home comfort practice

TO: Connecticut General Assembly, *Energy and Technology Committee*

FROM: Lorenzo Wyatt, president, Home Comfort Practice, Inc.

DATE: March 3, 2021

SUBJECT: Public Comments in support of Governor's Bill No. 882

I write in support of *Governor's Bill No. 882: An Act Concerning Climate Change Mitigation and Home Energy Affordability*.

Home Comfort Practice, Inc. ("HCP") is a certified Minority Business Enterprise and residential energy demand reduction contractor located in Stratford, CT. HCP currently employs 93 Connecticut residents, who perform home energy diagnostics, insulation upgrades, window replacements, and other energy efficiency improvements statewide.

The proposed repeal and revision of *Section 1. Subsection (a) of section 22a-200a* will enhance the power of the Commissioner of Energy and Environmental Protection to reduce emissions of greenhouse gas that result from basic energy consumption in Connecticut. Specifically, three provisions have transformative potential:

- More aggressive emissions reduction targets, Sec. 1: "Not later than January 1, 2040, to a level of zero per cent from electricity supplied to electric customers in the state;"

- Procurement of demand response and demand reduction measures, Sec. 2: "The commissioner may direct the electric distribution companies to enter into power purchase agreements for energy products or benefits, associated attributes or any combination thereof from resources selected pursuant to this section for periods of not more than twenty years on behalf of customers of the state's electric distribution companies."

- Energy affordability, Sec. 3 and Sec. 4. "The Department of Energy and Environmental Protection may adopt regulations, in accordance with the provisions of chapter 54 of the general statutes, that qualify additional standards as a Home Energy Label."

Passage of Governor's Bill No. 882 will empower the Commissioner to expand our State's purchase of energy supply that produces zero greenhouse gas emissions and conservation services that further reduce energy demand. This more aggressive, zero emissions regulatory environment will create new investment opportunities for existing electricity generation businesses, as well as new vendors of renewable energy. In this respect, I encourage the Energy and Technology Committee to consider amending this bill to include procurement targets for greater inclusion of historically disadvantaged concerns that generate renewable energy for the benefit of Connecticut ratepayers.

The Home Energy Label provision, which requires landlords of rental properties and sellers of residential properties to disclose the annual and monthly energy costs to prospective renters or buyers, will achieve key objectives related to overall market awareness of the economic impact of energy costs on household disposable income, as well as consumer protection and equity goals.

- Greater awareness of Energize Connecticut energy efficiency programs. Connecticut now has award-winning, nationally recognized residential energy efficiency programs that are delivered to ratepayers by a robust energy demand reduction industry. Two programs, Home Energy Solutions ("HES") and HES-Income Eligible ("HES-IE"), are easily accessible to property owners and renters at very low costs of participation.

  Broader outreach and marketing efforts to both property owners, renters and homebuyers regarding Home Energy Label disclosure will stimulate demand for energy efficiency incentives and measures, while bolstering economic growth and employment within Connecticut's demand reduction industry.

- Consumer protection and equity. Whether a renter or purchaser of residential property, all Connecticut residents would benefit from, and are deserving of accurate disclosure regarding a property's energy burden on household disposable income.

  Low-income ratepayers spend a disproportionate amount of their annual household incomes on electricity and heating fuels. Basic utility costs that keep their families healthy and comfortable are the same costs that keep low-income households poor. A 2017 study entitled *Home Energy Affordability in Connecticut: the Affordability Gap* [APPENDIX I] commissioned by Operation Fuel found that household energy burdens exceeding 6% and total shelter costs (rent/mortgage, all utilities) exceeding 30% to be unaffordable. Basic utilities, heating and cooling through extreme seasonal temperatures disproportionately tax 320,000 low-income Connecticut households, while retarding the efforts of those households to achieve economic empowerment and to accumulate wealth.

The Home Energy Label requirement compels landlords and property sellers to evaluate the energy burdens of their properties. The Home Energy Label also empowers renters and buyers with relevant data that informs their purchasing decisions and creates a more competitive marketplace for residential properties with lower energy costs. With the Home Energy Label in effect, property owners will have greater motivation to increase the competitiveness of their properties by taking advantage of very generous financial incentives for upgrading the energy efficiency of their properties through Energize Connecticut programs. Property owners' endeavors to compete for renters and buyers on the basis of energy efficiency will accelerate Connecticut's progress toward a zero emissions energy future.

In conclusion, Governor's Bill No. 882 should be passed by the Connecticut General Assembly because it:

- achieves more aggressive targets for reducing greenhouse gas emissions;
- creates a regulatory environment for greater participation of renewable energy suppliers;
- promotes consumer education and protections through disclosure of energy costs;
- encourages competition among residential property owners to offer energy efficiency dwellings; and
- stimulates workforce development and economic growth within Connecticut's award-winning energy demand reduction industry.

Thank you for your consideration of this commentary.

APPENDIX I

HOME ENERGY AFFORDABILITY IN CONNECTICUT:

The Affordability Gap (2017)

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Glossary

Affordable home energy burden: A home energy bill that does not exceed 6% of gross household income. The 6% applies to combined heating and electricity.

Aggregate Home Energy Affordability Gap: The Home Energy Affordability Gap on a per-household basis multiplied by the number of households in a particular geographic area and/or Poverty Range.

Deep Poverty: Income which places a household at or below 50% of the Federal Poverty Level.

Federal Poverty Level: A measure of low-income status updated annually by the U.S. Department of Health and Human Services.

Home Energy Affordability Gap: The dollar difference between actual home energy bills and affordable home energy bills for a specified geographic area. The Home Energy Affordability Gap is calculated before application of external assistance such as fuel assistance or utility rate discounts.

Home energy burden: A home energy bill as a percentage of income. For example, a household with a home energy bill of $2,000 and a gross household income of $8,000 has a home energy burden of 25%.

LIHEAP: The Federal Low-Income Home Energy Assistance Program, operated as a state block grant program and administered by state agencies.

Introduction

Connecticut's Home Energy Affordability Gap increased in 2017 relative to the prior year. As has been true for several years, home energy costs continue to pose a crushing burden to low-income residents of the state. Particularly for households with incomes in "Deep Poverty," home energy costs threaten not only the ability of Connecticut households to retain access to energy services, but also threaten access to housing, food, medical care and other necessities of life. The Home Energy Affordability Gap in Connecticut leaves an aggregate Gap substantially higher than available assistance resources. The size of the Affordability Gap indicates the extent of the home energy affordability crisis in Connecticut.

Home energy unaffordability in Connecticut is a statewide phenomenon. It affects areas of the state both rural and urban. It affects areas of the state both North and South, both East and West. The discussion below continues a series of annual reports examining home energy affordability in Connecticut. The Home Energy Affordability Gap measures the dollar amount by which actual home energy bills exceed affordable home energy bills. In this respect, "affordability" is examined in terms of home energy burdens, bills as a percentage of income. For example, if a Connecticut household has an annual income of $12,000 and an annual home energy bill of

$3,000, that household has a home energy burden of 25% ($3,000 / $12,000 = 0.25). An ***affordable*** home energy burden is set at 6%.[1]

[1] The 6% is a calculated figure. It is based on the premise that utility costs should not exceed 20% of shelter costs. Moreover, it is based on the premise that total shelter costs should not exceed 30% of income. 20% of 30% yields a 6% affordable utility burden.

It is universally accepted that total shelter costs are "unaffordable" if they exceed 30% of income. Total shelter costs include not only rent/mortgage, but all utilities (except telephone). See generally, Mary Schwartz and Ellen Wilson (2008). "Who Can Afford to Live in a Home: A Look at Data from the 2006 American Community Survey," U.S. Census Bureau: Washington D.C. They state in relevant part:

> The conventional public policy indicator of housing affordability in the United States is the percent of income spent on housing. Housing expenditures that exceed 30 percent of household income have historically been viewed as an indicator of a housing affordability problem. The conventional 30 percent of household income that a household can devote to housing costs before the household is said to be "burdened" evolved from the United States National Housing Act of 1937.
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> Because the 30 percent rule was deemed a rule of thumb for the amount of income that a family could spend and still have enough left over for other nondiscretionary spending, it made its way to owner-occupied housing too. Prior to the mid-1990s the Federal housing enterprises (Fannie Mae and Freddie Mac) would not purchase mortgages unless the principal, interest, tax, and insurance payment (PITI) did not exceed 28 percent of the borrower's income for a conventional loan and 29 percent for an FHA insured loan. Because lenders were unwilling to hold mortgages in their portfolios, this simple lender ratio of PITI to income was one of many "hurdles" a prospective borrower needed to overcome to qualify for a mortgage. There are other qualifying ratios as well; most of which hover around 30 percent of income. The amount of debt outstanding and the size and frequency of payments on consumer installment loans and credit cards influence the lender's subjective estimation of prospective homebuyers' ability to meet the ongoing expenses of homeownership. Through the mid-1990s, under Fannie Mae guidelines for a conventional loan, total allowable consumer debt could not exceed eight percent of borrower's income for conventional mortgage loans and 12 percent for FHA-insured mortgages. So through the mid-1990s, underwriting standards reflected the lender's perception of loan risk. That is, a household could afford to spend nearly 30 percent of income for servicing housing debt and another 12 percent to service consumer debt. Above these thresholds, a household could not afford the home and the lender could not afford the risk. While there are many underwriting standards, none of them made their ways into the public policy lexicon like the 30 percent of income indicator of housing affordability.
>
> The mid to late 1990s ushered in many less stringent guidelines. Many households whose housing costs exceed 30 percent of their incomes are choosing then to devote larger shares of their incomes to larger, more amenity-laden homes. These households often still have enough income left over to meet their non-housing expenses. For them, the 30 percent ratio is not an indicator of a true housing affordability problem but rather a lifestyle choice. But for those households at the bottom rungs of the income ladder, the use of housing costs in excess of 30 percent of their limited in-

Methodology

The Home Energy Affordability Gap calculated for each Connecticut legislative district is determined based on the same fundamental model used for the annual Home Energy Affordability Gap calculated nationwide.[2] The Affordability Gap is that dollar amount by which home energy bills in a specified geographic region exceed what home energy bills would be if they were set equal to an affordable percentage of income. The Home Energy Affordability Gap model considers a bill "affordable" if it does not exceed six percent (6%) of annual household income.

The Home Energy Affordability Gap is a function of two calculations: (1) household income; and (2) household energy bills. Household income is based on the Federal Poverty Level for the median household size in the geographic region being studied. While the Federal Poverty Level is uniform for the 48 contiguous States, income by geographic area differs by geographic area. Poverty Level is a function of household size. Since median household size differs by geographic area (both between and within states), so, too, does the income used in the calculation of the Home Energy Affordability Gap.[3] For example, 100% of Federal Poverty Level in a geographic area with a median household size of two persons will be lower than 100% of Federal Poverty Level in a geographic area with a median household size of three persons.

Home energy bills determined for the Home Energy Affordability Gap are a function of the following primary factors, each of which is examined at a county level:

- Tenure of household (owner/renter).
- Housing unit size (by tenure).
- Heating Degree Days (HDDs) and Cooling Degree Days (CDDs).
- Household size (by tenure).
- Heating fuel mix (by tenure).
- Energy use intensities (by fuel and by end use).

comes as an indicator of a housing affordability problem is as relevant today as it was four decades ago.

[2] See generally, www.HomeEnergyAffordabilityGap.com (last accessed October 11, 2017).

[3] The geographic area serving as the basis for the Home Energy Affordability Gap calculation is the county.

Separate bills are calculated for four end-uses: (1) space-heating; (2) space cooling; (3) domestic hot water; and (4) electric appliances (including lighting and refrigerators). Bills are calculated using the U.S. Department of Energy's "energy intensities" most recently made publicly available through the U.S. Department of Energy's Residential Energy Consumption Survey (RECS). The energy intensities for each state are those published for the Census Division in which the state is located. Connecticut, for example, is located in the "New England" Census Division. State-specific demographic data is obtained from the American Community Survey (ACS) published by the U.S. Census Bureau. The analysis uses three-year average ACS data; for example, the "2016" data is the three-year average (2014, 2015 and 2016) with the most recent year being the reporting year. Heating Degree Days (HDDs) and Cooling Degree Days (CDDs) are obtained from the National Weather Service's Climate Prediction Center on a county-by-county basis. State price data for each end-use is obtained from the Energy Information Administration's (EIA) fuel-specific price reports (e.g., Natural Gas Monthly, Electric Power Monthly) at a statewide level.

Changes in "Second Series" Affordability Gap Analysis.

The analysis of the Connecticut Home Energy Affordability Gap undertaken in 2017 continues several modifications to Affordability Gap calculations undertaken prior to 2013. As a result, the Affordability Gap presented in this report continues the "Second Series" of the Affordability Gap, with results in this and subsequent years not directly comparable to the Affordability Gap calculated in 2012 and before. While remaining fundamentally the same, several improvements were introduced in both data and methodology in the Affordability Gap (2nd Series).[4]

The most fundamental change in the Home Energy Affordability Gap (2nd Series) is the move to a use of the American Community Survey (ACS) as the source of foundational demographic data. The ACS offers several advantages compared to the Decennial Census.[5] While year-to-year changes are smoothed out through the use of multi-year averages, the ACS nonetheless is updated on an annual basis.[6] As a result, numerous demographic inputs into the Affordability Gap (2nd Series) will reflect year-to-year changes on a county-by-county basis, including:

- The distribution of heating fuels by tenure;

[4] For example, data on housing unit size (both heated square feet and cooled square feet) is no longer calculated based on the number of rooms. Instead, Energy Information Administration / Department of Energy (EIA/DOE) data on square feet of heated and cooled living space per household member is used beginning with the Home Energy Affordability Gap (2nd Series). A distinction is now made between heated living space and cooled living space, rather than using total living space.

[5] The Affordability Gap (1st Series) relied on the 2000 Census as its source of demographic data.

[6] Given the earlier publication date of the 2017 Connecticut Home Energy Affordability Gap analysis, Census data was not updated from 2016's Census data. Census data is generally updated in late Fall of each year.

- The average household size by tenure;
- The distribution of owner/renter status;
- The distribution of household size; and
- The distribution of households by ratio of income to Poverty Level.

The change resulting in perhaps the greatest dollar difference in the aggregate and average Affordability Gap between the *First Series* and the *Second Series*, however, is a change in the treatment of income for households with income at or below 50% of the Federal Poverty Level. Over time, it became evident that income for households with income below 50% of Poverty Level is not normally distributed. Rather than using the mid-point of the Poverty range (i.e., 25% of Poverty Level) to determine income for these households, income is instead now set somewhat higher (40% of Poverty). By setting income for that Poverty Level higher, both the average and aggregate Affordability Gap results not only for that Poverty range, but also for the state as a whole, will be lower. The Affordability Gap results for other Poverty ranges remain unaffected by this change.

Another change affecting both the aggregate and average Affordability Gap is a change in the definition of "low-income." The Home Energy Affordability Gap (2nd Series) has increased the definition of "low-income" to 200% of the Federal Poverty Level (an increase from the previously-used 185% of Poverty). While this change may increase the *aggregate* Affordability Gap for the State, it is likely to decrease the *average* Affordability Gap. Since more households are added to the analysis, the aggregate is likely to increase. However, since the contribution of each additional household is less (given their higher incomes) than the contributions of households with lower incomes, the overall average will decrease.

In light of these introductory comments, the discussion below considers home energy affordability in Connecticut in the following sections:

- Part 1 considers statewide home energy affordability in 2017;
- Part 2 considers home energy affordability by income range;
- Part 3 considers home energy affordability by geographic area;
- Part 4 examines self-sufficiency incomes in Connecticut.

In addition to these sections, this report presents individual appendices consisting of "fact sheets" presenting the 2017 Affordability Gap for each state legislative district (both House and Senate), as well as for each of Connecticut's Congressional districts.

Part 1: Home Energy Affordability in Connecticut in 2017

The Home Energy Affordability Gap in Connecticut in 2017 is roughly $450 million. As is shown by this increasing Affordability Gap in Connecticut relative to 2016, home energy in Connecticut became less affordable (more *un*affordable) for the low-income population. In this Part, we focus on the statewide data setting forth the Home Energy Affordability Gap for Connecticut in 2017.

An Overview of the Statewide Affordability Gap

The State of Connecticut has a large Home Energy Affordability Gap facing its low-income households, with available resources grossly insufficient to address the problem.[7] As a result of this mismatch between energy bills and the resources needed to pay them, low-income households incur unpaid bills and experience the termination of service associated with those arrears. In addition, the paid-but-unaffordable bill is a real phenomenon in Connecticut. Even when low-income households pay their bills in a full and timely manner, they often suffer significant ad-

[7] While the Home Energy Affordability Gap analysis presents a statewide examination of unaffordable energy bills, specific sub-segments of the population have been examined in various years. The "working poor" were examined as part of the 2010 Affordability Gap analysis. The problems of residents of public and assisted housing were examined in the 2012 report. The implications by age (for both children and the aged) were examined in the 2014 Affordability Gap analysis. In addition to the affordability of home energy bills, the 2015 Affordability Gap analysis examined the affordability of water bills in Connecticut. The 2016 Affordability Gap analysis examined Connecticut low-income residents living in multi-family dwellings.

verse hunger, education, employment, health and housing consequences in order to make such payments.[8]

Energy prices have placed a substantial burden on the public and private energy assistance agencies in Connecticut. Home heating, cooling and electric bills in Connecticut have driven the average per-household Home Energy Affordability Gap for households living with incomes at or below 200% of the Federal Poverty Level (FPL) to crushing levels. The average annual shortfall between actual and affordable home energy bills for households at or below 200% of FPL now reaches $1,404 per household. The aggregate Home Energy Affordability Gap in Connecticut now reaches more than $450 million statewide.

This $450 million is *not* the total low-income home energy bill in Connecticut. Rather, the $450 million is the dollar amount by which actual home energy bills exceed affordable home energy bills for Connecticut households with income at or below 200% of the Federal Poverty Level. The population of households facing this Affordability Gap is substantial. According to the American Community Survey, Connecticut had roughly 320,000 households with income at or below 200% of the Federal Poverty Level.

The Home Energy Affordability Gap in Connecticut increased in 2017. This increase reflects rising home heating prices in particular.[9] According to the Connecticut Department of Energy and Environmental Protection ("DEEP"), March 2017 natural gas heating prices for residential customers had increased 12% over March 2016 (from $11.00/MCF to $12.31/MCF). In addition, DEEP reported that Connecticut fuel oil prices had increased from $2.121/gallon for the 2015/2016 heating season (October – March) to $2.436/gallon for the 2016/2017 heating season, an increase of nearly 15%. In Connecticut, roughly 31% of homeowners and 44% of tenants heat with natural gas; roughly 52% of homeowners and 21% of tenants heat with fuel oil.

Given the magnitude of Connecticut's Home Energy Affordability Gap, existing sources of energy assistance do not adequately address the Home Energy Affordability Gap in Connecticut. While the primary source of energy assistance in Connecticut is the federal Low-Income Home Energy Assistance Program (LIHEAP), LIHEAP is insufficient to address the state's affordability need. LIHEAP continues to cover only a fraction of the Home Energy Affordability Gap for a fraction of income-eligible households. Connecticut's LIHEAP allocation for the 2016 – 2017 heating season was only $78.7 million, roughly 17.5% of the total Affordability Gap in the state for 2017.

[8] The 2011 Connecticut Home Energy Affordability Gap presented an extensive discussion of these impacts. See, Colton (December 2011). Home Energy Affordability Gap: 2011, Connecticut Legislative Districts, at 14 – 31, prepared for Operation Fuel, Bloomfield (CT).

[9] Remember, the Home Energy Affordability Gap does not take actual weather conditions into account. To keep the Affordability Gap comparable from one year to the next, it is calculated based on "normal" heating and cooling conditions.

The appendices attached to this report present Connecticut's 2017 Home Energy Affordability Gap from three perspectives:

- Appendix A presents the Home Energy Affordability Gap for each state legislative district (House) in Connecticut;
- Appendix B presents the Home Energy Affordability Gap for each state legislative district (Senate) in Connecticut; and
- Appendix C presents the Home Energy Affordability Gap for each Congressional district in Connecticut.

In contrast to these detailed statistics, the narrative discussion below highlights different aspects of the Home Energy Affordability Gap. The detailed statistics for each legislative district, however, can be obtained from the relevant appendices.

Five Important Findings

1. The Home Energy Affordability Gap in Connecticut is substantial on an aggregate basis. In 2017, the aggregate Home Energy Affordability Gap for households with income at or below 200% of the Federal Poverty Level was $449,647,715.

2. The Home Energy Affordability Gap on an individual household basis is crushing in Connecticut. On average, actual home energy bills exceeded affordable home energy bills for households with income at or below 200% of Federal Poverty Level by $1,404.

3. This aggregate Affordability Gap in 2017 increased by nearly 13% relative to 2016. The *average* per-household 2017 Home Energy Affordability Gap increased by more than $160 relative to 2016.

4. The low-income population in Connecticut facing these unaffordable bills is substantial. More than 320,000 Connecticut households live with income at or below 200% of the Federal Poverty Level.

5. The primary source of energy affordability assistance, the Federal Low-Income Home Energy Assistance Program (LIHEAP), is insufficient to fill the state's Home Energy Affordability Gap. The LIHEAP allocation to Connecticut for the 2016 – 2017 heating season ($78.7 million) covered only 17% of the state's total Home Energy Affordability Gap. This coverage is not of ***total*** home energy bills, but rather only of the ***unaffordable portion*** of low-income home energy bills.

Part 2: Home Energy Affordability by Income

Having reviewed the overall home energy unaffordability in Connecticut, this Part begins a more disaggregated review of the affordability of home energy. The pages that follow consider home energy affordability as disaggregated by different perspectives relative to income. In turn, income is defined by the ratio of household income to the Federal Poverty Level, to a maximum of 200% of Poverty Level. The ratio of income to Federal Poverty Level is disaggregated into six separate ranges. Home energy affordability is examined both from the perspective of the aggregate Affordability Gap and the per-household Affordability Gap. Specific consideration is given to home energy burdens by Poverty Level.

Affordability Gap by Poverty Level

The largest Home Energy Affordability Gap in Connecticut falls in the lowest income range in average per-household terms. As shown by Table 1 on the next page, at each step-increase in household income as a percentage of Poverty Level (i.e., from 0-49% to 50-99%, from 50-99% to 100-124%, etc.), the per-household Affordability Gap *decreases*. While the per-household gap at the lowest range of Poverty is roughly $2,165, the per-household gap at the next step-

increase is only $1,776. While the per-household Affordability Gap at 100-124% of Poverty is $1,374, the per-household Gap at the next step-increase (125-149%) is $1,102.[10]

Table 1. Affordability Gap and Number of Households by Ratio of Income to Poverty Level (2017)

Poverty Level	Number of Households	Average per HH Burden (% of income)	Average Per-HH Affordability Gap ($s)	Aggregate Gap ($s)
0 – 49%	66,444	35.5%	$2,165	$143,435,548
50 – 99%	76,227	18.9%	$1,776	$135,352,366
100 – 124%	42,536	12.6 %	$1,374	$58,457,817
125 – 149%	44,523	10.4%	$1,102	$49,048,739
150 – 184%	64,517	8.5%	$774	$49,954,800
185 – 200%	25,946	7.4%	$501	$12,990,800
Total	320,193	---	$1,404	$449,647,715

Just because the ***average*** per-household Affordability Gap is greater at the lowest Poverty ranges, the ***aggregate*** Affordability Gap does not necessarily follow that same pattern. Because some income ranges at higher Poverty Levels have a greater number of households, the aggregate Affordability Gaps at those higher Poverty ranges are roughly comparable, even while the average Affordability Gap may be lower. For example, while the aggregate statewide Affordability Gap for households with income less than 50% of Poverty Level was $143 million (per-household Gap of $2,165), the Affordability Gap for households with income between 50% and 100% of Poverty Level[11] was only slightly less, at $135 million (per household Gap of $1,776). Similarly, the aggregate Affordability Gap for households between 100% and 150% of Poverty Level is $107 million, even though the per-household Gap was between $1,102 and $1,374.

The reason is that while there were 66,444 households with income below 50% of Poverty, there were 76,227 households with income between 50% and 100% of Poverty, and 87,059 households with income between 100% and 150% of Poverty. Because of the lower number of households,

[10] In reviewing these results, however, it is important to remember that Poverty Level involves income taking into account household size. A 2-person household with income at 30% of Poverty Level has a lower dollar income than a 3-person household with income at 30% of Poverty Level. Since mean household size differs by county, the dollar level of income will differ, as well, even given identical levels of Poverty. A county with a mean household size of 2.62 persons per household, in other words, will exhibit different income characteristics, and thus different home energy burdens with a corresponding Affordability Gap, than a county with a mean household size of 2.12 persons per household all other things equal.

[11] Be careful to note that not all Poverty Ranges presented in Table 1 are of the same size. There are some ranges presented in 50% increments (e.g., 50-99%), while some ranges are presented in smaller (e.g., 185-200%) increments.

the extent to which the average per-household Gap in the lower Poverty range is higher is not reflected in a higher aggregate Gap.

Only in the highest income ranges[12] are the per-household Affordability Gaps sufficiently low to result in significantly lower aggregate Gaps as well. The population of 90,463 households with income between 150% and 200% of Poverty yields an aggregate Affordability Gap of $62.9 million, while the population of roughly 66,500 households with income less than 50% of Poverty yields a Gap of $143.8 million. The 76,227 households living between 50% and 100% of Poverty generate an Affordability Gap of $135.3 million, compared to the $62.9 million Gap generated by the larger population (90,463 households) living between 150% and 200% of Poverty.

The cautionary tale to understand from this data is not to assume that a higher per-household Affordability Gap in a lower Poverty range will yield a higher aggregate Affordability Gap in that Poverty range. In assessing the aggregate Affordability Gap, it is important to take into account ***both*** the average per-household Gap in each Poverty range ***and*** the number of households in each Poverty range.

Affordability at the Lowest Income Levels

On a statewide basis, households with income at or below 50% of the Federal Poverty Level experience energy burdens exceeding 35% of income. The average burden in dollar terms is nearly $2,200 per household. The number of households experiencing such burdens is not insubstantial. Statewide, more than 66,000 low-income households have income at or below 50% of the Federal Poverty Level.

Table 1 discussed above shows that while the burden drops quickly as incomes rise, the home energy burden as a percentage of income remains above affordable levels statewide through income levels reaching well above Poverty Level. Even households with income between 185% and 200% of Poverty Level, on average, experience energy burdens of more than 7% statewide in Connecticut.[13]

Table 2 distributes the number of state legislative House Districts by the average per-household Affordability Gap and further disaggregates the Affordability Gap into various ranges by Poverty Level. These ranges demonstrate the spread of unaffordability throughout the State of Connecticut. For households with income less than 50% of Poverty, the Affordability Gap levels is above $2,000 in every legislative House District, with 40 House Districts having a Gap more than $2,300. For households with income between 100% and 124% of Poverty, 134 House Districts

[12] All households are "low-income." Some households are "higher income" only relative to others studied.

[13] This is not to say that ***all*** households with income at this Poverty range have unaffordable energy burdens. It simply notes that, ***on average***, households with income between 185% and 200% of Poverty in Connecticut in 2017 had bills that reached nearly 7% of income.

had an Affordability Gap of between $1,100 and $1,600. For households between 150% and 184% of Poverty, 124 House Districts had an average Gap between $600 and $900.

Table 2. 2017 Affordability Gap by State Legislative House Districts (By Poverty Level)

	0 – 50% FPL		50 – 99% FPL		100 – 124% FPL		125 – 149% FPL		150 – 184% FPL		185 – 200% FPL	
Average Gap	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/	# of House Dist's	Avg Gap in Dollars /a/
At or below $600	0	---	0	---	0	---	0	---	0	---	121	$441
$601-$900	0	---	0	---	0	---	71	$861	124	$722	26	$725
$901 - $1,100	0	---	0	---	0	---	62	$967	22	$1,001	4	$908
$1,101 - $1,600	0	---	0	---	134	$1,346	18	$1,245	5	$1,174	0	---
$1,601 - $1,900	0	---	125	$1,751	17	$1,691	0	---	0	---	0	---
$1,901 - $2,000	0	---	9	$1,918	0	---	0	---	0	---	0	---
$2,001 - $2,200	111	$2,125	17	$2,097	0	---	0	---	0	---	0	---
$2,301+	40	$2,351	0	---	0	---	0	---	0	---	0	---

NOTES:
/a/ Average Gap reported here is not weighted by population. Each legislative house district is given equal weight.

In sum, it is incomplete to consider only what the statewide average Affordability Gap might be. The average Affordability Gap in individual state legislative House Districts, depending on fuel penetration, household size, housing unit size and type, climate factors and the like, can be quite different from the average Affordability Gap statewide.

Affordability at the Highest Income Levels

Even though affordability improved the most in 2017 at the highest income levels, home energy unaffordability was nonetheless still evident at Connecticut's higher income ranges. In the 185%

- 200% Poverty Range, for example, despite the improved affordability in 2017, no state legislative House District had an Affordability Gap of $0.

It would be a mistake, however, to view each of those legislative House Districts equally. Table 3 shows that the Affordability Gap in the highest income ranges poses a danger in assuming that the average Affordability Gap is closely associated with the aggregate Gap in Connecticut. For example, while the average Gap is "only" $774 per household for households with income between 150% and 185% of Poverty, the aggregate Gap for that Poverty range ($50.0 million) is nearly the same as the aggregate Gap ($49.0 million) for the households falling in the range of 125% - 149% of Poverty. This observation holds true even though the 150% to 184% Poverty range is a slightly larger range (35%) rather than the range of 125% to 149% (25%). The reason is the large number of households who live with income between 150% and 184% of Poverty. The distribution of the aggregate Affordability Gap shows that the per-household Gap can easily mislead relative to the aggregate.

Table 3. 2017 Average Per-Household Gap and Aggregate Gap by Selected Poverty Level Ranges

Ratio of Income to Federal Poverty Level	Per House-hold Gap	Number of House Districts with Aggregate Affordability Gap that is: /b/			Aggregate Affordability Gap
		Less than $250,000	$250 - $500,000	$500,000 or more	
100% - 124%	$1,374	0	145	6	$58,457,817
125% - 149%	$1,102	0	151	0	$49,048,739
150% - 184% /a/	$774	0	148	3	$49,954,444
185% - 200% /a/	$501	151	0	0	$12,990,800

NOTES:

/a/ Note that the Poverty Level ranges are not of equal size. The "highest" two ranges are not presented in increments of 25% as the lowest two ranges are.

/b/ The numbers in these columns are not additive. Each column in a distinct grouping. The rows are additive, each one adding to 151 legislative House districts.

Measuring Energy Burdens rather than Dollar Gaps

The relative affordability of home energy can also be measured by the home energy burdens imposed on Connecticut households. As discussed above, a home energy "burden" is the annual home energy bill divided by the household's annual income. A household with a home energy bill of $2,000 and an annual income of $10,000, in other words, has a home energy burden of 20%. As explained above, home energy burdens exceeding 6% of income are considered to be unaffordable.

Table 4 presents summary data on the home energy burdens experienced by Connecticut residents at selected ranges of the Federal Poverty Level. For Connecticut households in "Deep Poverty," which is the term commonly attached to households with income of 50% of Poverty Level or below, home energy bills alone exceed the 30% burden considered to be "affordable" for *total shelter costs*. Indeed, for this Deep Poverty level, in no (0) Connecticut legislative House District did home energy burdens reach as low as 34% of income or lower. In contrast, 43

House Districts faced home energy burdens of more than 35% of income; eleven (11) House Districts faced home energy burdens of 40% or more.

Table 4. House Districts by Energy Burdens of Households at Selected Poverty Ranges (2017)

Less than 50% FPL		100 – 125% FPL		150 – 184% FPL		185 – 200% FPL	
Burden Range	Number of Dis-tricts	Burden Range	Number of Dis-tricts	Burden Range	Number of Dis-tricts	Burden Range	Number of Dis-tricts
34% or less	0	12% or less	0	8% or less	0	7% or less	0
34% - 35%	108	12% - 13%	112	8% - 9%	126	7% - 8%	134
35% - 40%	32	13% - 14%	26	9% - 10%	25	8% - 9%	17
>40%	11	>14%	13	>10%	0	>9%	0

While households with income between 100% and 125% of Poverty do not have home energy burdens exceeding 30% of their income, the average home energy burden exceeded 13% of income in 39 of Connecticut's House Districts (more than two times the affordable burden of 6%).

Even at 185% to 200% of Poverty Level, no legislative House District had an average energy burden that fell below the affordable home energy burden of 6%. Indeed, 17 House Districts at 185% to 200% of Poverty Level had average county-wide energy burdens of more than 8%, nearly 1.5 times the affordable level.

Six Important Findings

1. The largest Home Energy Affordability Gap falls in the lowest ranges of Poverty in average per-household terms. At each step-increase in household income as a percentage of Poverty Level (i.e., from 0-49% to 50-99%, from 50-99% to 100-124%, etc.), the per-household Affordability Gap *decreases*.

2. Just because the ***average*** per-household Affordability Gap is greater at the lowest Poverty ranges, the ***aggregate*** Affordability Gap does not necessarily follow that same pattern. Because some income ranges at higher Poverty Levels have a greater number of households, the aggregate Affordability Gap at those higher Poverty ranges is substantially the same even while the average Affordability Gap may be lower.

3. While home energy burdens (i.e., bills as a percentage of income) drop quickly as incomes rise, the home energy burden as a percentage of income remains above affordable levels statewide through income levels reaching well above Poverty Level. Even households with income between 185% and 200% of Poverty Level, on average, experience energy burdens of more than the 6% defined to be affordable statewide in Connecticut.

4. Care should be taken whenever considering "average" figures. The Affordability Gap in individual legislative Districts can vary widely from the statewide average.

5. The number of House Districts with the highest per-household Affordability Gaps is not insubstantial on a geographic basis. However, these Districts do not represent the bulk of Connecticut's population.

6. For Connecticut households in "Deep Poverty," which is the term commonly attached to households with income of 50% of Poverty Level or below, home energy bills alone exceed the 30% burden considered to be "affordable" for *total shelter costs* in every legislative district.

Part 3: Home Energy Affordability by Geography

Home energy affordability in Connecticut can be examined geographically as well as by income. The Affordability Gap is statewide. It reaches into every region of the state, including both urban and rural areas. Connecticut regions with the lowest aggregate Affordability Gap nonetheless still have a Gap in the millions of dollars each year. Connecticut's Congressional Districts are used to define the state's regions. Connecticut has five Congressional Districts.

The Affordability Gap differs somewhat by geographic region within the State of Connecticut. The aggregate Home Energy Affordability Gap will differ by factors that include the heating degree days (HDDs) and cooling degree days (CDDs); the number of low-income households and the poverty level at which those households live; the type and size of housing unit; the mix of heating fuels (e.g., natural gas, electricity, fuel oil); and other similar factors.

While the Home Energy Affordability Gap varies somewhat based on geography within the State of Connecticut, there can be no question but that the Affordability Gap is a statewide phenomenon. This fact can be seen by comparing the aggregate Affordability Gap in each Congressional District in Connecticut. The 2017 statewide Affordability Gap of $450 million is split nearly evenly over each of Connecticut's Congressional districts. While the distribution of the Affordability Gap is not identical over Connecticut's Congressional districts, the variation is relatively small. Congressional District Four contributes the least to the statewide total (17.3%), while the First, Second, Third and Fifth Districts are all at the upper end (20% - 21% each). Congressional District Four, with the ***smallest*** Affordability Gap in Connecticut, nonetheless faces a Gap of more than $77 million. District One and District Three have the largest Affordability Gaps with

between $94 and $95 million. Table 5 shows the aggregate Affordability Gap by region for the total population below 200% of Federal Poverty Level in Connecticut in 2017.

Table 5. Home Energy Affordability Gap by Congressional District (Connecticut) (2017)

District	Aggregate Affordability Gap	Percent of Statewide Total
1	$94,244,701	21.0%
2	$92,455,235	20.6%
3	$95,104,090	21.2%
4	$77,603,624	17.3%
5	$90,239,965	20.1%
Statewide total	$449,647,715	100%

As was discussed previously, care must be taken in using the statewide average Home Energy Affordability Gap as illustrative of the affordability (or lack thereof) in any particular region of Connecticut on a per-household basis. The per-household Affordability Gap in some Congressional Districts differs substantially from the statewide average. As shown in Table 6, for example, even though it does not have the largest aggregate Affordability Gap, Congressional District Two has both the highest energy burdens and the largest per-household Gaps of any of the five Congressional Districts in the Federal Poverty ranges presented.

Table 6. Home Energy Burdens and Per-Household Affordability Gaps by Congressional District and by Selected Poverty Levels (Connecticut) (2017)

District	Energy Burden			Per Household Affordability Gap		
	0 - 50%	100% - 124%	150% - 184%	0 - 50%	100% - 124%	150% - 184%
1	35.2%	12.5%	8.4%	$2,116	$1,329	$732
2	38.3%	13.6%	9.1%	$2,321	$1,539	$946
3	34.7%	12.3%	8.3%	$2,105	$1,307	$701
4	34.7%	12.3%	8.3%	$2,196	$1,362	$730
5	25.8%	12.7%	8.5%	$2,188	$1,388	$781
Statewide total	35.5%	12.6%	8.5%	$2,165	$1,374	$774

The statewide average Affordability Gap for Connecticut for the total population between 150% and 184% of Poverty Level was $774 in 2017. On the "high" end, Congressional District Two exceeds the statewide average by 22%, with an average Affordability Gap of $946. The deviation on the "low" end is not quite as substantial. The largest deviation can be found in Congressional District Three ($701), only nine percent (9%) lower than the statewide average.

Table 7. Aggregate Home Energy Affordability Gap by Congressional District and by Selected Poverty Levels (Connecticut) (2017)				
District	Aggregate Afford-ability Gap	Affordability Gap (0 – 50% FPL)	Affordability Gap (100 – 124% FP)	Affordability Gap (150 – 184% FPL)
1	$94,244,701	$31,269,579	$11,610,814	$9,708,369
2	$92,455,235	$27,008,210	$12,680,556	$11,964,053
3	$95,104,090	$32,171,749	$11,636,545	$9,445,511
4	$77,603,724	$24,212,686	$10,929,629	$8,627,335
5	$90,239,965	$29,181,325	$11,600,272	$10,209,177
Statewide total	$449,647,715	$143,843,548	$58,457,817	$49,954,444

As was discussed previously, care must be taken in using the statewide aggregate Home Energy Affordability Gap. While by far the largest proportion of the Affordability Gap occurs in the lowest range of Federal Poverty Level, there is a substantial aggregate Gap in every Congressional District as incomes become higher. As shown in Table 7, even in the second highest income range (150 – 184% of Poverty), the aggregate statewide Gap is $50.0 million and Congressional District Four, with the lowest aggregate Gap in that Poverty range, nonetheless reaches more than $8.6 million. If one were to reduce energy assistance to these higher Poverty ranges, a substantial amount of energy unaffordability would go uncovered.

Six Important Findings

1. While the Home Energy Affordability Gap varies somewhat based on geography within the State of Connecticut, there can be no question but that the Affordability Gap is a statewide phenomenon. The 2017 statewide Affordability Gap of $450 million is split nearly evenly over each of Connecticut's Congressional districts. While the distribution of the Affordability Gap is not identical over Connecticut's Congressional districts, the variation is reasonably small.

2. Care must be taken in using the statewide average Home Energy Affordability Gap as illustrative of the affordability (or lack thereof) in any particular region of Connecticut on a per-household basis. The per-household Affordability Gap in each Congressional District differs from the statewide average, sometimes substantially.

3. Congressional District Four makes the lowest contribution to the total statewide Affordability Gap, while Congressional District Three makes the largest contribution to the statewide total.

4. Despite the fact that District Four makes the noticeably lowest aggregate contribution to the statewide total, it does not have substantively lower energy burdens.

5. In fact, the Congressional District with the highest contribution toward the statewide aggregate Affordability Gap does not have the highest per-household Gap, nor does the Congressional District making the lowest contribution toward the statewide aggregate Affordability Gap have the smallest per-household Gap.

6. Care must be taken in making assumptions about the impact of differing affordability strategies in different regions of the State of Connecticut. Directing assistance toward the lowest income households in order to reach the greatest need would miss a considerable portion of the total aggregate Affordability Gap in each Congressional District. In contrast, expanding income eligibility to the higher ranges of income would be effective in meeting a significant proportion of the aggregate Affordability Gap.

Part 4: Self-Sufficiency Incomes in Connecticut

Assessing the affordability of electricity in Connecticut should not be done without considering the cost-of-living in different regions of the state. The cost-of-living in Connecticut is often substantially higher than elsewhere in the country. Moreover, even within Connecticut, there are regions that have a significantly higher cost-of-living. The fact that the cost-of-living can vary dramatically even within a single state is important in assessing a utility bill's affordability. If income does not vary sufficiently to cover the increased cost-of-living, customers living in those high cost areas may face affordability problems not otherwise faced by other customers with equal bills and equal incomes. In other words, the same "energy burden" caused by utility bills may have different impacts on real life affordability when other necessities require a greater share of income.

The Connecticut Self-Sufficiency Standard

The goal of many poverty advocates is to move a household toward "self-sufficiency." To measure progress toward this objective, the "Self-Sufficiency Standard" was developed in 1996 for Iowa by Dr. Diana Pierce, then director of the Women and Poverty Project at Wider Opportunities for Women ("WOW"). Since that time, the Self-Sufficiency Standard has become a commonly employed mechanism to measure the economic well-being of low-income households.

According to WOW, the Self-Sufficiency Standard "defines the amount of income necessary to meet basic needs (including taxes) without public subsidies (e.g., public housing, food stamps, Medicaid or child care) and without private/informal assistance (e.g., free babysitting by a relative or friend, food provided by churches or local food banks, or shared housing)."

The Self-Sufficiency Standard derives the cost-of-living by combining data for housing, child care, food, transportation, health care, taxes and "miscellaneous." Given that it assumes all adults work, it allocates the Earned Income Tax Credit to all eligible households, and the Child Care Tax Credit to each eligible family with children. The Self-Sufficiency Standard considers 156 different household compositions, ranging from a household with a single adult to a household comprised of four adults and three children. The Self-Sufficiency Standard was last calculated for Connecticut in 2015.[14] The Connecticut report concludes that "[f]or most workers throughout Connecticut the Self-Sufficiency Standard shows that earnings well above the official Federal Poverty Level are nevertheless far below what is needed to meet families' basic needs."

The Self-Sufficiency Standard for a four-person household, comprised of two adults and two children (one pre-school and the other school-age) is used in the discussion below. This household composition is used to illustrate the impact of differing levels of the cost-of-living in different parts of Connecticut. Table 8 sets forth the Self-Sufficiency Standard in various geographic regions in Connecticut. The Table then compares the income needed to reach the Self-Sufficiency Standard to incomes at four different levels of poverty (50%, 100%, 150%, 200%).[15]

This comparison is designed to determine the extent to which, if at all, a household living at the different Poverty Levels has sufficient income to be at or above the Self-Sufficiency Standard. In other words, this analysis compares how income distribution compares to the income necessary to account for geographic variations in the cost of living. A negative number indicates that the income at that Poverty Level would be *in*sufficient to meet the Self-Sufficiency Standard. A positive number indicates that a household with income at that Poverty Level would be above the Self-Sufficiency Standard.

Not surprisingly, for all income levels defined to be "low-income" for purposes of this study of the Home Energy Affordability Gap in Connecticut (at or below 200% of Federal Poverty Level), there is a substantial income deficit relative to each region's specific Self-Sufficiency Standard. Even at the highest income level (200% Poverty), the data shows three (3) areas with an income deficit of more than $40,000; four (4) with an income deficit of between $30,000 and $40,000; five (5) with an income deficit of between $25,000 and $30,000 and six (6) with an income deficit of between $20,000 and $25,000.

[14] The Self-Sufficiency Standard for Connecticut 2015, Center for Women's Welfare, University of Washington, prepared for Connecticut Permanent Commission on the Status of Women. Previous versions of the Self-Sufficiency Standard for Connecticut were prepared in 2000 and 2005. The most recent version can be accessed online: http://www.selfsufficiencystandard.org/sites/default/files/selfsuff/docs/CT2015_SSS.pdf. (last accessed October 16, 2017).

[15] Note that the calculation is at each Poverty Level. It is not a calculation for a range of income (e.g., from 0 – 50% of Poverty.

Table 8. Self-Sufficiency Standard for Connecticut Compared to Federal Poverty Level[16]

	Self-Suff Std	2017 Federal Poverty Level (HH of 4)				Income Shortfall			
		50%	100%	150%	200%	50%	100%	150%	200%
Waterbury	$70,182	$12,300	$24,600	$36,900	$49,200	($57,882)	($45,582)	($33,282)	($20,982)
Greater Waterbury	$73,513	$12,300	$24,600	$36,900	$49,200	($61,213)	($48,913)	($36,613)	($24,313)
Danbury	$82,351	$12,300	$24,600	$36,900	$49,200	($70,051)	($57,751)	($45,451)	($33,151)
Greater Danbury	$84,327	$12,300	$24,600	$36,900	$49,200	($72,027)	($59,727)	($47,427)	($35,127)
Northwest Corner	$71,219	$12,300	$24,600	$36,900	$49,200	($58,919)	($46,619)	($34,319)	($22,019)
Bridgeport	$70,003	$12,300	$24,600	$36,900	$49,200	($57,703)	($45,403)	($33,103)	($20,803)
Stratford	$79,682	$12,300	$24,600	$36,900	$49,200	($67,382)	($55,082)	($42,782)	($30,482)
Stamford	$93,026	$12,300	$24,600	$36,900	$49,200	($80,726)	($68,426)	($56,126)	($43,826)
Naugatuck Valley	$75,139	$12,300	$24,600	$36,900	$49,200	($62,839)	($50,539)	($38,239)	($25,939)
Upper Fairfield	$90,117	$12,300	$24,600	$36,900	$49,200	($77,817)	($65,517)	($53,217)	($40,917)
Lower Fairfield	$95,447	$12,300	$24,600	$36,900	$49,200	($83,147)	($70,847)	($58,547)	($46,247)
Hartford	$63,381	$12,300	$24,600	$36,900	$49,200	($51,081)	($38,781)	($26,481)	($14,181)
Hartford Suburbs	$77,309	$12,300	$24,600	$36,900	$49,200	($65,009)	($52,709)	($40,409)	($28,109)
North Central	$76,801	$12,300	$24,600	$36,900	$49,200	($64,501)	($52,201)	($39,901)	($27,601)
New Haven	$67,225	$12,300	$24,600	$36,900	$49,200	($54,925)	($42,625)	($30,325)	($18,025)
Upper Connecticut River	$77,246	$12,300	$24,600	$36,900	$49,200	($64,946)	($52,646)	($40,346)	($28,046)
Greater New Haven	$78,467	$12,300	$24,600	$36,900	$49,200	($66,167)	($53,867)	($41,567)	($29,267)
Lower Connecticut River	$81,896	$12,300	$24,600	$36,900	$49,200	($69,596)	($57,296)	($44,996)	($32,696)
Windham	$61,064	$12,300	$24,600	$36,900	$49,200	($48,764)	($36,464)	($24,164)	($11,864)
Greater Windham	$71,025	$12,300	$24,600	$36,900	$49,200	($58,725)	($46,425)	($34,125)	($21,825)
New London	$65,990	$12,300	$24,600	$36,900	$49,200	($53,690)	($41,390)	($29,090)	($16,790)
Greater New London	$70,164	$12,300	$24,600	$36,900	$49,200	($57,864)	($45,564)	($33,264)	($20,964)
Northeast Corner	$63,901	$12,300	$24,600	$36,900	$49,200	($51,601)	($39,301)	($27,001)	($14,701)

[16] The Self-Sufficiency Standard being used was calculated in 2015. It is being compared to the 2017 Federal Poverty Level.

Massachusetts Institute of Technology (MIT) Living Wage Budget

Another way to examine the well-being of households relative to their income is to determine what is frequently referred to as a "living wage." According to the Massachusetts Institute of Technology ("MIT"), its Living Wage Calculator is designed to estimate "an approximate income needed to meet a family's basic needs, [and would] enable the working poor to achieve financial independence while maintaining housing and food security."

As with the Self-Sufficiency Standard discussed above, MIT's Living Wage Calculator allows the analyst to determine the "income needed to meet a family's basic needs" based on a wide variety of household compositions. Rather than repeat an analysis for a four person household (2-adult, 2-children), the discussion below will focus on a three-person household, comprised of one adult and two children.

The Living Wage determined for each Connecticut county, as well as for four different Metropolitan Statistical Areas (MSAs), is then compared to actual average incomes for those counties at the bottom two "quintiles" of income as reported by the Census Bureau.[17] Just as the Self-Sufficiency Standard analysis shows, an examination of low-income households based on MIT's Living Wage Budget shows that Connecticut's low-income households have substantial income deficits relative to the annual wage they would need to meet basic family needs. The MIT data further confirms that this lack of income is statewide. It does not relate exclusively to households in a particular area of the state nor does the finding relate exclusively to households living in urban areas of Connecticut.

The comparison of mean (i.e., average) income by income quintile shows how deeply the inability-to-pay goes in Connecticut. Even for the Second Quintile of income in Connecticut, the county with the lowest income deficit (Middlesex) has an income deficit of more than $17,000 relative to the county's Living Wage. Within the Second Quintile of income, all four metropolitan areas had an income deficit of more than $25,000, while two counties (New Haven, Windham) have an income deficit of more than $25,000.

As the MIT data shows, the 40% of Connecticut households with the lowest incomes in the State are likely to have difficulty in meeting their basic needs, including their home energy bills.

[17] A "quintile" represents one-fifth of the population ranked by level of income. All households are rank-ordered by income. The one-fifth with the lowest income is the "First Quintile" (commonly referred to as the "bottom" quintile). The one-fifth with the next highest income is the "Second Quintile" and so on up to the "Fifth Quintile" (i.e., the one-fifth of households with the highest incomes).

Table 9. MIT Living Wage Budget (one adult / two children) Compared to Average Income by Income Quintile (Connecticut)

	MIT Living Wage	Mean Income		Income Deficit	
		Bottom Quintile	Second Quintile	Bottom Quintile	Second Quintile
Connecticut[18]	$68,802	$15,741	$42,703	($53,061)	($26,099)
Fairfield County	$73,576	$18,159	$49,787	($55,417)	($23,789)
Hartford County	$64,478	$14,206	$40,620	($50,272)	($23,858)
Litchfield County	$66,168	$19,961	$45,631	($46,207)	($20,537)
Middlesex County	$68,101	$18,097	$51,099	($50,004)	($17,002)
New Haven County	$67,384	$14,229	$38,069	($53,155)	($29,315)
New London County	$66,340	$16,339	$42,846	($50,001)	($23,494)
Tolland County	$67,478	$17,287	$47,480	($50,191)	($19,998)
Windham County	$63,725	$12,645	$35,502	($51,080)	($28,223)
Bridgeport-Stamford-Norwalk MSA	$73,576	$16,578	$47,573	($56,998)	($26,003)
Hartford-West Hartford-East Hartford MSA	$67,563	$14,685	$40,772	($52,878)	($26,791)
New Haven-Milford MSA	$67,384	$12,600	$35,577	($54,784)	($31,807)
Norwich-New London MSA	$66,340	$15,652	$40,923	($50,688)	($25,417)

The Significance of Cost-of-Living for Assessing the Affordability of Utility Bills in Connecticut

Several conclusions should be derived from the information presented above. First, there is often a tendency to assume that areas that have a higher cost-of-living also have higher incomes to offset those costs, thus leaving households in relatively similar situations. The data presented above, however, demonstrates that that assumption is simply not true. In reality, high cost-of-living areas in Connecticut frequently, if not generally, are *not* matched with higher incomes. High cost-of-living areas, in other words, impose identifiable affordability problems when considering home energy bills.

And within this first observation lies a second, and broader, conclusion. In assessing affordability, cost-of-living should be taken into account. The income deficits at a particular level of income vary greatly by county, and the capacity of a household to absorb electric bills is much less if that household faces an income deficit of $10,000 or more relative to the area's Self-

[18] The State and County data is 1-year data for 2016. The most recent MSA data is 5-year data for 2015.

Sufficiency Standard or Living Wage, as opposed to a household with no income deficit. An examination of affordability based on averages, or an assertion that a certain level of bill is affordable without taking the cost-of-living into account, may largely mask the economic difficulties facing low-income Connecticut residents.

Six Important Findings

1. Incomes up to and exceeding 200% of Poverty Level in Connecticut are insufficient to meet Connecticut's most recent Self-Sufficiency Standard. The Self-Sufficiency Standard defines the amount of income necessary to meet basic needs (including taxes) without public subsidies. The income deficits are statewide, affecting all regions of the state and both urban and rural areas.

2. Average income for persons living with income in the bottom 40% of the population are insufficient to provide a Living Wage in Connecticut. A Living Wage is designed to estimate an approximate income needed to meet a family's basic needs, and would enable the working poor to achieve financial independence while maintaining housing and food security. The income deficits are statewide, affecting all regions of the state and both urban and rural areas.

3. The higher cost-of-living in some areas of Connecticut are not matched with correspondingly higher incomes.

4. Utility bill unaffordability is, in part, a function of the cost of living. Bills that impose the same "burden" (i.e., bills as a percent of income) are more difficult to pay if those bills have greater competition for available household resources from other basic living expenses.

5. The unaffordability of bills in Connecticut does not arise due to insufficient household "budgeting." Rather, statewide, the unaffordability of bills results from an absolute mismatch between household income and the basic family needs which that income is called upon to provide.

6. Given the mismatch between household income and household basic needs in Connecticut, it is not surprising that a large and growing need exists for emergency home energy assistance provided by agencies such as Operation Fuel. The substantial mismatch between household income and household needs leads not only to the "paid but unaffordable bill," but leads to situations where utility bills are not able to be paid without the intervention of crisis assistance funding.

Sources of Information for Connecticut

U.S. Census Tables (American Community Survey)

http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml: The American Fact Finder presents the U.S. Census Bureau's basic periodic Census survey data at all jurisdiction levels.

http://www.census.gov/cps/data/cpstablecreator.html: The U.S. Census Bureau makes available an on-line "table maker" tool for creating state-level tables using data from its annual "Current Population Survey," using data from the CPS Annual Social and Economic Supplement.

Data on the Well-being of Children

http://datacenter.kidscount.org/: The Annie E. Casey Foundation makes available a comprehensive data center for its "Kids Count" initiative.

http://frac.org/research/resource-library?type=resource&filter_resource_category=11: The Food Research and Action Center (FRAC) publishes comprehensive data on a variety of food and nutrition topics, including data and program descriptions on federal food nutrition programs.

http://www.nccp.org/tools/: The National Center on Children and Poverty has three important on-line "data tools": (1) the Basic Needs Calculator through which the user can calculate a Basic Family Needs Budget by local jurisdiction and family size and type; (2) the Family Resource Simulator through which the user can determine total household resources (e.g., taking into account how increases in income result in reductions in public assistance); and (3) an Income Converter through which the user can insert a dollar income for a particular state and particular household size and receive a calculation of the ratio of income to Federal Poverty Level and the percentage of State Median Income which that income represents (and vice versa—convert percentage of State Median Income/Poverty Level into dollar levels).

Data on Employment and Wages

http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=5: The Bureau of Economic Analysis, within the U.S. Department of Commerce, makes available statistical data on "local area personal income and employment." State-level, as well as regional, data is also available.

Data on Energy and Fuel

http://www.eia.gov/electricity/data.cfm: The Energy Information Administration of the U.S. Department of Energy (EIA) makes available comprehensive state-level information on the price and sales of electricity by month.

http://www.eia.gov/naturalgas/data.cfm: EIA/DOE also makes available similar state-level data sets for natural gas prices and sales.

http://www.eia.gov/petroleum: EIA/DOE makes available data on petroleum products, including fuel oil and propane.

http://www.eia.gov/consumption/residential/index.cfm: The Residential Energy Consumption Survey (RECS) provides comprehensive data on consumption, housing characteristics, energy bills, and related data. Starting in 2005, the RECS provided "Home Energy Insecurity Scale" questions.

https://liheapch.acf.hhs.gov/: Information on statistical and administrative aspects of the federal Low-Income Home Energy Assistance Program (LIHEAP) can be found at the LIHEAP Clearinghouse funded through the federal LIHEAP office.

Data on Housing Affordability

http://nlihc.org/oor: For more than 20 years, the National Low-Income Housing Coalition has published its "Out of Reach" annual study, setting forth the Housing Wage by local jurisdiction, that wage needed for families to be able to afford basic housing in their community.

https://pic.hud.gov/pic/RCRPublic/rcrmain.asp: Data on public and assisted housing, at a national, state, Congressional District, county and various local demarcations, including specific Housing Authorities, is available through the Resident Characteristics Reports (RCR) data published by the U.S. Department of Housing and Urban Development (HUD).

Data on Poverty and Income

http://www.epi.org/resources/budget: The Economic Policy Institute (EPI) provides an on-line calculator to determine, for states and specific metropolitan areas within each state, a "basic family needs budget" by household type.

http://www.selfsufficiencystandard.org/pubs.html#statefind: The Center for Women's Welfare provides an on-line index for how to find, state-by-state, publications on self-sufficiency incomes. It also presents an index to available on-line state-specific self-sufficiency calculators.

http://aspe.hhs.gov/poverty/11poverty.shtml: The U.S. Department of Health and Human Services (HHS) provides the annual Poverty Guidelines by year since 1973.

http://www.statehealthfacts.org/profile.jsp: The Henry J. Kaiser Family Foundation makes available comprehensive health care statistics by state, along with a wide array of data on demographics including poverty and income.

http://livingwage.mit.edu/: The Massachusetts Institute of Technology makes available a "living wage" calculator by state.

http://www.bls.gov/cex/tables.htm: The U.S. Bureau of Labor Statistics publishes the Consumer Expenditure Survey providing information, by income and other demographic factors, on detailed annual consumer expenditures.

https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-statistics-zip-code-data-soi: The U.S. Internal Revenue Service (IRS) publishes annual data on the source and amount of income. Detailed information by state and zip code is available from the IRS.

Data on Working Households/Families/Persons

http://www.brookings.edu/research/interactives/eitc: The Brookings Institute provides an inter-active web page allowing the user to create jurisdiction-specific (state, county, state legislative district) reports on the use of the Earned Income Tax Credit (EITC) by year. Available are not only data on the use of the EITC, but data on tax returns by gross annual income of the tax-filer.

http://www.ctvoices.org: The Connecticut Voices for Children provides annual reports on "The State of Working Connecticut." Each year discusses a different aspect of jobs and income in Connecticut. In addition, the Connecticut Voices publishes a periodic "pulling apart" report, which examines income trends in Connecticut.