal to the incentive payment received by the end use customer.

The Technical Consultants worked with Avangrid and Eversource to evaluate whether the incentive methodology being proposed met the requirements in the statute. Specifically, the Technical Consultants were concerned as to whether the methodology would ensure that the incentive met the following requirement:

The amount of the incentive payment made to such end use customer shall not exceed the incentive payment made for equivalent natural gas demand reductions through the state’s conservation and load management program.

Through discussions, it was determined that the same incentive payment established for the Energy Opportunities (“EO”) program would be best to ensure that the incentive paid for any district heating system project would not exceed incentive payments paid to other participants. Currently, the EO program offers a maximum natural gas incentive of $4 per annual ccf for non-lighting measures in existing buildings. While there is an overall incentive cap per customer on EO program incentives, given the magnitude of the district heating system and the fact that the statute put a cap on annual cost recovery for district heating programs that the incentive cap can be exceeded. Furthermore, the annual incentive caps are set by the Companies due to the fact that is a cap on the annual spending from conservation adjustment mechanism revenue.

Avangrid recommended that the heat exchanger measure life from Program Savings Document (“PSD”) be used as the measure lifetime to estimate district heating lifetime savings, as it functions the closest to a heating district system. While we recognize that the lifetime of a district heating system is likely longer, we believe that it is best to use assumptions established for the C&LM programs, given the statute language. Both Avangrid and Eversource are in agreement with the incentive level and measure life. Using these assumptions, the incentive payment for the NuPower project would be $2,167,124. This is approximately $1.68 million less than the incentive proposed by Avangrid’s original methodology.

In developing our recommendation for the EEB, here are some items that we have considered.

1. The incentive being approved or disapproved is for district heating loops and not for the specific NuPower project discussed in Appendix D of the plan.
2. The project is being funded outside of the C&LM plan. Therefore, the savings should not count towards achievement of the goals, nor should it be considered in terms of determining SCG’s performance management incentives (“PMI”).
3. The incentive will be paid through a mechanism above the Conservation Adjustment Mechanism that funds the Conservation and Load Management programs and will not impact the Plan budgets, either in 2024 or in a future year when the incentive is paid out.
4. Currently, natural gas reductions are included as part of the statute detailing the C&LM goals and those reductions are incentivized through the C&LM programs. While it is unclear where the C&LM programs will be at the time the incentive will be paid the Companies are signing agreements to pay natural gas incentives through at least January 1, 2025, regardless of when the incentives are paid. This process is typical for long-term projects that the Companies contract.
5. SCG determined the incentive amount based upon a 14-year lifetime, supported by the PSD.
6. The Technical Consultants worked with Avangrid and Eversource to ensure that the methodology to determine the incentive followed the statute requirements.

Based upon these considerations, the Technical Consultants recommend that the EO program incentive of $4 per annual ccf, should be used as the incentive methodology for district heating systems. If the EEB votes to approve the incentive, it should be recognized that it was done on the knowledge that it would not impact future C&LM budgets and that the savings resulting from this project shall not be counted towards SCG’s achievement of its C&LM goal nor should it be considered as part of SCG’s performance management incentive.

1. Companies include Eversource Electric, Eversource Gas, ( United Illuminating, Connecticut Natural Gas, and Southern Connecticut Gas. [↑](#footnote-ref-1)
2. <https://www.cga.ct.gov/current/pub/chap_283.htm>. [↑](#footnote-ref-2)