January 31, 2013

Lisa A. Skumatz, Ph.D.

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762 Eldorado Drive

Superior, Co. 80027

**RE: CL&P Review of the Draft Connecticut Weatherization Study**

Dear Ms. Skumatz

The Connecticut Light and Power Company (CL&P) is pleased to submit these written comments with regard to a draft evaluation report: *Weatherization Baseline Assessment, Revised Review Draft Report,* (“Study”), January 4, 2014, NMR Group, Inc. (“NMR”). The draft Study was submitted to CL&P on January 4, 2014 with a request for comments to be provided by January 31, 2014.

The primary purpose of the Study was to provide DEEP, the EEB, and the electric and gas utilities (“the Companies”) with information that would assist their planning efforts in pursuit of the Public Act 11-80 Weatherization goal which calls for weatherizing 80% of the housing stock in Connecticut by 2030.

Overall, CL&P is very pleased with the study including its content, organization and level of detail. The Study provides informative information on the efficiency of single family homes in Connecticut. This information will be an integral part of program planning and will be used to guide and enhance the existing programs as well as to assist CL&P as it moves towards the Public Act Weatherization goal. CL&P looks forward to the completion of Phase II (Cost Effectiveness Analysis) of this Study and looks forward to working collaboratively through the Evaluation Road Map Process with NMR to ensure that the Phase II results bring additional value.

CL&P would like to offer a few constructive comments and recommendations pertaining to the Study for consideration:

**Explanation of HERS Ratings.** The Study includes data on the HERS (Home Energy Rating System) of homes. A HERS rating is a complicated and comprehensive metric that can be used to gauge overall energy use of homes and therefore, is related to, but different than the Weatherization Standard. In order to differentiate between the two, the report should clearly explain what a HERS rating is, how it is calculated, and compare and contrast it to the Weatherization Standard.

**MMBtu and Dollar Savings.** Table 3-15 provides MMBtu consumption for the various components of homes for the “As-Built” and “Weatherized” homes, for both heating and cooling. CL&P requests that this table should also include annual fuel costs tied to the MMBtu consumptions that are presented. Also, table 3-15 is a summary table based on the entire population of homes sampled (all heating fuels). In addition to this summary table, similar tables should be provided broken down by primary heating fuel types. Lastly, the fuel cost rates used to calculate the annual fuel costs should be provided e.g. cost of oil per gallon, etc.

Table 3-16 provides fuel costs for the “As-Built” and “Weatherized” homes based on end-use. CL&P requests that associated MMBtu values be included in this table. In addition, similar tables should be provided broken down by heating fuel type. Again, the fuel cost rates used to generate these tables should be provided.

**Streamlined Rating Process**. CL&P strongly agrees with NMR that it may be appropriate to use a streamlined rating process such as a customized spreadsheet. [[1]](#footnote-1) CL&P would like to investigate the feasibility of developing such a streamlined rating process. This process may provide significant time and cost savings associated with the assessment of homes for compliance, and would allow for additional dollars to be used for the installation of weatherization measures. In order to test the feasibility of developing a streamlined yet robust rating process, CL&P requests that all data including spreadsheets and electronic HERS ratings associated with this Study be made available for further analysis.

**NMR Recommendations and CL&P responses.**

***Recommendation:*** The EEB should consider the best way to address basements in the

weatherization standard. The current standard suggests that homeowners should insulate

the frame floor separating a conditioned first floor from an unconditioned basement. In

some cases, this suggestion may be contradictory to sound building science. Additionally,

there may be limited cost-effective savings from insulation retrofits in these cases as the

temperature change is typically not that dramatic between a first floor and a basement.

Moreover, insulation installation in these applications can be challenging due to wiring and plumbing penetrations.

***CL&P response***: CL&P agrees with this recommendation. Note that basement insulation became a qualifying measure in 2014.

***Recommendation:*** The EEB should consider removing the slab insulation requirement

that exists in the current draft weatherization standard. The majority of homes in the State

are older homes that likely lack documentation on the presence and level of slab

insulation. As a result, any assessment of slab insulation, when addressing progress

towards the 80% weatherization requirement, will likely be based on general assumptions as opposed to visual verification.

***CL&P response***: CL&P agrees with this recommendation.

***Recommendation:*** The EEB should review the current standard definition and consider

revisions to the efficiency levels required by the standard based on the study results.

Although the EEB should review the entire standard, the Team suggests paying particular

attention to basements and frame floors. The information provided in the main body of the report will assist this review and potential revision.

***CL&P response***: CL&P agrees with this recommendation and is willing to assist the EEB with this review process.

***Recommendation:*** The EEB should consider adding details to the current standard that

address all frame floor locations that are located over unconditioned space (e.g.,

conditioned to garage frame floor locations, conditioned to ambient frame floor locations,

etc.). Similarly, the EEB should consider adding a requirement to the standard that addresses rim joists.

***CL&P response***: CL&P agrees with this recommendation.

***Recommendation:*** The HES program should target non-electrically heated homes built

prior to 1980, regardless of household income. The program should prioritize those

homes that have not yet taken part in the program. Targeting non-electrically heated

homes is the best way to increase compliance with the weatherization standard, but HES

should continue to pursue energy saving opportunities (e.g., heat pumps replacing electric

resistance heat) in the electrically heated homes that do take part in the program even if these opportunities will not greatly increase compliance with the weatherization standard.

***CL&P response***: CL&P agrees with this recommendation.

***Recommendation:*** The Companies should ensure that HES vendors are discussing wall

insulation upgrades with homeowners, particularly in homes with uninsulated wall

cavities. The Companies may want to consider whether the current incentive and

financing options adequately induce adoption of wall insulation upgrades by households with by natural gas.

***CL&P response***: CL&P agrees with this recommendation.

***Recommendation:*** The Companies should continue to focus on air infiltration reductions

during initial HES visits and continue to have HES vendors offer flat ceiling and wall

insulation upgrades where applicable. Likewise, the Companies may want to consider

whether the current incentive and financing options adequately induce adoption of these measures.

***CL&P response***: CL&P agrees with this recommendation.

***Recommendation:*** Increasing basement insulation, specifically conditioned to

unconditioned basement frame floor insulation, will likely increase compliance with the

*current* weatherization standard. The Companies could consider increasing the focus on

basement insulation during initial HES visits and encourage homeowners to insulate their

basement at either the foundation walls or the frame floor if increasing compliance with the current standard definition is a priority.

***CL&P response***: CL&P agrees with this recommendation. Note that basement insulation including both wall and ceiling became a qualifying measure in 2014.

***Recommendation:*** The Companies should consider requiring and/or recommending that

HES vendors utilize infrared cameras during HES visits. The use of these cameras would

likely increase air infiltration reductions and help increase compliance with the weatherization standard

***CL&P response***: CL&P agrees with this recommendation. Many HES vendors already use infrared cameras where feasible to help identify opportunities and maximize savings.

***Recommendation:*** The Companies currently help address these issues through the

healthy homes initiative and health impact assessments. The Companies should continue

to work with other agencies to address these issues. The EEB and DEEP may also want

to consider the appropriateness of offering financing to HES households and HES-IE

landlords and rebates to HES-IE homeowners to fund abatement of these problems with

the understanding the recipient would then adopt more energy-savings measures such as

insulation or air sealing. It is the opinion of the evaluation team that meeting the 80%

weatherization requirement by 2030 without increasing the efficiency of homes withthese concerns will be difficult.

***CL&P response***: CL&P agrees with this recommendation.

***Recommendation:*** The EEB should consider the pros and cons of various software

options for assessing compliance using the performance-based approach. REM/Rate is a

robust modeling tool that produces accurate energy consumption estimates, but it may not

be a viable software option if the EEB expects HES vendors to calculate the

weatherization status for HES participating homes. Other options such as the DOE Home

Energy Score software or a customized spreadsheet based model may be more applicable.

There would undoubtedly be a tradeoff of time/cost vs. accuracy should a less robust

model be adopted, but these tradeoffs are something the Team believes the EEB should consider.

***CL&P response***: CL&P believes that it is imperative to develop a streamlined rating process. CL&P does not believe the DOE Home Energy Score, in its current form, is a viable tool to use for Weatherization assessments towards the Public Act 11-80 Weatherization goal because the DOE Home Energy Score does not normalize energy use (thus a smaller home will receive a better score than a comparable larger home, all things being equal). CL&P requests that all data pertaining to this study should be provided to test the feasibility of developing a robust yet streamlined rating process (see also Streamlined Rating Process, above).

Thank you for the opportunity to provide these comments.

Very truly yours,

Joseph Swift

Joseph Swift

Operations Supervisor

Connecticut Light and Power

1. In 2002, CL&P worked with the EPA to develop a simplified rating process to certify ENERGY STAR homes in Connecticut. Based on that success, CL&P believes that a streamlined rating process may be feasible for the assessment of weatherized homes. [↑](#footnote-ref-1)