



June 19, 2019

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

Re: R1603 Home Energy Solutions and Home Energy Solution Income Eligible Programs Impact Evaluations- UIL Comments on Draft Final Report

Dear Ms. Skumatz:

The United Illuminating Company (“UI”), Connecticut Natural Gas Corporation (“CNG”) and The Southern Connecticut Gas Company (“SCG”) (collectively the “Companies”), hereby submit the following comments on the “**R1603 CT Home Energy Solutions and Home Energy Solutions Impact Evaluation- Final Report**” prepared by West Hill Energy and Computing (“West Hill”) dated May 22, 2017. The draft was submitted to the Companies on June 5, 2019, with a request for comments to be provided by June 19, 2019.

The overall purpose of the study was to perform a billing analysis study for the Connecticut Home Energy Solutions (“HES”) and Home Energy Solutions - Income Eligible (“HES-IE”) programs. Collectively, these tasks are referred to as the R1603 study. The following refers to the draft report.

One overarching comment/concern that we have is that the results for the HES and HES-IE Programs are not reported separately. While these two programs incorporate many common efficiency measures there have very distinct paths for customer participation in each program. Generally speaking HES customers chose, on their own, to participate in the program and are required to pay a participation fee. However HES-IE participants are generally selected to participate and for most cases are required to pay very little or no costs. In addition the previous HES / HES-IE Evaluation in 2014 (R16) did provide separate result for both the HES and HES-IE programs.

For several measures, furnaces and boiler cleaning, along with; repairs and replacements; these measures were only applicable to the HES-IE program. Yet that fact is not clarified in report.

The report makes no attempt to separate out electric measures savings for customers that heat with either oil or propane, from those with electric heat. This leads us to wonder if the somewhat lower realization rates for electric savings for envelope related measures

(insulation, air sealing, duct sealing and heating equipment) (see table 4-11) truly represent all customers with electric heating, or all customers with non-gas heating.

Our second concern is the lack of clear definition of the exact methodology used to estimate savings for individual measures using billing analysis.

This becomes even more critical when looking at the 41% realization rate for Lighting. The report is not clear as to what the baseline or existing wattages were used to determine calculated the savings evaluated. The draft report goes on that program year 2011 savings were 653 kWh /home and also reference EIA 2015 estimates of estimated lighting usage of 992 kwh/yr., without reference to what the mix of lighting was represents used for this estimates are based on. The Residential lighting has undergone significant changes last few years, during a transition for Incandescent to CFL to LED lighting. The report does not seem to mention or recognize these significant changes. UIL would like to see a summary table listing the types of bulbs and wattages of the bulbs that were removed and the new bulbs that were installed.

The other major concern the UIL sees is that there does did not appear any mention of on-site work performed. Yet the Statement of Work (see below) states that that West Hill will conduct on-site measurement and field surveys and summer and winter metering and logging;

3. **Data Collection: Develop on site protocols, conduct metering and on-site measurement for selected measures, field surveys for process, gross savings and NTG. Assumes summer metering / logging; winter metering / logging.**

The following are UIL initial comments on the Draft Report's recommendations;

Recommendation 1: Standardize measure categories and measure descriptions, including links to identifiers in the PSD.

Reason: Some measure descriptions had to be inferred and some measures could not be identified at all from the information provided by the utilities.

Companies' Comments: When this change is implemented, the Companies will need to consider the impact of this recommendation impact of program cost effectiveness.



Recommendation 2: Recommendation #2: Incorporate *ex ante* savings calculation inputs into program tracking database at the measure level.

Reason: This information is needed to verify that the savings were calculated in accordance with the PSD. In general, this information was available for the core measures, but not for add-on measures such as insulation.¹

Companies' Comments:

Recommendation 3: Track project details for all dwelling units within multifamily buildings such that in-unit meter data (where available) can be accurately matched to the specific measures installed in that residence and that all dwelling units in a specific building can be identified.

Reason: A substantial number of multifamily projects could not be matched to the billing data by dwelling unit. To work around this obstacle, multifamily projects were separated from the program population. In addition, a clear method of identifying common areas and master-metered multifamily buildings would be useful.

Companies' Comments: The Companies recognize that this is a difficult issue when looking at multifamily dwelling units by individual units. However UIL does make every effort to track measures and savings by individual dwelling unit where possible. (see example below). In some cases HVAC/DHW systems serve more than one unit in a building which makes it difficult to measure savings within a given unit. UIL believes this issue cannot be adequately addressed enhance the on-site evaluation of savings.

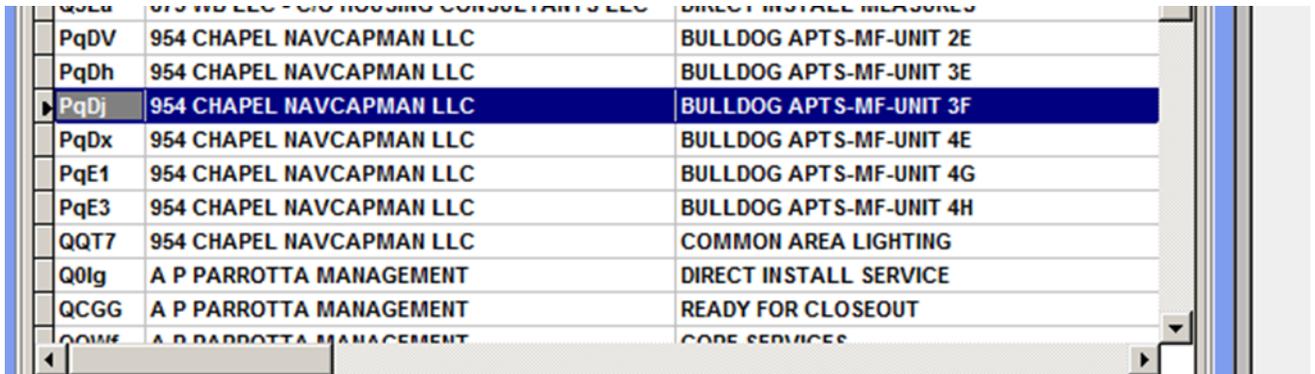
¹ The utilities provided more detailed information for a substantial sample of projects, and the evaluators verified the PSD savings for the sample.

Recommendation 4: Enforce referential integrity on program tracking database to assign unique site IDs, unique project IDs, and unique measure IDs as follows:

1. A unique site ID represents the residential building where work was done, whether single family or multifamily.
2. Each project ID represents a distinct job where one or more measures of a single type were installed at the given site. In multifamily buildings, projects may span multiple residences.
3. Each measure ID should represent a specific measure installed and be associated with a specific project and site

Reason: This issue affected the evaluation in multiple ways. In the multifamily component, the evaluators were not consistently able to match units to buildings or identify common

Companies' Comments: UIL's tracking system does assign unique site, project, dwelling unit and measure using unique IDs in most all cases. (See example form a multifamily project below) As mention above certain measures (for example an insulation of piping in the buildings central heating room cannot be assigned to an individual unit but is instead assigned to the building as a whole.



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|------|--------------------------|-------------------------|
| PqDV | 954 CHAPEL NAVCAPMAN LLC | BULLDOG APTS-MF-UNIT 2E |
| PqDh | 954 CHAPEL NAVCAPMAN LLC | BULLDOG APTS-MF-UNIT 3E |
| PqDj | 954 CHAPEL NAVCAPMAN LLC | BULLDOG APTS-MF-UNIT 3F |
| PqDx | 954 CHAPEL NAVCAPMAN LLC | BULLDOG APTS-MF-UNIT 4E |
| PqE1 | 954 CHAPEL NAVCAPMAN LLC | BULLDOG APTS-MF-UNIT 4G |
| PqE3 | 954 CHAPEL NAVCAPMAN LLC | BULLDOG APTS-MF-UNIT 4H |
| QQT7 | 954 CHAPEL NAVCAPMAN LLC | COMMON AREA LIGHTING |
| Q0lg | A P PARROTTA MANAGEMENT | DIRECT INSTALL SERVICE |
| QCGG | A P PARROTTA MANAGEMENT | READY FOR CLOSEOUT |
| QOMF | A P PARROTTA MANAGEMENT | CORE SERVICES |



Thank you for the opportunity to provide these comments.

Sincerely,

Richard Oswald

Lead Engineer
UIL Holdings