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Witness: Edward A. Davis, Kimberly R. Parsons, Matthew Nelson and Michael Goldman
Request from: Conservation Law Foundation

Question:

(SPACE HEATING RATE) Why is the Company proposing that Rate 6 will only be available for R1 customers who install a new heat pump system after January 1, 2026? What rate design or revenue design goal is satisfied by limiting Rate 6 eligibility to such customers?

Response:

As discussed in the Company's responses to interrogatories CLF-002[i], and CLF 003[ii], Rate 6 is designed as a targeted affordability measure, a pathway for customers making the conversion decision from delivered fuels, not as a statewide electrification program.

The rate is intended to both influence the conversion decision at the margin and to add incremental load that contributes to cost recovery. Extending the discounted rate to existing customers who installed heat pumps before the rate existed would produce no incremental adoption and no incremental load; it would simply reduce revenue collected on existing consumption and shift recovery of that revenue to other customers.

Providing a discount to customers who already converted would not be a system wide affordability measure; rather, it would merely be an individual customer discount, which the Company's design deliberately avoids. Limiting eligibility to new installations is the residential analogue of the incremental-load requirement in the Company's proposed economic development rates: the rate is reserved for new load and conversions that will ultimately provide appropriate cost recovery. Customers who already converted elected to do so based on the economic circumstances at the time of their installation.

Prior Referenced Responses:

[i] CLF-002 Question:

(SPACE HEATING RATE) Please refer to Exhibit CLP-RATES-1, at 32, lines 7-8: "Rate 6 will be available to any residential customer that currently heats with a delivered fuel heating system and demonstrates that it has installed air-source heat pump(s) or any new home build after July 1, 2027, that can demonstrate that they have installed air- source heat pump(s) for home space heating. "

a. Please provide the definition of a "delivered fuel heating system" the Company would use to determine customer eligibility for Rate 6.
b. Is a heating system using natural gas considered a "delivered fuel heating system"? If not, why not?
c. Please provide copies of all notes, memorandum, reports, e-mails and text messages which discuss, reference, or conclude: 1) whether to include or exclude natural gas heating systems within the definition of a "delivered fuel heating system"; and/or 2) whether to provide eligibility for the new Rate 6 rate to Rate 1 customers who replace a natural gas heating system with an electric heat pump.
d. Why are new or existing geothermal heat pump customers not eligible for the proposed rate?
e. If a customer becomes eligible for and takes service under Rate 6, and subsequently either sells the dwelling or rents it, will the new owner or tenant remain eligible for Rate 6? If not, why not?
f. If a customer in a single dwelling unit becomes eligible for and takes service under Rate 6 and subsequently converts the property to multiple dwelling units, will the customers in the new multiple dwelling units remain eligible for Rate 6? If not, why not?

CLF-002 Response:

a. A “delivered fuel heating system” is intended to refer to a heating system that runs on a fuel source like heating oil or propane, which is brought to the property by a truck and pumped into an on-site storage tank, rather than flowing through a permanent underground utility line. A heating system using natural gas is not considered a delivered fuel heating system because it does not meet this definition.

b. The Company deliberately excluded natural gas heating conversions from Rate 6 eligibility because Rate 6 is an affordability measure not a general electrification incentive. The rate is targeted at conversions that reduce the customer’s total household energy costs. For customers heating with oil or propane, the highest-cost and most price-volatile heating fuels in Connecticut, conversion to an air-source heat pump generally lowers total annual heating expense, and Rate 6 further supports that outcome.

   For customers heating with natural gas, conversion to a heat pump typically increases the household’s total energy bill at current prices. The Company is cognizant of the real affordability challenges for customers in Connecticut and therefore designed the rate to avoid encouraging conversions that would likely result in higher customer household energy. While natural gas conversions may produce emissions benefits, Rate 6 is designed to deliver bill savings, and eligibility was scoped accordingly.

c. The Company does not have reports on its decision to limit Rate 6 to delivered fuel conversions but refers to the pre-filed testimony set forth in Exhibit CLP-IAP-1, which focused on Investment & Affordability Policy, demonstrating the Company’s strong emphasis in submitting proposals designed to address affordability.

d. Geothermal customers were not included in the eligibility for Rate 6 because Rate 6 is designed around the operating profile of air-source heat pumps, which experience declining efficiency and materially higher electricity consumption during the coldest portions of the heating season. This is the seasonal bill escalation the rate is designed to mitigate. Ground source systems maintain substantially higher and more stable cold-weather efficiency, so the winter bill impact Rate 6 addresses is far less pronounced for those customers. As DEEP describes, a geothermal system is more efficient than air-source heat pumps and far more efficient than systems relying on combustion of fossil fuels, and because it has relatively modest maintenance requirements, its operating cost typically is quite low, enabling homeowners and businesses to reduce their monthly expenses (see https://portal.ct.gov/deep/energy/renewable-energy/geothermal).

   Ground source installations also carry substantially higher upfront costs, however, meaning a volumetric rate discount may not provide a significant enough incentive for adoption. Air-source heat pump technology represents

the overwhelming majority of Connecticut residential heat pump installations; focusing eligibility on air-source heat pumps simplifies verification and administration. It should also be noted that there are energy efficiency incentives through Energize CT for ground source heat pumps, with the current incentive levels for ground source heat pumps being higher than air source heat pumps, in recognition of the initial upfront capital hurdle for ground source heat pumps.

e. If a customer becomes eligible for and takes service under Rate 6, and subsequently either sells the dwelling or rents it, the new owner or tenant will remain eligible for Rate 6 because the rate will be attached to the meter. Additionally, the rate will continue to encourage the customer to use their heat pumps for space heating. This promotes affordability for the customer, encourages overall stable winter load for the grid, and supports climate goals.

f. If a customer in a single dwelling unit becomes eligible for and takes service under rate 6 and subsequently converts the property to multiple dwelling units, the new service configuration will need to be evaluated before determining whether the new dwelling unit(s) will remain eligible for Rate 6.

[ii]CLF-003 Question:

(SPACE HEATING RATE) Proposed Rate 6 is described as "designed to provide a discounted rate for the incremental usage of residential electric service customers who adopt new electric air source heat pump technologies for space heating purposes? " Exhibit CLP-RATES-1, at 31, lines 16-18.

a. What is the purpose of the discount? What goal does the Company seek to accomplish with the discount?
b. How did the Company determine that the proposed level of the discount is sufficient to satisfy that goal?

CLF-003 Response:

a. The purpose of the discount is to address affordability. The discount serves the Company's broader affordability objectives in two ways. First, at the individual customer level, Rate 6 mitigates the winter bill escalation that accompanies air source heat pump adoption, supporting customers in realizing the bill savings from high-cost delivered fuels. Heat pump operation can substantially increase winter electricity consumption, and without a rate response, that seasonal increase can erode or eliminate the economic benefit of switching from oil or propane. Second, at the system level, the rate adds incremental load priced above the marginal cost of serving it, so each incremental kilowatt-hour contributes to recovery of the Company's cost of providing service. Spreading fixed costs over a larger sales base places downward pressure on average rates for all customers over time. This provides an economic benefit for all residential customers, not just Rate 6 participants. Rate 6 is deliberately structured as an affordability measure rather than a broad electrification subsidy; however, this also allows for value stacking with electrification incentives provided through energy efficiency or other programs.

   Rate 6 provides an affordability pathway for customers who adopt air source heat pump technology in circumstances where conversion makes economic sense, without requiring a substantive increase to non-participating customers to fund the discount.

b. The Company determined the level of the effective discount by reference to cost causation. The discounted rate is set to cover the incremental cost of serving the additional load the converting customer adds, which establishes the floor; the standard residential rate establishes the reference point above it. The discount is the space between those two, and it is sized to be no deeper than that space. A Rate 6 customer pays to cover the incremental cost of serving that customer, such that no portion of that customer's cost of service is

redistributed to non-adopting customers. The result is a more affordable rate for the customer making the conversion decision, achieved without imposing an offsetting burden on customers taking service under the standard rate. This is the level of discount the Company determined it could offer within those constraints.