



UIL HOLDINGS CORPORATION

157 Church Street, New Haven CT 06510-2100

May 7, 2014

Lisa Skumatz, Ph. D.
Skumatz Economic Research Associates (SERA)
762 Eldorado Drive
Superior, CO 80027

Re: UIL Review of the Draft “Connecticut Ground Source Heat Pump Impact Evaluation & Market Assessment, REVISED DRAFT”, NMR Group Inc., April 11, 2014

Dear Ms. Skumatz:

The United Illuminating Company (“UI”), Connecticut Natural Gas Corporation (“CNG”) and The Southern Connecticut Gas Company (“SCG,” and with UI and CNG, the “Companies”), hereby submits the following comments on the “Connecticut Ground Source Heat Pump Impact Evaluation & Market Assessment, REVISED DRAFT” Draft Report by NMR Group Inc., and dated April 11, 2014. The draft was submitted to UI on April 23, 2014, with a request for comments to be provided by May 7, 2014.

The primary purpose of the study was to provide performance and savings information on residential GSHPs to the administrators of the Ground Source Heat Pump (GSHP) Program in Connecticut; the electric utilities and the Connecticut Energy Financing and Investment Authority (CEFIA). The objectives of the study includes the following:

- Quantify energy and peak demand savings of the Connecticut GSHP programs
- Quantify improvements in air quality
- Assess the GSHP program for potential improvements
- Assess the market for GSHPs in Connecticut

After a review of the study, the Companies feel that the evaluation vendor has presented a revised draft report that meets the objectives. The Companies appreciate the added technical information that was provided with this report as supporting documentation. This report focuses on results from both CEFIA and CEEF incentives; The Companies will limit comments to those results and discussions specifically directed at the Utility-administered efficiency programs (CEEF).

New Comments:

- The Companies would like to clarify that CEEF provides incentives for GSHP installations in both existing homes and new homes (Executive Summary, page I).
- It is mentioned on page 38 that “based on our review it appears that the hours of operation for the GSHP units assumed in the tracking system were lower than those observed in the field by the evaluation team”. The Companies were hoping to see this value quantified. Updated values for usage would help us with our update to the Connecticut Program Savings Document (PSD).

Previous Comments:

Several comments from the previous draft version from January 17, 2014, remain outstanding. They have been updated to reflect this new draft report and are as follows:



- In the report it appears that the utility net-to-gross (NTG) ratios are calculated based on the assumption that the purpose of the utility incentive program (CEEF) is to provide an incentive to customers for installing a GSHP. The primary purpose of the utility incentive is to ensure a properly performing system. The Companies suggest that the utility NTG ratios should consider instead the effectiveness of the utility Verification of Installed Performance (VIP) program at ensuring proper installation. Relying exclusively on customer interviews and their decision to install a GSHP does not properly reflect this.
- In the results presented in tables ES-1, ES-2 and ES-3, the vendor presents GSHP savings results based on a typical existing or new construction home. These results are simply expressed as annual kWh savings for a “typical existing home” or “typical new construction home”. While these results have value, a more useful presentation would be in kWh per ton. Not only would this be consistent with the PSD, but also this would allow the Companies to more effectively update the GSHP measure within the PSD. Can the vendor produce a table of results that show Annual Heating and Cooling consumption based on a kWh/ton and an efficiency value as well as a summer kW/ton?
- **Recommendation 1 (Page XII) – Consider advanced training in GSHP design, installation, and performance for program staff, particularly if the CEFIA incentive returns.**

The full text of the recommendation indicates it is unclear whether or not these comments refer to CEFIA or CEEF staff. Currently UI has one staff who has successfully obtained certification from the International Ground Source Heat Pump Association (IGSHPA) and who is also a Certified Geoexchange Designer with the Association of Energy Engineers (AEE). As this program continues to grow and develop, the Companies will continue to consider and investigate the various GSHP Certifications or training sessions available to our staff.

- **Recommendation 2 (Page XIII) – Consider redesigning the VIP spreadsheet to allow for more flexibility**

The Companies will take this recommendation into consideration and review the current VIP spreadsheet for new ways of increasing its flexibility. It was also the hope of the Companies that the evaluating contractor could provide guidance and recommendations as to how the VIP tool could be enhanced, improving installations and GSHP operations.

- **Recommendation 3 (Page XIII) – If CEFIA incentives return, consider ways in which the program could be offered more seamlessly to both contractors and customers**

The Companies will take this recommendation into consideration if CEFIA incentives return.

- **Recommendation 4 (Page XIII) – If CEFIA incentives return, consider reintroducing the CEFIA incentive in 2017 after the federal tax credit expires on Dec 31, 2016**

This is a recommendation that is directed towards CEFIA.

- **Recommendation 5 (Page XIII)– If the CEFIA program is offered again in the future, consider revising the CEFIA baseline assumptions to accommodate those participants that would choose a natural gas or propane heating system in the absence of a GSHP Program**

This is a recommendation that is directed towards CEFIA.



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Thank you for the opportunity to provide these comments.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'Jason Gray', with a stylized flourish at the end.

Jason Gray
Lead Engineer
United Illuminating