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**The Area Cost-of-Living Affects the
"Affordability" of Home Energy.**

NOTE TO READERS

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**FSC's California Study Documents
Relationship between Energy Affordability
and Cost-of-Living.**

Assessing the affordability of home energy should not be done without considering the cost-of-living in different regions. A study undertaken by FSC in California not only documents the impact of cost-of-living, but provides a model upon which stakeholders can build an assessment of how cost-of-living in their areas affect home energy affordability.

The cost-of-living in California is substantially higher than elsewhere in the country. Moreover, even within the PG&E service territory, 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 utility service territory, FSC concluded, is important in assessing a utility'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.

Council for Community and Economic Research Cost-of-Living Index (“COLI”).

Cost-of-living data can be derived from the Cost-of-living Index (COLI) published quarterly and annually by the Council for Community and Economic Research (“C2ER”) of the American Chamber of Commerce Research Association (“ACCRA”). C2ER data compares the cost-of-living in selected metropolitan areas for six cost components and for the cost-of-living as a whole.¹ It then indexes each area against the national average to determine the relative cost-of-living in each metro region. A COLI equal to the national average is set at 100. A cost-of-living more expensive than the national average is greater than 100. The C2ER data distinguishes between “urban” and “suburban” areas. FSC examined C2ER annual data for the three years 2013 through 2015 for both urban and suburban areas in California.² In five of the nine urban areas for which data is reported, and in six of the eleven suburban areas, California communities had a cost-of-living 40% or more higher than the national average in 2015. In no California community was the cost-of-living equal to or less than the national average in any of the three years examined.

As a result, utility costs face more competition for household income. Affordability, in other words, needs to be considered not simply standing alone, but also in relation to other household expenses. If households must pay more for housing and health care, they have fewer resources available to pay for energy. Bills are more easily less affordable.

¹ The six components include: groceries, housing, utilities, transportation, health care, and miscellaneous goods and services.

² Not all C2ER California communities are served by PG&E.

In California, according to the C2ER data, the high cost-of-living is a growing phenomenon. In seven California urban communities for which 2015 data was available had a cost-of-living higher than the national average. In addition, the extent to which the cost-of-living exceeded the national norm increased from 2013 to 2015.

Similarly, in the California suburban communities for which C2ER collected data in 2015, the cost-of-living exceeded the national average. The amount by which the cost-of-living exceeded the national average for these suburban communities also increased from 2013 through 2015.

Overall, in 2015, C2ER collected data from 273 urban and 292 suburban communities nationwide. The *least* expensive California urban community was ranked 223rd (of 273 nationally) (with #1 being the least expensive), while the least expensive California suburban community was ranked 240th (of 292 nationally) (again with #1 being the least expensive).

It is simply not possible, FSC asserted, to conclude that the same utility bill is equally affordable in San Francisco and Truckee (COLI of 176.7 and 156.3 respectively), as it would be in Stockton or Sacramento (COLI of 112 and 115.2 respectively). Of course, FSC found, the same is true nationally. A community in the PG&E service territory with a COLI of 150 is substantially less affordable than a different community in a different state having a COLI of 100 or below.

Due to the cost-of-living, PG&E bill affordability will vary widely by geographic area. The assumption, whether implicit or explicit, that cus-

tomers in all areas served by PG&E face equal circumstances, FSC concluded, is demonstrably in error.

Self-Sufficiency Incomes in California.

A second way FSC assessed the cost-of-living in different regions of the PG&E service territory involved an examination of the “self-sufficiency income” periodically calculated by the University of Washington’s School of Social Work. The Self-Sufficiency Standard “measures how much income a family of a certain composition in a given place needs to adequately meet their basic needs—*without public or private assistance.*” (emphasis in original).³

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.

FSC used the Self-Sufficiency Standard for a four-person household, comprised of two adults and two children (one pre-school and the other school-age) in its discussion of home energy affordability. This household composition is used to illustrate the impact of differing levels of the cost-of-living in different parts of the PG&E service territory. FSC examined the Self-

Sufficiency Standard in each county in PG&E’s service territory.⁴

The self-sufficiency income was then evaluated from two different perspectives. First, the analysis compared how much incomes would need to increase in order to have actual average incomes at four different levels of poverty (100% Federal Poverty Level; 200% FPL; 250% FPL; and 300% FPL) reach the Self-Sufficiency Standard.⁵ This analysis, in other word, compared how actual 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 *insufficient* 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.

Second, FSC also compared the self-sufficiency standard to the average (i.e., mean) income of each income quintile⁶ reported for the county⁷

ary 2014).

⁴ The FSC analysis engaged in some simplifying assumptions. It did not seek to allocate customers within a county. Nor did it seek to determine whether PG&E serves a “sufficient” number of customers to include the county. If the PG&E tariff listed the county as having some area within its service territory, and if data was available, the county was included.

⁵ Since the Self-Sufficiency Standard was last prepared in 2014, the comparisons are made using the 2014 Federal Poverty Levels.

⁶ The U.S. Census Bureau divides each population into five equal parts (having equal numbers of households), each part of which is called on “quintile.” Within each quintile, the Census Bureau then reports the average household income of those households falling within that quintile. The “bottom” (or “first”) quintile represents the one-fifth of households with the lowest incomes. The “top” (or “fifth”) quintile represents the one-fifth of households with

³ Diana Pearce. *The Self-Sufficiency Standard for California 2014: Methodology Appendix*, University of Washington School of Social Work, 6th ed. (Janu-

for 2014.⁸ FSC limited its examination to the bottom three income quintiles. The “bottom quintile” includes the 20% of households with the lowest incomes by county. The third or “middle” quintile presents the middle 20% of households (40% - 60%)⁹ and brackets the median income (50%).¹⁰ The actual average income for each income quintile is subtracted from the Self-Sufficiency Standard. As in the Poverty Level examination, a negative number indicates that the income in that quintile would be insufficient to meet the Self-Sufficiency Standard. A positive number indicates that a household with income at that quintile on average would be above the Self-Sufficiency Standard.

The objective for both approaches was to consider whether, and if so to what extent, the different costs of living, as manifested in the differing levels of the Self-Sufficiency Standard, not only may, but are likely to affect the “affordability” of PG&E bills. A county with substantial shortfalls, and especially with shortfalls at all income levels, would have less affordable PG&E bills due to higher costs of other necessities.

Both approaches used by FSC demonstrated that the level of local income does not track the level

the highest incomes.

⁷ Not all counties have income reported by quintiles.

⁸ As with the Poverty Level, since the Self-Sufficiency Standard was last prepared in 2014, data from the 2014 American Community Survey is used for comparison purposes.

⁹ The “third quintile” (40% - 60%) means that 40% of households have incomes less than the bottom of the quintile (i.e., 1% - 40%) and 40% of households have incomes greater than the top of the quintile (i.e., 61% - 100%).

¹⁰ The “median income” (50%) is that point at which one-half of all households have lower incomes and one-half of all households have higher incomes.

of the cost-of-living in a given area. When the cost-of-living is compared to Poverty Levels, for example, of the 42 PG&E counties studied, 25 had an income deficit at 250% of Poverty Level. Indeed, of those 25 counties with an income deficit (i.e., Self-Sufficiency Standard expenses exceeded income), twelve had an income deficit of more than \$10,000 at 250% of Poverty, while three had an income deficit of more than \$20,000. In contrast, of the 17 PG&E counties in which 250% of Poverty was sufficient to cover the Self-Sufficiency Standard, 13 exceeded the Self-Sufficiency Standard by less than \$5,000.

The deficits decline, but do not disappear, at 300% of Poverty Level. Nine counties exhibit an income deficit at 300% of Poverty, with three of those counties having an income deficit of more than \$10,000 a year.

The same results appear when considering the average income for the bottom three income quintiles in PG&E counties. Income data by quintile is available for 33 of the PG&E counties. Of those 33 counties, the average income of the third income quintile (40% - 60%) in 23 counties results in an income deficit when compared to the Self-Sufficiency Standard. In 12 of those counties, the deficit was more than \$10,000. In no county was the average income for the second quintile (20% - 40%) adequate to meet the Self-Sufficiency Standard. In no county was the average income for the lowest income quintile adequate to meet the Self-Sufficiency Standard.

A more complete comparison of California’s Self-Sufficiency Standard, limited to household income at 250% of the Federal Poverty Level was then considered by FSC. This examination

considered the annual Self-Sufficiency Standard for households with from one to four members using 19 different household compositions. While only one option exists for a one-person household (i.e., one adult), multiple options exist for a household with four members, six of which were considered.

This additional analysis confirms the data first discussed above. California households with incomes as high as 250% of the Federal Poverty Level, in each county served by PG&E, routinely experience incomes that are not sufficient to meet the state's Self-Sufficiency Standard. While the extent of the income deficit may differ based on the household's composition, the fact of the income deficit exists throughout household sizes and types of household composition.

FSC drew three conclusions from this data. First, the affordability of electricity in the PG&E service territory has a relative component to it. The range in income deficits for households at 300% of Poverty in the 42 PG&E counties is \$37,000, with the largest deficit reaching \$15,713 and the largest surplus reaching \$21,326. In the third quintile of income, the range of income deficits is more than \$41,000, with the largest deficit reaching \$25,622 and the largest surplus reaching \$15,981.

Second, 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 examined by FSC, however, demonstrates that that assumption is not true. In reality, high cost-of-living areas frequently, if not generally, are not matched with higher incomes. High cost-of-living areas, in other words, impose identifiable affordability problems when

considering electricity bills.

And within these first two observations lies the third, 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-Sufficiency Standard, 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, entirely masks the economic realities in California.

The Significance of Cost of Living for Assessing the Affordability of Utility Bills.

Including a consideration of the cost of living in an affordability analysis of electric bills makes evident the fact that PG&E bills are less affordable than in other states and in other parts of the country. In situations where income is insufficient to meet the localized self-sufficiency income, it is possible to allocate a proportionate share of the deficit to a normal household electric bill. With electric bills representing 4.0% of a household's total consumer expenditures nationwide,¹¹ that bill would contribute \$800 to an income deficit of \$20,000 (or \$400 to a deficit of \$10,000). Given the disproportionately high income deficits in counties included in PG&E's service territory, the amount of electric contribution to the deficit (i.e., the proportion of the bill that is unaffordable) is correspondingly high as well.

¹¹ U.S. Bureau of Labor Statistics. 2014 Consumer Expenditures Survey, Table 1101.

A similar conclusion can be reached when one examines the cost-of-living apart from the self-sufficiency standard. When a PG&E county has a cost-of-living 10% higher than the national average, the income effectively available to pay that bill, and thus make it affordable, is correspondingly proportionately less. Even if PG&E bills were roughly equal to the national average—this is an assumption known not to be true, since the data shows PG&E bills are, in fact, relatively higher—the affordability of the bill in light of effectively available income (i.e., cost-of-living adjusted income) would be less as well.

Six California communities for which 2015 data was reported have COLIs at 140% or more of the national average. When cost-of-living is examined for PG&E’s counties, FSC found that, in addition to higher electric bills, PG&E customers are faced with a higher cost-of-living as well. This makes bills even less affordable. Combining higher bills with a cost-of-living that is 40% or more greater than the national average leads to the ultimate conclusion that PG&E bills are correspondingly less affordable than the national average.

Summary and Conclusions

Based on the above data and analysis, FSC concludes that cost-of-living is an important factor to consider in assessing the affordability of home energy bills.

For more information regarding cost-of-living studies relative to home energy affordability, or for a copy of FSC’s California study of the affordability of PG&E’s electric bills, please write:

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Fisher, Sheehan and Colton, Public Finance and General Economics (FSC) provides economic, financial and regulatory consulting. The areas in which *FSC* has worked include energy law and economics, fair housing, affordable housing development, local planning and zoning, energy efficiency planning, community economic development, poverty and telecommunications policy, regulatory economics, and public welfare policy.