Speaking Their Language: Identifying Energy Assistance Disparities for Limited English Proficiency Populations in California

Trace O'Rorke, Verdant Associates
Merrill Storch, Verdant Associates

ABSTRACT

California's investor-owned utilities (IOUs) serve millions of Limited English Proficiency (LEP) customers with unique cultural backgrounds, experiences, and languages. These customers can struggle to access utility information and services due to difficulties navigating unfamiliar utility systems, cultural distrust of government and utilities, or a lack of adequate language support. As California's energy costs continue to climb, the need for holistic in-language utility assistance for these LEP households becomes increasingly urgent.

The Community Help and Awareness of Natural Gas and Electricity Services (CHANGES) program is an IOU-supported effort overseen by the California Public Utilities Commission (CPUC). CHANGES is unique in its goal of providing LEP populations with in-language utility support in California by connecting these customers with a broad range of language-accessible energy assistance. CHANGES provides case assistance, advocacy, and educational workshops through a network of over 20 Community Based Organizations (CBOs). Since 2022, approximately 86% of case assistance has been related to addressing payment difficulties.

This paper presents our approach used to identify geographic regions within California that are potentially underserved by the CHANGES program. We identified areas with the greatest need for language-accessible utility assistance based on the population of LEP customers and average energy burdens by region. CHANGES case volume was used to measure the level of service by region. Our approach identified several counties as potentially underserved, as well as others that conversely have adequate service levels. This approach could be used as a model for other utility programs to identify underserved regions.

Introduction

California is home to millions of people classified as Limited English Proficient (LEP) who receive electric and/or gas service from California's various utilities. LEP populations possess a broad range of experiences, cultural backgrounds, and languages, and they can regularly encounter barriers when attempting to access utility information and services. Such barriers typically stem from difficulties in navigating unfamiliar utility systems, from a maintained cultural distrust of government institutions or utilities, or simply from a lack of adequate support in their primary language(s).

The Community Help and Awareness of Natural Gas and Electricity Services (CHANGES) program is an effort supported by California's investor owned utilities (IOUs), overseen by the California Public Utilities Commission (CPUC), and implemented by community-based organizations (CBOs). It currently partners with four major IOUs: Pacific Gas and Electric (PG&E), Southern California Edison (SCE), San Diego Gas and Electric (SDG&E), and Southern California Gas Company (SoCalGas). Originally launched as a pilot in 2011,

CHANGES was formally established as a statewide program in December 2015, wherein CBOs have continued to provide assistance to natural gas and electricity customers served by the aforementioned California IOUs. CHANGES is rather unique within the utility space in its objective to provide LEP populations with individualized case management, in-language educational workshop events, and culturally mindful program outreach, with wide CBO presence across California. Over 20 participating CBOs have provided varying levels of outreach, education, and assistance to customers in over 50 languages since the program's inception. These entities have been successful in directly assisting LEP customers in need by providing in-language services and advocacy on their behalf, wherein casework in recent years has shifted heavily towards focusing on support for payment difficulties, monthly bill reductions, and other means of energy affordability and assistance such as program enrollment.

This study focuses on a geospatial analysis of the casework provided by CBOs through the CHANGES program. Specifically, the analysis compares the geographic distribution of CHANGES services against the distribution of LEP customers across the state and provides a cross-examination of estimated energy burden across California at both the IOU service territory and whole county levels. The primary objective is to identify where the CHANGES program is effectively serving its target customer segments and therein highlight the geographic areas or specific LEP populations that are potentially underserved. To that end, this analysis provides a framework for identifying service gaps and informing future outreach strategies.

Methodology

The analysis relied on four primary data sources: CHANGES case tracking data, the U.S. Census Bureau's American Community Survey (ACS) data, Department of Energy (DOE) Low-Income Energy Affordability Data (LEAD), and CBO service and territory details. These datasets collectively capture the extent of the CHANGES program's reach, help to characterize the populations it serves, and describe the geographic distribution of both spoken languages and relative energy burden across the state of California.

- **CHANGES Case Tracking Data.** A database of all case assistance managed by CBOs through the CHANGES program through 2024. Each record provides details about the customer and case as recorded by the CBO member(s) managing each customer request. The customer information used in this analysis includes spoken language(s), city, and ZIP code. These data points provided the information required to identify the language groups and approximate geographic locations of CHANGES participants. Customer-identifying data points such as utility account number are not included, making the identification and characterization of repeat program participants not viable.
- **United States Census Bureau ACS.** Three tables from the 2023 ACS 5-year estimates were used. The first table, S1602 (Limited-English Speaking Households), provides county-level counts of households identified as LEP. The second, table C16001 (Languages Spoken at Home for the Population 5 Years and Over), provides information on the languages most commonly spoken among individuals who reported speaking English "less than very well" at the county level. The third, table B16001 (Language Spoken at Home by Ability to Speak English for the Population 5 Years and Over), provides the same type of information as C16001 but at the statewide level and for a comparably larger number of distinct languages. In this analysis, the S1602 and C16001 data allow for a comparison of California's LEP population to those served by the

CHANGES program at the county level and for a select number of languages, while the B16001 data allows for a broader comparison of California's different LEP language populations relative to the CHANGES program. Together, these tables enable a broader understanding between the geographic and linguistic landscape of California and the current alignment of program outreach.

- **LEAD Tool Data.** Census tract-level estimates of residential energy burden from the DOE LEAD tool. In this data, energy burden is defined as the share of gross household income spent on energy costs. According to research published by the American Council for an Energy-Efficient Economy (ACEEE) and cited by the DOE, households with an energy burden of six percent or greater are considered as high energy burden (Drehobl 2020). These estimates were used to flag geographic concentrations of energy cost stress and to contextualize the distribution of CHANGES program activity relative to areas of heightened energy affordability challenges.
- **CBO Service Territory Records.** The documented geographic areas in which participating CBOs provide their services. This information is detailed at the county level and includes physical office locations of each CBO. These data serve as a reference point for the comparison of intended CBO coverage against reported locations where CHANGES customers resided.

This study focused on understanding the individualized casework provided directly to IOU customers by its CBOs relative to the statewide and county-level LEP populations as well as the distribution of CHANGES services rendered. We focus on the latest program years 2022 through 2024, as CHANGES casework and reach has evolved over time. This narrower scope helps draw conclusions and inference relevant to the program in its current state.

To understand the trend of casework over the years, Figure 1 below details the count of reported CHANGES cases served during each year 2016-2024. The high volume of non-English speakers seeking assistance with their gas and electricity services in 2022-2024 is the core motive for this study, wherein the primary objective is to identify specific geographic regions and/or LEP populations that are either adequately served by the CHANGES program or conversely have high potential for service coverage that has not yet been effectively realized. For additional context, recent CHANGES program years have seen a high volume of casework involving support for customer payment difficulties, such as account arrearage, payment plans, bill reductions, and enrollment into financial assistance programs such California's Low Income Home Energy Assistance Program (LIHEAP).

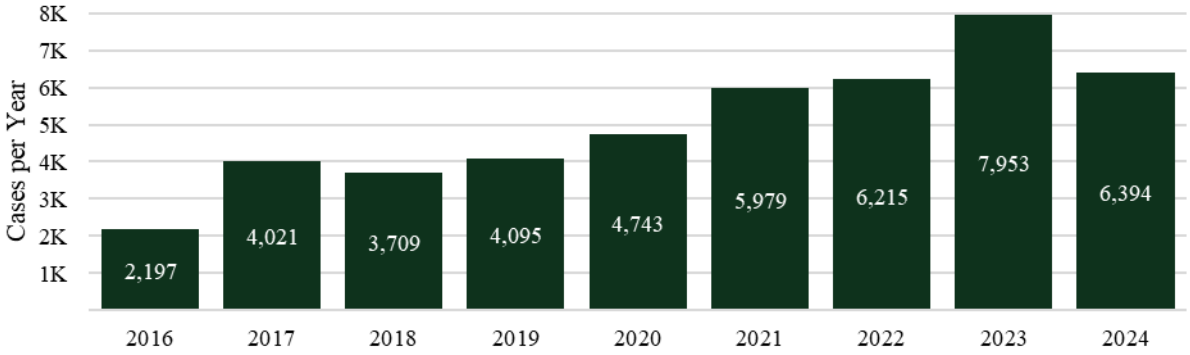

Figure 1. CHANGES case assistance by year (2016-2024)

As previously detailed, the CHANGES case tracking data included information on the language in which services were delivered and the location of the casework at various geographic levels. For this analysis, we mapped ZIP codes to their associated census tracts and counties. Because ZIP codes frequently span multiple census tracts, this study employed the U.S. Department of Housing and Urban Development's (HUD) ZIP-to-tract crosswalk files to facilitate this mapping. These crosswalk files include a residential ratio field, defined as the proportion of residential addresses within a given ZIP code-tract pair relative to all residential addresses in the ZIP code. For cases occurring in ZIP codes that intersected multiple census tracts, casework counts were assigned across the corresponding tracts in accordance with these residential ratios.

Figure 2 shows the average cases per county from the tracking data for years 2022-2024. To provide context to the distribution of case load, Figure 3 shows the service territories of the four IOUs currently involved with the CHANGES program. Higher population density areas such as the counties of Los Angeles, San Diego, San Francisco, and Fresno also generally have high average annual cases and the highest concentrations of CBOs. The relationship between the distribution of casework and program reach is explored by incorporating data on LEP population distribution and density across the state.

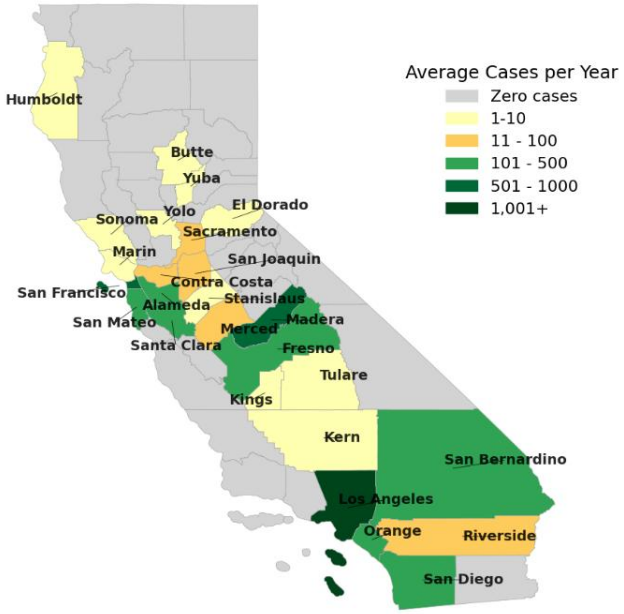

Figure 2. Annual CHANGES cases by county (2022-2024)

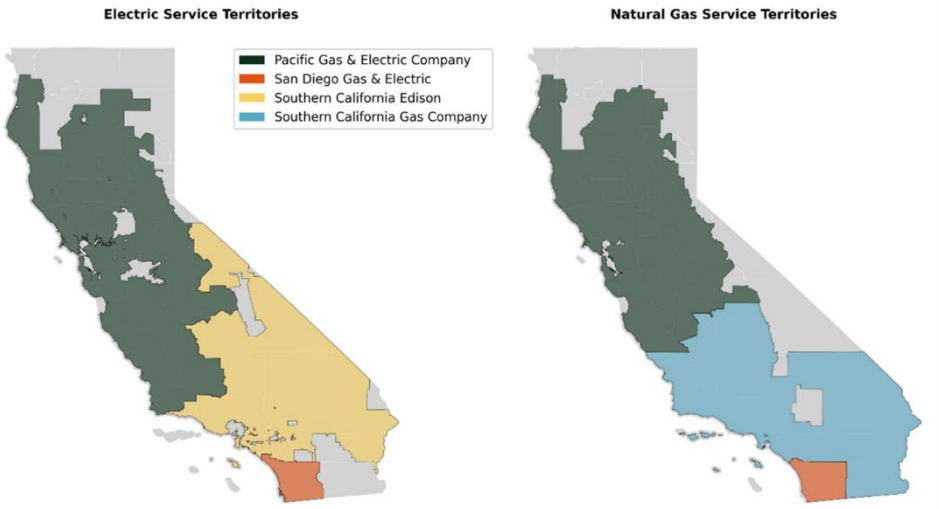

Figure 3. Electric and gas IOU service territories in California

To assess whether CHANGES CBO coverage and services are adequate in addressing the needs of the target population, we examined the number of LEP households (HHs) by county in 2023 as reported by the ACS (Census table S1602) alongside estimates of average household energy burden from the DOE LEAD tool for comparison against the incidence rate of CHANGES case activity. There are an estimated 1.12 million LEP HHs in California that represent 8.3% of all California HHs. Of these, 834,423 (75%) fall within CHANGES Program electric IOU service territories and 1,098,920 (98%) within gas IOU service territories. Counties where casework levels appear low relative to the LEP population are explored as potentially underserved within this study.

To further contextualize the CHANGES casework analyzed in this report, Table 1 provides background on the scale of operations across each IOU's service territory during 2022-2024, including the average annual number of cases overseen and the estimated number of LEP HHs within each territory. These figures provide a relative baseline of variation in both the LEP population and case load through which to interpret the results of the analysis. Note that the average value for number of cases-per-year is calculated as the average of the annual caseload across only 2022-2024. Another useful metric for analysis across region and language is the ratio of cases per 1,000 LEP HHs as provided in Table 1, wherein a larger number indicates a higher incidence of CHANGES casework relative to the LEP population(s) in question.

Table 1: Number of LEP HHs and average annual CHANGES cases by IOU service territory (2022-2024)

IOU	# of LEP HHs	Cases / Year	Cases / 1,000 LEP HHs
PG&E	358,841	8,632	24
SCE	402,468	3,305	8
SoCalGas	657,831	3,797	6
SDG&E	73,114	1,382	19

Results

This section describes the results of the geospatial analysis of CHANGES case activity. As previously stated, the CHANGES program reaches California's LEP communities through multiple channels including direct casework, educational outreach events, and media campaigns, with each piece varying in its geographic and demographic reach. This analysis focused on the CBO casework activity as a measurable indicator of program scope, though it is important to understand that other program-sponsored efforts may impact LEP HHs in areas of concern within the scope of this study. The findings presented here should be interpreted with this in mind rather than as a comprehensive assessment of the CHANGES program as a whole.

Service Levels by IOU Service Territory and County

Table 2 presents a cross-examination of the number of LEP HHs, annual CHANGES case load, and average estimated energy burden at the county level split by service type, for counties with at least 20,000 LEP HHs. All values are averages for program years 2022 through 2024 only. This portion of the analysis focuses on customers within the IOU service territories, reflecting the reach of CHANGES directly on its target population. The table presents 13 counties that collectively represent 83% and 84% of LEP HHs within CHANGES electric and gas IOU service territories, respectively. We note that all LEP HHs and cases represented in this table can fall under both the electric and gas categories if a customer receives both utility services from one of the program IOUs. The average number of cases per year contextualizes service levels by county, and the cases per 1,000 LEP HHs metric helps compare coverage across counties with different LEP population levels. A lower case-per-1,000 LEP HHs value can suggest that the LEP population in a given county may be underserved relative to CHANGES program case activity in those counties with higher values, although this metric alone will not describe the full breadth of CHANGES outreach. In this table, counties with at least 20,000 LEP HHs, less than one case per 1,000 LEP HHs, and an average energy burden of at least 2%, are shaded orange. The combination of these three metrics are indicative of large populations with lower relative case frequency per capita and high burdens.

Table 2. Count of LEP HHs and CHANGES case incidence for counties with high LEP populations (more than 20,000 HHs) within IOU gas and electric service territories (2022-2024)

	# of LEP HHs		Cases / Year		Cases / 1,000 LEP HHs		Avg. energy burden
County	Electric	Gas	Electric	Gas	Electric	Gas	
Los Angeles	217,408	400,281	428	1,096	2.0	2.7	2.0%
Orange	82,564	88,263	275	66	3.3	0.7	1.6%
San Diego	68,539	68,715	461	228	6.7	3.3	1.9%
Santa Clara	67,193	68,175	162	87	2.4	1.3	1.2%
Alameda	48,340	50,010	194	118	4.0	2.4	1.5%
San Francisco	37,451	37,451	744	364	19.9	9.7	1.0%
San Bernadino	36,782	30,953	384	96	10.4	3.1	2.9%
Riverside	32,909	49,744	11	6	0.3	0.1	3.1%
Fresno	26,561	26,561	420	352	15.8	13.3	3.9%
Kern	25,063	24,848	3	2	0.1	0.1	4.2%

County	# of LEP HHs		Cases / Year		Cases / 1,000 LEP HHs		Avg. energy burden
	Electric	Gas	Electric	Gas	Electric	Gas	
Contra Costa	23,589	23,589	12	11	0.5	0.5	2.0%
San Mateo	21,651	21,651	492	394	22.7	18.2	1.2%
Sacramento	4,298	37,016	2	64	0.5	1.7	2.2%

As pointed out in Table 2 above, the counties of Riverside, Kern, and Contra Costa stand out as potentially underserved within the CHANGES framework and CA LEP population. All three counties have a low case rate compared to the number of LEP HHs within each county, and both Riverside and Kern County have large average household energy burdens that exceed 3%. These factors indicate both a potential gap in services as well as high customer need. In contrast, we find that Orange County shows potential for CHANGES intervention (0.7 cases per 1,000 LEP HHs), but the energy burden for this population is comparatively low (1.6%). While a low energy burden is not directly indicative of a population that would not benefit from LEP-tailored program services, we use these metrics in combination as a potential way to identify areas of greatest need when considering the high rate of energy affordability assistance cases handled through the program. In this case, providing additional services to areas like Riverside or Kern county where case volume is low and energy burden is high would yield the most impact for those LEP populations with respect to program goals and statewide trends.

Table 2 can be further used to understand nuances, such as how successful CHANGES program implementation looks across California or why the program is not reaching a wider population. For example, Fresno County shows a high incidence of CHANGES cases relative to other counties with similar or larger LEP populations and has a notably high average energy burden of 3.9%. This may be indicative of CHANGES services reaching those in need at an appropriately high rate in this county specifically. Conversely, Sacramento County has a sparse LEP population serviced by an electric IOU, causing a low rate of case incidence (less than one case per 1,000 LEP HHs) that does not readily imply a high need for additional program services. Noting that CHANGES as a program is managed by IOUs and seeks to assist IOU customers, its scope is limited to those customer bases and therefore does not reach HHs serviced only by publicly owned utilities (POU). In the case of Sacramento, the county is supplied its electricity services primarily through a POU, which creates an inherently small eligible program population and subsequently drives down the amount of CHANGES casework conducted locally. Although CHANGES is amongst the largest statewide program of its kind in CA, there are clear additional research opportunities beyond its scope not covered by this study, such as opportunities for outreach and casework provided to households in non-IOU territories. To this end, analysis focusing on full regional LEP populations and energy burden for non-IOU areas like Sacramento alongside the local average energy burden will help develop an understanding of needs outside of the scope of the current program.

To that end and for the following portion of the analysis, we now expand the scope to whole-county LEP populations rather than those serviced only by the CHANGES IOUs. Because the IOU service territories include a majority of LEP HHs in CA for both electric and gas service, these results are comparable to the service territory analysis. To identify which languages would benefit the most from additional in-language support from a program such as CHANGES for customers within Riverside, Kern, and Contra Costa counties, we reviewed the LEP population in those counties by spoken languages. Table 3 shows the top languages spoken

within these counties for the population of individuals five years and older speaking English "less than very well" as depicted in the 2023 ACS. Riverside and Kern have large Spanish LEP populations, accounting for over 80% and 89% of LEP HHs respectively. Contra Costa has a more linguistically diverse LEP population, where Spanish is also the most common language but with meaningful shares of Chinese languages, Indo-European languages, and Tagalog. Given this, prioritizing Spanish-language CBO coverage in Riverside and Kern and using a multilingual approach inclusive of Chinese and Tagalog in Contra Costa would best serve the LEP residents who may currently lack access to the in-language support and resources helpful in navigating energy services and affordability. Each of these three counties has a different combination of population size and linguistic diversity, which would necessitate different approaches for each region from both a logistic and budgetary perspective, such as the amount of local casework or other outreach required and the linguistic diversity and staffing needs of the CBOs providing assistance.

Table 3. Top languages spoken by LEP HHs in counties identified as potentially underserved by the CHANGES program services

	Riverside		Kern		Contra Costa	
Language	# LEP HHs	% LEP HHs	# LEP HHs	% LEP HHs	# LEP HHs	% LEP HHs
Spanish	266,554	81.1%	130,855	89.1%	84,059	55.3%
Chinese (incl. Mandarin, Cantonese)	12,803	3.9%	1,602	1.1%	18,400	12.1%
Other Indo-European languages[1]	10,829	3.3%	3,818	2.6%	15,129	9.9%
Tagalog (incl. Filipino)	11,349	3.5%	3,445	2.3%	9,188	6.0%
Other Asian/Pacific island languages[2]	5,436	1.7%	2,197	1.5%	7,901	5.2%
Vietnamese	8,054	2.5%	1,144	0.8%	5,106	3.4%

Table 4 extends the analysis from Table 2 to counties with between 5,000 and 20,000 LEP HHs. Counties with five or fewer cases per year and an average energy burden of at least 3% are shaded in orange. The 11 counties presented in this table together account for 13% and 12% of electric and gas service LEP HHs statewide, respectively. Households within five of these counties have average energy burdens greater than 3% (Tulare, San Joaquin, Imperial, Merced, and Kings). San Joaquin receives high case activity relative to its coverage from the CHANGES program, while other counties with high average energy burdens do not show a similar level of coverage. Tulare County presents the most significant service gap in this group with over 18,000 LEP HHs, a 3.9% average energy burden (one of the highest burdens among all counties reviewed), and a low incidence of CHANGES case activity. Note that the remaining 34 California counties not included in this study collectively represent only 4% and 3% of LEP HHS with electric service and gas service, respectively.

[1] Other Indo-European languages includes (but not limited to) Italian, Portuguese, Greek, Armenian, Persian (incl. Farsi, Dari), Gujarati, Hindi, Urdu, Punjabi, Bengali, Nepali, and other Indic languages.
[2] Other Asian/Pacific island languages includes (but not limited to) Japanese, Hmong, Khmer, Thai, Lao and other Tai-Kadai languages, Telugu, Tamil, Malayalam, Kannada and other Dravidian languages, Ilocano, Samoan, Hawaiian and other Austronesian languages, and other minor languages of Asia.

Table 4. Count of LEP HHs and CHANGES case incidence for counties with low LEP populations (between 5,000 and 20,000 HHs) within IOU gas and electric service territories (2022-2024)

County	Cases / Year	# LEP HHs		Avg. energy burden
		Electric	Gas	
San Joaquin	34	18,191	19,264	3.2%
Tulare	5	18,820	18,820	3.9%
Ventura	0	15,849	15,849	1.8%
Monterey	0	14,491	14,491	2.2%
Stanislaus	3	2,317	12,478	2.7%
Imperial	0	167	12,239	3.8%
Merced	5	6,576	11,769	3.2%
Santa Barbara	0	8,864	9,376	1.7%
Solano	0	8,457	8,457	2.3%
Sonoma	1	7,786	7,786	2.1%
Kings	1	5,651	5,651	3.8%

A notable outlier in this analysis not shown in the previous tables is Madera County. With just under 4,000 LEP HHs across the IOU gas and electric service territories, Madera falls below the thresholds used in both Table 2 and Table 4 and represents less than 0.5% of total California LEP HHs. Nevertheless, two CBOs in the CHANGES network primarily serve customers within this county, resulting in an average of 714 cases per year. While Madera households carry a high average energy burden of 3.6%, the concentration of casework activity there may be considered disproportionate relative to other counties with larger LEP populations and comparable energy burden levels such as the counties of Tulare, Imperial, or Merced.

Language Prevalence by County

Per data from the 2023 ACS, the top three spoken languages in California by those who speak English “less than very well” are Spanish, Chinese (incl. Mandarin and Cantonese), and Vietnamese. For these languages, we analyzed counties with the highest LEP populations based on the 2023 ACS. The following tables present the average annual number of in-language cases by county for all counties that collectively make up the top 80% of the total LEP language population in question. Each table includes the average energy burden reported at the county level, which is calculated by aggregating census tract energy burden scores into a weighted average and where each tract’s energy burden is weighted by its language-specific LEP household population. As mentioned in the county-level analysis, low casework levels in a given area do not preclude the possibility that educational events or media outreach affected those communities through other CHANGES program channels.

Spanish is the most common language spoken within the California LEP population by a sizable margin. Table 5 shows the top 12 counties that together account for 80% of total LEP Spanish speakers within CHANGES IOU service territories. The incidence rate of CHANGES cases for Spanish speakers in Riverside, Kern, Tulare, Alameda, Monterey, and Ventura counties is low relative to their respective LEP populations, with Monterey and Ventura receiving no case assistance throughout 2022-2024. Of these, the counties of Kern and Tulare stand out for their

combination of low service levels and high average energy burdens above 3%, suggesting these communities may have the greatest unmet need for Spanish-language casework services. Fresno County similarly has a high energy burden at 4% but a high incidence of CHANGES case activity relative to its Spanish-speaking LEP population, attributable to local CBO presence.

Table 5. Spanish LEP population by county (top 80%) and annual CHANGES cases (2022-2024)

County	Cases / Year	% of total cases	County LEP pop.	% of total LEP pop.	Cases / 1,000 LEP people	Avg. energy burden
Los Angeles	458.4	20.7%	1,453,513	36.0%	0.3	2.3%
Riverside	11.0	0.5%	272,680	6.8%	<0.1	2.9%
Orange	189.1	8.5%	269,453	6.7%	0.7	1.7%
San Diego	173.0	7.8%	256,024	6.3%	0.7	2.0%
San Bernardino	96.6	4.4%	217,269	5.4%	0.4	2.9%
Kern	4.0	0.2%	136,008	3.4%	<0.1	4.1%
Santa Clara	147.5	6.6%	125,333	3.1%	1.2	1.4%
Fresno	268.4	12.1%	104,715	2.6%	2.6	4.0%
Tulare	7.5	0.3%	100,672	2.5%	<0.1	3.8%
Alameda	1.3	0.1%	98,695	2.4%	<0.1	1.9%
Monterey	0.0	-	97,465	2.4%	-	2.2%
Ventura	0.0	-	95,301	2.4%	-	1.8%

Chinese is the second most common spoken language within California's LEP population. Table 6 includes the top six counties that make up over 80% of total LEP Chinese speakers statewide. CHANGES coverage in Los Angeles and San Francisco appears adequate in comparison to other counties, with an average of over one case per 1,000 LEP customers. Service levels are lower in Santa Clara, Alameda, Orange, and San Mateo counties, though average energy burdens among Chinese-speaking LEP HHs in these areas are low (all below 2%), suggesting a moderately low level of energy-related needs within these populations.

Table 6. Chinese LEP population (top 80%) and annual CHANGES cases (2022-2024)

County	Cases / Year	% of total cases	County LEP pop.	% of total LEP pop.	Cases / 1,000 LEP people	Avg. energy burden
Los Angeles	246.9	32.4%	219,819	33.1%	1.1	1.9%
Santa Clara	0.7	0.1%	80,618	12.1%	<0.1	1.0%
San Francisco	455.9	59.8%	77,787	11.7%	5.9	1.1%
Alameda	5.0	0.7%	75,923	11.4%	<0.1	1.4%
Orange	2.0	0.3%	49,953	7.5%	<0.2	1.4%
San Mateo	14.8	1.9%	33,321	5.0%	0.4	1.2%

Vietnamese is the third most common spoken language of the California LEP population. Table 7 includes the five counties that make up over 80% of total LEP Vietnamese speakers. CHANGES case coverage in Orange County is high with over one case per 1,000 LEP customers, but Vietnamese case load in the remaining highly populated LEP Vietnamese-

speaking counties is low or nonexistent. Similarly to the Chinese-speaking LEP population, the average energy burden of the census tracts in the areas populated by LEP Vietnamese speakers are low (below 2.5%), suggesting again a relatively low need amongst these LEP populations on average for payment assistance services provided by CHANGES in particular.

Table 7. Vietnamese LEP population (top 80%) and annual CHANGES cases (2022-2024)

County	Cases / Year	% of total cases	County LEP pop.	% of total LEP pop.	Cases / 1,000 LEP persons	Avg. energy burden
Orange	125.0	25.8%	111,522	33.6%	1.1	1.7%
Santa Clara	4.0	0.8%	70,849	21.3%	<0.1	1.4%
Los Angeles	6.8	1.4%	51,044	15.4%	0.1	2.1%
San Diego	0.0	-	22,896	6.9%	-	1.8%
Sacramento	0.0	-	17,584	5.3%	-	2.2%

Statewide Relative Case Incidence for Specific Languages

We look now to the relative populations of LEP speakers for specific languages compared to the relative number of CHANGES cases conducted statewide across California. As previously mentioned, the C16001 U.S. Census data provides estimates of populations for specific language speakers that speak English "less than very well" at the county level. The B16001 U.S. Census data provides similar estimates but at the statewide level and for a broader set of distinct languages. This enables a statewide analysis that includes granular language groups not covered by the county-level analyses using the C16001 U.S. Census data.

Table 8 provides the average annual number of CHANGES cases conducted and the average estimated LEP population for languages or language groups with large populations (>20,000 speakers) across the state of California for 2022-2024, sorted by largest to smallest statewide population. The table also presents each language's share of cases relative to all CHANGES cases conducted as well as the share of California's total LEP population for each language within that same time frame. We then describe the ratio of the share of CHANGES casework compared to the share of statewide population as a metric for understanding how CHANGES participation represents California's total LEP population. A ratio of 1.00 would indicate the share of total CHANGES cases conducted for a specific language aligns with the relative share of total LEP speakers across California for that language. Moreover, a larger ratio of percent cases to percent population would indicate that the language or language group in question has a higher level of CHANGES case coverage compared to its total population and other languages.

Spanish, being the most prevalent language among LEP persons statewide, accounts for the largest share of CHANGES case assistance. However, this volume may not fully reflect the scale of need; with 62% of LEP Californians speaking Spanish but only 43% of cases conducted in Spanish, this yeilds a ratio of 0.70 which suggests a potential gap in service coverage. As shown previously in Table 5, this gap is particularly evident in Kern, Tulare, Riverside, and Monterey counties, all of which have a high incidence of Spanish speakers yet receive low levels of CHANGES assistance (fewer than 0.1 cases per 1,000 LEP residents). Taken together, this more acutely suggests that while Spanish language outreach is already a backbone of CHANGES

casework, targeted expansion in specific underserved counties could meaningfully improve access to utility-relevant services for the broader Spanish speaking LEP community.

Languages with the highest ratios (>1.00) include Chinese (incl. Mandarin and Cantonese), Vietnamese, Korean, Persian (incl. Farsi and Dari), Armenian, Khmer, and Hmong. Not all of these languages have large populations in California but still collectively make up over 21% of the statewide LEP population. Such high-ratio languages have been or currently are actively supported by CBOs who specialize in one or more of those languages and in which they perform the majority of their program activities every year. In particular, almost all case assistance (>99%) for the Armenian language is covered by one CBO who exclusively tailors its services for Armenian speakers, translating to the highest casework-to-population share ratio shown in this table.

Looking instead at the languages with the lowest ratios (<0.10), we note that Tagalog (incl. Filipino), Punjabi, and Russian are the three largest languages at over 50,000 speakers each that have the lowest relative case incidence on average. While this may indicate that these languages are underserved, it is important to note that it may reflect a lower energy burden and/or stronger existing support networks that reduce the need for case assistance. The scope of this study did not allow a close examination at the financial situations of specific LEP communities within California. Without the ability to disaggregate energy burden or other indicators of need by language, it is difficult to draw firm conclusions about whether low case incidence reflects unmet need or simply lower demand. Regardless, research into understanding the needs of these specific underserved populations would prove fruitful in promoting equitable access to the various utility services provided by the CHANGES program or similar efforts.

Additionally, although not explicitly described in Table 8, the Cambodian language of Khmer plus the Lao language (under the Tai Kadai group) have experienced severe fluctuations in case incidence over the full history of the CHANGES program. During 2022-2024, there has been at least one CBO providing case assistance to speakers of these two languages per year, but support has not always been constant and has shifted between different CBOs. This highlights how the LEP populations for even less-than-prominent languages value CHANGES services when they are made available.

Table 8. Annual CHANGES cases and California LEP population for language groups with over 20,000 LEP speakers statewide (2022-2024)

Language	Cases / Year	% of total Cases	CA LEP pop.	% of CA LEP pop.	Ratio of % cases to % pop.
Spanish	2,500.3	43.2%	2,744,671	62.2%	0.70
Chinese	1,491.0	25.8%	447,867	10.2%	2.54
Vietnamese	485.7	8.4%	222,656	5.0%	1.66
Tagalog	11.0	0.2%	167,879	3.8%	0.05
Korean	280.3	4.8%	130,497	3.0%	1.64
Punjabi	-	-	63,028	1.4%	-
Persian	300.3	5.2%	61,975	1.4%	3.70
Armenian	311.0	5.4%	57,109	1.3%	4.16
Russian	3.3	0.1%	50,404	1.1%	0.05
Arabic	52.7	0.9%	45,434	1.0%	0.88
Japanese	4.0	0.1%	34,739	0.8%	0.09

Language	Cases / Year	% of total Cases	CA LEP pop.	% of CA LEP pop.	Ratio of % cases to % pop.
Tai Kadai groups	15.3	0.3%	27,543	0.6%	0.42
Austronesian groups	5.3	0.1%	26,020	0.6%	0.16
Hindi	1.0	0.0%	24,116	0.5%	0.03
Khmer	121.3	2.1%	23,663	0.5%	3.91
Minor Asian groups	3.0	0.1%	23,352	0.5%	0.10
Slavic groups	7.0	0.1%	22,024	0.5%	0.24
Hmong	69.0	1.2%	21,527	0.5%	2.45

Conclusions

This analysis examined the reach of CHANGES CBO casework activity relative to the distribution and needs of California's LEP population, using counts of LEP HHS, CHANGES case volume, and average HH energy burden as indicators. When interpreting these findings, it is important to understand that the CHANGES program extends beyond personalized casework to include educational and media outreach, meaning communities with lower casework activity may still benefit from other forms of program support not explored here.

At the county level, Riverside, Kern, and Contra Costa stand out as having the largest gaps between LEP population size and casework activity, with Riverside and Kern compounded by above-average energy burdens. Among counties with smaller LEP populations, Tulare presents a particularly notable service gap, combining a large LEP population, high energy burden, and low casework volume. The disproportionate concentration of casework in Madera County relative to its LEP population size also raises questions about the current geographic allocation of CBO resources.

At the language level, Spanish-speaking communities in Kern, Tulare, Riverside, and Monterey counties face the most pressing gaps in CHANGES cases, given both the scale of the LEP population and average energy burden in those areas. For Chinese and Vietnamese speakers, service gaps are widespread but may be offset by the low average energy burdens among those populations, suggesting a comparatively lower level of acute energy-related needs.

At the state level, although Spanish may be the dominant language that CHANGES services are provided in, there is still a large LEP population across the state that is not receiving services, further suggesting that additional Spanish language assistance in counties like Kern, Tulare, Riverside, and Monterey may provide broad and as-of-yet unrealized benefits for those in need. We also note that large LEP populations of Tagalog, Russian, and Punjabi speakers across the state with little-to-no community members being directly served through the CHANGES program.

Taken together, this analysis focused on methods for identifying where LEP communities face unmet demand for energy affordability assistance and where targeted outreach or resource reallocation could have the most impact. It is again important to note that low casework incidence among certain LEP communities may indeed reflect unmet needs, but it could equally stem from lower energy burden, stronger existing support networks, or even the reach of other CHANGES-sponsored efforts that extend beyond the personalized casework. Without the ability to disaggregate energy burden or other need indicators by language group, it is difficult to draw firm conclusions about whether gaps in casework reflect unserved populations or a mere lack of

demand. Future work would expand the CHANGES program tracking data to include utility account numbers to facilitate a cross-examination of activity using customer bills, arrearages, and external program assistance. Additionally, the inclusion of broader income data would augment an analysis that aims to understand the highest-need geographic and language communities.

The gap-finding methods presented here offer a simple framework for CHANGES or similar programs to prioritize the counties and language communities where need is highest or reach is limited. More succinctly, this work serves as a step towards a more equitable delivery of energy affordability services.

References

Drehobl, Ross, and Ayala. 2020. “How High Are Household Energy Burdens?: An Assessment of National and Metropolitan Energy Burden across the United States.” ACEEE. https://www.aceee.org/sites/default/files/pdfs/u2006.pdf.