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Chapter 14. Small Ethnic-Owned Businesses Study

LA 100 Equity Strategies

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DISCLAIMER
The views expressed herein are those of the authors and not necessarily those of the University of California, Los Angeles (UCLA) as a whole. The authors alone are responsible for the content of this report.

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Introduction

The City of Los Angeles has committed to transition to 100% renewable energy by 2035. In 2021, the Los Angeles Department of Water and Power (LADWP), in partnership with the National Renewable Energy Laboratory (NREL), determined the technical feasibility and necessary investments to transition to 100% renewable energy.[1] To ensure that the benefits of 100% renewable energy are equitably distributed, LADWP launched the LA 100 Equity Strategy Study in partnership with NREL and UCLA.

An integral part of that equity effort has been to better understand and document the challenges facing small ethnic-owned businesses (EOBs),[2] which are a vital part of Los Angeles' business sector and form the backbone of our economy, generating jobs and wealth. This sector is surprisingly large, with over 400,000 entrepreneurs in the city, according to numbers from IRS tax returns and Los Angeles City business licenses. Triangulating through multiple data sources, we estimate that most of the businesses are small, with about three-quarters not having a brick-and-mortar presence and roughly two-thirds not having an LADWP commercial account. EOBs are a significant component of LA's business sector. According to data from the American Community Survey, EOBs make up over half of all the self-employed. They are a critical source of employment, market services and goods, and asset building within disadvantaged communities; consequently, assuring that EOBs can transition to 100% renewable energy is essential to making LADWP's response to climate change equitable. Achieving that goal however, as documented later, is challenging.

Recent events provide some insights into the challenges facing EOBs. Amid worsening economic inequality due to the COVID-19 pandemic and climate change, it is critical that EOBs remain viable, through creating an inclusive and sustainable economic recovery. Small EOBs are crucial for the survival of their communities and neighborhoods. Small businesses comprise 98% of all firms in the United States and employ nearly 50% of the labor force.[3] However, small EOBs are less likely to receive

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[1] Cochran, Jaquelin, and Paul Denholm, eds. 2021. The Los Angeles 100% Renewable Energy Study. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-79444. https://maps.nrel.gov/la100/

[2] For the purpose of this study, we chose to use the term "ethnic-owned businesses" rather than "minority-owned businesses" or "minority business enterprise" when referring to businesses owned by a person or persons of color. "Minority" implies a demographically smaller population, however, in the City and County of Los Angeles, people of color make up the majority of the population and are therefore not in the numerical "minority." EOBs includes both incorporated and unincorporated enterprises, micro and small businesses, and traditional brick-and-mortar establishments and other types of operations.

[3] Katare, B., Marshall, M. Valdiva, C. (2021). Bend or break? Small business survival and strategies during the COVID-19 shock. *International Journal of Disaster Risk Reduction*. *61*. https://doi.org/10.1016/j.ijdrr.2021.102332

loans compared to White businesses, and the loans that EOBs do receive are typically for a smaller amount compared White businesses.[4] Despite these challenges, EOBs have grown rapidly[5] and "outpace [the] growth of non-minority firms."[6]

The COVID-19 pandemic exacerbated existing inequalities that small EOBs faced. A Dua et al. study found that EOBs "were in financial precarious positions even before COVID-19 lockdowns."[7] The pandemic further produced inequalities, with ethnic businesses suffering major losses[8] and receiving less government assistance in comparison to White-owned businesses.[9]

To better understand the challenges facing EOBs and to assist LADWP in developing equitable policies, programs, and practices, the UCLA Center for Neighborhood Knowledge (CNK) and the UCLA Latino Policy and Politics Institute (LPPI) embarked on a one-year community-informed research project to learn more about the hurdles facing small EOBs and entrepreneurs in the Los Angeles region regarding the effects of the pandemic, environmental sustainability, energy burden, the anticipated effects of climate change, and potential challenges to adapt to the transition to 100% renewable energy. The study included two major components: a survey of over 500 EOBs and qualitative insights provided by stakeholders, LADWP staff, and pilot workshops.

Our research project focuses specifically on ethnic businesses in the Los Angeles region. This research seeks to identify the magnitude, patterns, and causes of the structural barriers that hinder access to the necessary capital and ever-changing technological tools that can grow and transform ethnic business entrepreneurship. This

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[4] Kymn, C. (2014). Access to Capital for Women- and Minority-owned Businesses: Revisiting Key Variables. Small Business Association Office of Advocacy Issue Brief Number 3. https://www.aeaweb.org/articles?id=10.1257/aer.102.3.532

[5] Bates, T. Jackson, W. Johnson, J. (2007). Advancing Research on Minority Entrepreneurship. *The ANNALS of the American Academy of Political and Social Science, 613*(1), 10–17. https://doi.org/10.1177/0002716207303405

[6] Fairlie, R. & Robb, A. (2010). Disparities in Capital Access between Minority and Non-Minority-Owned Businesses: The Troubling Reality of Capital Limitations Faced by MBEs. U.S. Department of Commerce Minority Business Development Agency. https://www.mbda.gov/sites/default/files/migrated/files-attachments/DisparitiesinCapitalAccessReport.pdf

[7] Dua, A., Mahajan, D., Millan, I. Stewart, S. (2020). COVID-19's effect on minority-owned small businesses in the United States. McKinsey & Company https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19s-effect-on-minority-owned-small-businesses-in-the-united-states Accessed: March 23, 2023

[8] Fairlie, R. (2020). The impact of COVID-19 on small business owners: Evidence from the first three months after widespread social-distancing restrictions. *Journal of economics & management strategy, 29*(4), 727-740.

[9] Fairlie, R., & Fossen, F. M. (2022). Did the Paycheck Protection Program and Economic Injury Disaster Loan Program get disbursed to minority communities in the early stages of COVID-19? *Small Business Economics, 58*(2), 829-842.

research is designed to reach small businesses, micro-businesses, and self-employed individuals who are critical to the survival and economic mobility of communities of color but are typically excluded from existing business studies. To reach these businesses, we partnered with trusted community-based organizations, chambers of commerce, and business associations with existing relationships with small businesses in their communities.

Our analysis of the survey responses and qualitative inputs yields the following key findings:

1. Nearly three-fourths of small ethnic-owned businesses (EOBs) experienced negative COVID-19 impacts and faced numerous barriers to accessing government programs and assistance.
2. Almost a third of small EOBs are energy burdened and struggle to pay their utility bills.
3. Over half of EOBs reported having already been hurt by climate change, and nearly half expect negative impacts in their future.
4. Only a tenth of EOBs businesses in the City of Los Angeles were aware of and understood the consequences of LADWP's transition to 100% renewable energy.
5. Less than a quarter of EOBs in the Los Angeles region have a sustainability plan in place.
6. The priority needs for small EOBs to transition to 100% renewable energy are payment programs to fund upgrades to existing equipment, multilingual educational materials to understand how their business can transition, and new energy efficiency equipment.
7. African American/Black and home-based businesses face more challenges in paying their utility bills than other racial/ethnic groups and storefront businesses.
8. Businesses in low wage industries felt that climate change will have a negative impact on their businesses, and storefront businesses were more likely to anticipate both positive and negative impacts due to climate change.
9. Storefront businesses were more likely to select educational materials to understand how their business can transition, and training for existing staff as their top needs to adapt to 100% renewable energy.
10. LADWP does not currently have a unified strategy to analyze business data to better understand their small business customers in terms of energy consumption and program participation.
11. Direct outreach to small ethnic-owned businesses, small ethnic business serving organizations, and in-language accessibility is necessary to reach entrepreneurs who are typically excluded from traditional business studies.

12. Outreach events should include opportunities for two-way interaction–LADWP providing critical information on small-business programs to EOBs, and EOBs providing recommendations to LADWP on EOB priorities and needs.

The findings enable us to formulate evidence-based policy recommendations that promote an equitable clean energy transition for small EOBs.

Based on the empirical findings from the survey, the pilot workshops, and qualitative input from stakeholders, we offer five main recommendations for LADWP:

1. Evaluate recent and current small-business energy efficiency programs to identify which have been effective in engaging small EOBs to effectively reduce energy consumption and costs.
2. Develop more targeted policies, programs, and practices to assist small businesses and eliminate participation barriers that EOBs face.
3. Partner with business serving community-based organizations or agencies to provide technical assistance and better engage small business customers, particularly EOBs.
4. Collect more robust and precise data on small business customers to prioritize outreach to the most disadvantaged businesses and neighborhoods.
5. Examine the legal mechanisms that would enable them to provide financial assistance to small businesses and EOBs to reduce barriers to access substantive energy efficiency equipment upgrades, which are typically cost-prohibitive.

This report (chapter) is organized into five parts:

(1) Background on Small Ethnic-Owned Businesses
(2) UCLA CNK-LPPI Study (our research approach)
(3) Findings and Discussion
(4) Recommendations
(5) Conclusion

(1) Background on Small Ethnic-Owned Businesses

This section summarizes what is known about EOBs based on existing literature. There are a sizable number of publications on EOBs (also known as minority-owned businesses) and the structural factors that place them at a disadvantage. In particular, EOBs have limited access to capital, making it more difficult for them to adjust to new requirements and needs, such as those associated with climate change. Unfortunately, there is little published on EOBs facing climate change, specifically looking at the transition to 100% renewable energy.

Access to Capital

Prior research on the impacts of the COVID-19 pandemic exemplifies the disparities between White and non-White businesses in accessing capital and resources. Ethnic businesses face difficulties in applying for and receiving loans due to racial discrimination broadly and limited social capital.[10] Multiple studies have found that ethnic minorities and women entrepreneurs are more likely to be denied loans; therefore, these groups are discouraged from applying for loans as it takes up limited time and resources to deal with time-consuming and often tedious applications.[11] Additional studies have found that EOBs, particularly Black-owned businesses, start their business endeavors with less capital than White-owned businesses, limiting their ability to grow and remain competitive with better-resourced businesses.[12]

COVID-19 further revealed existing inequities that small businesses faced, with EOBs experiencing larger disparities. Many small businesses adapted and changed during the

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[10] Fairlie, R. W., Robb, A. M., & Hinson, D. (2010). Disparities in Capital Access Between Minority and Non-minority-owned Businesses: US Department of Commerce, Minority Business Development Agency.https://www.mbda.gov/sites/default/files/migrated/files-attachments/DisparitiesinCapitalAccessReport.pdf
Lyons-Padilla, S., Markus, H., Monk, A., Radhakrishna, S., Radhika, S., Dodson, N., Eberhardt, J. (2019). Race influences professional investors' financial judgments. *PNAS*. *116*(35) 17225-17230. https://doi.org/10.1073/pnas.1822052116

[11] Asiedu, E., Freeman, J., Nti-Addae, A. (2012). Access to Credit by Small Businesses: How Relevant Are Race, Ethnicity, and Gender? *American Economic Review*
Kymn, C. (2014). Access to Capital for Women- and Minority-owned Businesses: Revisiting Key Variables. Small Business Association Office of Advocacy Issue Brief Number 3. https://www.aeaweb.org/articles?id=10.1257/aer.102.3.532
Atkins, R, Cook, L., and Seamans, R. (2022). "Discrimination in lending? Evidence from the Paycheck Protection Program." *Small Business Economics*. *58* 843–86. https://link.springer.com/article/10.1007/s11187-021-00533-1

[12] Robb, A. & Fairlie, R. (2007). Access to Financial Capital among U.S. Businesses: The Case of African American Firms. *The ANNALS of the American Academy of Political and Social Science 613*(1). https://doi.org/10.1177/0002716207303578
Bates, T. & Robb, A. (2013). Greater Access to Capital Is Needed to Unleash the Local Economic Development Potential of Minority-Owned Businesses. *Economic Development Quarterly. 27*(3). https://doi.org/10.1177/0891242413477188

pandemic to support their community and the economic well-being of their neighborhoods.[13] However, small EOBs were often in "more precarious conditions" prior to the pandemic, leaving them vulnerable to being "distressed."[14] As a result of precarious financial situations and limited loaning options due to discriminatory lending practices, unregulated lenders have preyed on small businesses by providing fast cash at high-interest rates with hidden fees.[15]

Limited access to capital and discriminatory barriers to obtaining resources are structural problems that also create challenges for EOBs adapting to climate change and transitioning to 100% renewable energy. And so, EOBs are starting at a disadvantage, and new energy demands and requirements are likely to compound their struggles.

Sustainability and Climate Change

Previous literature has failed to analyze the specific relationship between sustainability practices and attitudes toward climate change from the perspective of EOBs and ethnic entrepreneurs. The current literature details attitudes from small ethnic business owners and entrepreneurs as a monolith rather than detailing the unique experiences of EOBs. Additionally, most current literature focuses on small businesses, without an emphasis on race/ethnicity, and on businesses located outside of the United States.

Jansson et al.[16] found that small and medium-sized enterprises (SMEs) see both the market and entrepreneurial advantages of sustainability. Their study found that SMEs are more likely to adopt sustainable practices if their customers and relevant parties place pressure on them. However, Revell et al. found that SMEs associate eco-efficiency measures as costly, and 86% of survey respondents did not believe that they

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[13] Dua, A., Mahajan, D., Millán, I. Stewart, S. (2020). COVID-19's effect on minority-owned small businesses in the United States. McKinsey & Company https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19s-effect-on-minority-owned-small-businesses-in-the-united-states Accessed: March 23, 2023

[14] Dua, A., Mahajan, D., Millan, I. Stewart, S. (2020). COVID-19's effect on minority-owned small businesses in the United States. McKinsey & Company https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19s-effect-on-minority-owned-small-businesses-in-the-united-states Accessed: March 23, 2023

[15] Weaver, E. Louis, T., Brown, G., McShane, C. (2016). Unaffordable and Unsustainable: The New Business Lending on Main Street. Opportunity Fund. https://aofund.org/app/uploads/2021/03/Unaffordable-and-Unsustainable-The-New-Business-Lending-on-Main-Street_Opportunity-Fund-Research-Report_May-2016.pdf

[16] Jansson, J., Nilsson, J., Modig, F., & Hed Vall, G. (2017). Commitment to Sustainability in Small and Medium-Sized Enterprises: The Influence of Strategic Orientations and Management Values. *Business Strategy and the Environment. 26* 69-83. https://doi.org/10.1002/bse.190101

had a significant environmental impact and therefore felt less inclined to participate in energy-saving measures.[17]

Overall, there is a paucity of information regarding EOBs' attitudes toward sustainability practices and barriers to addressing climate change.

Energy Burden

Compared with the extensive and growing body of research on disparities in residential energy usage and burdens, research on small businesses is limited, with fewer publications. Energy burden refers to the portion of household income that is spent on utility bills.[18] The existing literature on energy burden and small businesses primarily focuses on the sector, with insufficient focus on EOBs. Most studies, however, acknowledge diversity among small businesses in terms of their energy usage and needs, varying by their size, industry, and culture.

Multiple reports[19] have found that small businesses are remarkably busy and are unable to focus on sustainability and energy efficiency programs. Many of them, especially EOBs, "lack capital to make investments" in energy efficiency equipment or upgrades.[20] While small businesses stated that an utmost priority was saving money, many felt that cost-saving energy efficiency programs may be scams and have too many upfront costs. Small business owners also reported having a general distrust of their utility company, making them unwilling to participate in the programs.[21]

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[17] Revell, A., Stokes, D., Chen, H. (2010). Small Business and the Environment: Turning Over a New Leaf? *Business Strategy and the Environment. 19* 273-288. DOI: 10.1002/bse.628

[18] Please see Chapter 14: Energy Affordability and Policy Solutions Analysis for more information on Energy Burden and Energy Insecurity as it relates to residential customers and utilities more broadly.

[19] Sledd, A. & Stika, N. (2016). Making Efficiency Work for Small Business Landlords and Tenants. https://www.imt.org/news/making-efficiency-work-for-small-business-landlords-and-tenants/. Accessed: March 23, 2023.
EnergySavvy. (2016). The Forgotten Middle: Engaging Small-to-Midsize Businesses. https://assets.cdnma.com/7083/assets/White_Paper_Engaging_SMBs.pdf
Nowak, S. (2016). Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. Report Number U1607. American Council for Energy-Efficient Economy. https://www.aceee.org/research-report/u1607

[20] Nowak, S. (2016). Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. Report Number U1607. American Council for Energy-Efficient Economy. https://www.aceee.org/research-report/u1607

[21] Nowak, S. (2016). Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. Report Number U1607. American Council for Energy-Efficient Economy. https://www.aceee.org/research-report/u1607

To further encourage small businesses to participate in energy efficiency programs, a report from the American Council for an Energy-Efficient Economy (ACEEE)[22] found that small business programs perform best with programs that "offer financing, especially on-bill financing, and on-bill repayment" and that participation significantly falls on programs that charge interest rates. They recommend that utility companies offer grants and/or programs with 0% financing for energy efficiency programs and retrofits.

One method to encourage energy efficiency program participation amongst small businesses is to utilize a businesses' social networks. An EnergySavvy report[23] found that small businesses often do not view their neighboring businesses as competition but, rather, as collaborators and commonly share best practices and suggestions with each other. Utilities can draw upon trusted business-serving organizations to connect small businesses to one another for resource and skill sharing.[24]

A remaining challenge in small business participation is that many small businesses are tenants and not the decision-makers for their energy efficiency upgrades.[25] More outreach to landlords and building owners may provide useful insights into the unique needs of small businesses that do not own their storefronts or dwelling units.

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[22] Nowak, S. (2016). Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. Report Number U1607. American Council for Energy-Efficient Economy. https://www.aceee.org/research-report/u1607

[23] EnergySavvy. (2016). The Forgotten Middle: Engaging Small-to-Midsize Businesses. https://assets.cdnma.com/7083/assets/White_Paper_Engaging_SMBs.pdf

[24] Nowak, S. (2016). Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. Report Number U1607. American Council for Energy-Efficient Economy. https://www.aceee.org/research-report/u1607

[25] Nowak, S. (2016). Big Opportunities for Small Business: Successful Practices of Utility Small Commercial Energy Efficiency Programs. Report Number U1607. American Council for Energy-Efficient Economy. https://www.aceee.org/research-report/u1607

(2) UCLA CNK-LPPI Study

Given the lack of information on EOBs, climate change, and the transition to 100% renewable energy, the UCLA Center for Neighborhood Knowledge and UCLA Latino Policy and Politics Institute conducted a study to generate actionable knowledge relevant to the Los Angeles Department of Water and Power. The study's goals are to gain insights into energy affordability barriers and opportunities for small EOBs and provide information to LADWP and other stakeholders to help develop effective and equitable policies and programs.

The study was conducted in partnership with LADWP and various community-based organizations and business-serving organizations. The study aimed to generate preliminary data to inform future efforts around a just transition to 100% renewable energy for small EOBs that are served by LADWP. The study used a community partnership research model and an online survey to draw both qualitative and quantitative findings.

Partnership Model

Following best equity practices, we partnered with business-serving community-based organizations, business associations, and chambers of commerce to form an advisory committee with the intention of reaching LADWP's small business customers with a particular focus on small EOBs. We sought diversity in partners in terms of size, type of organization, and demographics of the businesses they serve.

- **Size**: we sought to include a range of well-established partners with a large network of small businesses, to smaller partners who complete more on-the-ground work and have a closer relationship with the businesses that they served.
- **Type of organization**: we wanted to reach out to nonprofits, chambers of commerce, small business collaboratives, and vendor associations to ensure that we reached a diversity of small businesses.
- **Demographics**: we wanted to reach out to partners who serve Latino, Black, and/or Asian small business owners and entrepreneurs, as well as partners who work with businesses that have a traditional brick-and-mortar establishment, work-from-home, and/or are street vendors.

The following organizations served as our partners:[26]

- **Asian Business Association - Los Angeles**
- **Asian Pacific Islander Small Business Program**
- **Black Restaurant Coalition of Los Angeles**

[26] Please see Appendix B. for more information on the organizations which partnered with CNK and LPPI for this project.

- **Greater Los Angeles African American Chamber of Commerce**
- **Inclusive Action for the City**
- **LA Legal Assistant**
- **New Economics for Women**

Survey Methodology

This section documents the development and deployment of our online survey, as well as the processing of responses. The survey was approved by the UCLA Institutional Review Board to protect the privacy and confidentiality of survey respondents.

Questionnaire Development

The advisory committee advised and assisted with the creation and deployment of the online survey questionnaire, our primary research instrument. We solicited feedback on the survey questionnaire from our advisory committee to address the challenges facing the businesses in their small business network as it pertains to access to resources, energy burden, and a just transition.

The final version of the questionnaire enabled us to collect sociodemographic and socioeconomic information, information on energy consumption and bills, major energy-using equipment, and behavioral questions related to sustainability practices and participation in energy cost-saving programs. The six survey modules include:

1. **Firm characteristics;**
2. **COVID-19 impacts and relief programs;**
3. **Energy burden;**
4. **Climate-change impacts;**
5. **Sustainability practices; and**
6. **Programmatic needs**

The questionnaire was translated into an online platform using Qualtrics. Qualtrics is a web-based survey tool widely used by academic researchers to conduct surveys and collect data (https://www.qualtrics.com). The online version was tested twice by our advisory committee and relevant LADWP teams. The survey was available in English, Spanish, Chinese, Vietnamese, Thai, and Korean based on feedback from our community partners to reach non-English speaking business owners and entrepreneurs in the Los Angeles region.

Sampling Frame

The target population for the survey was EOBs in the Los Angeles region with a focus on current LADWP ratepayers. We used convenience panel sampling within the City of Los Angeles but did not exclude Los Angeles County or Orange County residents. We

determined that a convenience sample, utilizing our advisory committee for deployment, was the best way to reach small EOBs. Our advisory committee and community partners, who are trusted by their small business networks, could do outreach to small businesses that are typically excluded from business studies. While this method enabled us to reach EOBs more easily in our advisory committee's network, it could have excluded businesses that do not receive assistance from these organizations and may be most in need of assistance.

Our advisory committee performed outreach to their network of small businesses via email, e-newsletters, outreach events, and appointments. Some partners used social media to solicit participation. For social media promotion, we asked that the survey not be posted to decrease spam responses, as we were offering a monetary incentive for completing the survey. Below are two examples of how our community and business partners performed outreach to their networks.

1. **LA Legal Assistant informed their members of the survey via email and when clients reached out for legal assistance.**
2. **The Asian Pacific Islander Small Business Program informed their members of the survey via e-newsletter, social media, and through technical assistance appointments with clients.**

An advantage of this sampling strategy is the inherent ability to oversample small businesses in ethnic economic enclaves where our community/business partners operated. These neighborhoods include Boyle Heights, Pacoima, South Los Angeles, Leimert Park, Chinatown, Koreatown, Little Tokyo, Thai Town, and Filipinotown. Moreover, this approach enhanced our ability to capture responses from home-based businesses, street vendors, micro-businesses, and other types of firms that are typically excluded from business studies.

Deployment

The online survey was launched in October 2022 and concluded in January 2023. Following best equity practices, we provided a $20 gift card for the first five hundred survey participants. We determined the gift card dollar amount through feedback from our partners who stated it was best to provide as many gift cards as the budget allowed, with $20 being the minimum price for participants. There were three waves of solicitation. The first was the initial invitation to participate, the second was a reminder to participate, and the third was a closeout message thanking those who responded and allowing others a last chance to participate. We used different links (URLs) for each of the waves to better track progress and assess responses. By survey's conclusion, we collected 549 valid responses.

To reach our target population, the survey was filtered for respondents who were owners or in executive decision-making positions and firms with less than five hundred full and part-time employees. We recognize that there is not a unified definition of what constitutes a small business in the context of utilities, but the threshold we used is reasonable and used by the U.S. Small Business Administration.[27] Appendix A provides additional information on how small businesses are defined by utility providers.

Quality Control and Recoding

Online surveys have inherent problems, including false responses when there are monetary incentives. We attempted to overcome these issues by asking our partners to carefully limit their outreach to only their members and affiliates. This request was made multiple times, both in emails and virtual meetings. Despite this, one partner posted the survey link on Twitter, which resulted in a substantial number (over 8,000) of spam responses. Consequently, the CNK/LPPI team dedicated extra time and resources to verify valid responses. Below are the parameters used to verify them:

1. **Responses only in Los Angeles County and Orange County (verified by situs address and/or IP address)**
2. **Responses with high validity scores according to Qualtrics Diagnostics [28]**
3. **Responses that fit the criteria for the study population (e.g., businesses with under five hundred employees, the participant was in an executive decision-making position, and the survey was completed)**
4. **Responses without duplicate IP addresses or email addresses**
5. **Further analysis**
    a. **Surname matching**
    b. **Address matching**
    c. **Email addressing with the abbreviated email addresses provided by some partners.**

Of the 549 respondents, 12% utilized our translation feature on Qualtrics to complete the survey. Three percent responded in Spanish, 2% responded in Korean, 8% responded in Chinese (simplified), less than a percent responded in Thai, and less than a percent responded in Chinese (traditional). Of the 549 respondents, 76% of respondents were located in the City of Los Angeles, which LADWP serves.

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[27] "The Office of Advocacy generally defines a small business as an independent business having fewer than 500 employees." Please see: https://cdn.advocacy.sba.gov/wp-content/uploads/2021/12/06095731/Small-Business-FAQ-Revised-December-2021.pdf

[28] Qualtrics (nd.) Fraud Detection. https://www.qualtrics.com/support/survey-platform/survey-module/survey-checker/fraud-detection/ Accessed: April 6, 2023.

We recoded several variables for the analysis of responses. Participants were asked to choose one or two industries from the North American Industry Classification System (NAICS).[29] We then analyzed the respondents who selected two industries (17%) or selected "Other (please specify):" (12%), and categorized the responses into one NAICS category.[30] The most common industries selected or categorized were Accommodation and Food Service (22%), and Retail Trade (18%). To further collapse the industry variable, we created a category for low, medium, and high earnings. We used the American Community Survey Public Microdata Sample (ACS PUMS) data[31] to determine the weighted median earnings for each NAICS code and then divided the NAICS codes into the corresponding low, medium, or high earnings.[32] For analysis, we created four mutually exclusive race/ethnicity categories: non-Hispanic Black/African American, non-Hispanic Asian, Hispanic/Latino, and non-Hispanic White/Other/Two or More.

We asked survey participants two questions to understand the type of location where they conduct business, one based on ownership and residential versus commercial, and the other based on the type of building structure. For analysis, we combined the two questions above to have two mutually exclusive outcomes: storefront or home-based/other.

Response Analysis

We first used the survey questionnaire data to produce descriptive evidence using frequencies illustrating firm characteristics, programmatic needs, attitudes towards transitioning to 100% renewable energy, energy burden, climate change impacts, and sustainability attitudes. Next, we conducted a bivariate analysis between select firm characteristics: race/ethnicity, industrial cluster, and home-based/storefront businesses and three variables of interest to our community partners and LADWP: programmatic needs, climate change impacts, and energy burden. We used a chi-square test to determine if inter-group differences were statistically significant. Due to the convenience

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[29] United States Census Bureau. North American Industry Classification System. See: https://www.census.gov/naics/?58967?yearbck=2022

[30] To select the category, we first looked up the business name at Buzzfile.com (see: https://www.buzzfile.com/Home/Basic) and used the NAICS code described there, if it was not on Buzzfile.com we then looked up the businesses at the Los Angeles City Business database (see: https://data.lacity.org/Administration-Finance/Listing-of-Active-Businesses/6rrh-rzua). For the remaining respondents, we did an internet search to find their business websites, LinkedIn profiles, Yelp pages, or other internet presence to make our best judgments. After going through these steps, we were left with twenty respondents that we could not classify into a single NAICS code.

[31] 2017-2021 5-year estimates ACS PUMS https://www2.census.gov/programs-surveys/acs/data/pums/2021/5-Year/

[32] Please see Appendix C. for more details on the recoding methodology.

sampling method and oversampling of small EOBs, the analyses did not utilize sampling weights to create a representative sample.

Qualitative Input

In addition to the survey, we solicited qualitative input through several avenues. The first was input from our community/business partners. As a part of our frequent meetings to develop the survey, we also asked community partners to tell us what they considered to be the major challenges facing their affiliates and members, who were the most vulnerable, and what actions and programs were necessary to help businesses transition to 100% renewable energy. The second avenue was comments from LADWP staff, including those focusing on commercial customers. In meetings with them, we asked them about what small-business programs existed, current outreach efforts to EOBs and disadvantaged communities, and plans for the future. Almost all of the meetings with community/business partners and LADWP staff were conducted remotely.

The third source of qualitative insights came from workshops organized in partnership with local businesses serving community-based organizations and LADWP. The purpose of the workshops was to connect small business owners and entrepreneurs to LADWP's energy efficiency programs and resources. This effort offered the utility an opportunity to gain experience in collaborating with groups that are closely tied to and trusted by EOBs. These pilot workshops can serve as a foundation for future outreach efforts.

Moreover, we organized these workshops to obtain qualitative insights from the organizations, participants, and LADWP staff to complement our survey. The workshops were an opportunity for small business owners to voice their concerns and ask questions regarding a transition from gas and other fossil fuels to renewable energy. These workshops brought LADWP, community partners, and the research team together to better understand the needs of small business owners and entrepreneurs.

These workshops were not included in CNK/LPPI's task order and served as pilots for future LADWP workshops. In total, we organized two workshops with Inclusive Action for the City (Inclusive Action) and Asian Pacific Islander Small Business Collaborative (API SBP). Our original plan was to host three workshops; however, due to unforeseen circumstances, we were unable to host the third workshop. This was a learning experience about the difficulties and unexpected disruptions when conducting outreach and is something that LADWP should take into consideration for future workshops.

The LADWP's Energy Efficiency and Small Business Support (SBS) Group teams presented a short presentation on energy efficiency programs for commercial and residential customers, as many small business owners operate home-based operations. The presentation included an overview of LADWP's LA100 Plan and highlighted information pertinent to small and micro-businesses. The LADWP presentation was followed by a question-and-answer (Q&A) portion and listening session so that small business owners and entrepreneurs could clarify any questions and better engage LADWP's energy efficiency programs.

(3) Findings and Discussion

This section reports the major findings from our survey, along with qualitative insights. It is organized into four parts: (1) Respondent Characteristics; (2) Key Survey Findings; (3) Subgroup Variations; and (4) Qualitative Insights.

Respondent Characteristics

We specifically performed outreach to EOBs in the Los Angeles region (Los Angeles and Orange County; N=549), with 38% of respondents identifying as African American/Black; 22% Hispanic/Latino; 19% non-Hispanic Asian, and the remaining 21% identifying as non-Hispanic White, two or more races, Other, or refused to respond.

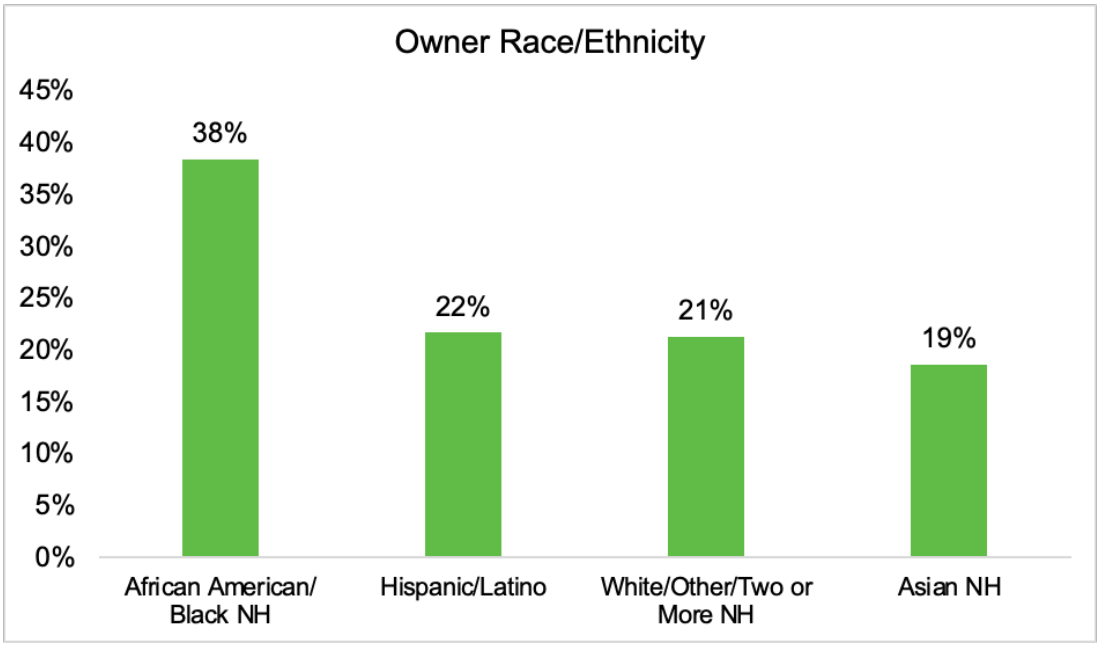

Figure 1. Racial and ethnic background of the owner(s) of businesses

Over half of the respondents (53%) have very small businesses with 1 to 4 full or part-time employees; 19% have 5 to 9 employees; 23% have 10 to 49 employees; and 6%

have 50 to 499 employees. We excluded businesses that had over five hundred employees from participating in the survey as it did not coincide with our definition of a small business.

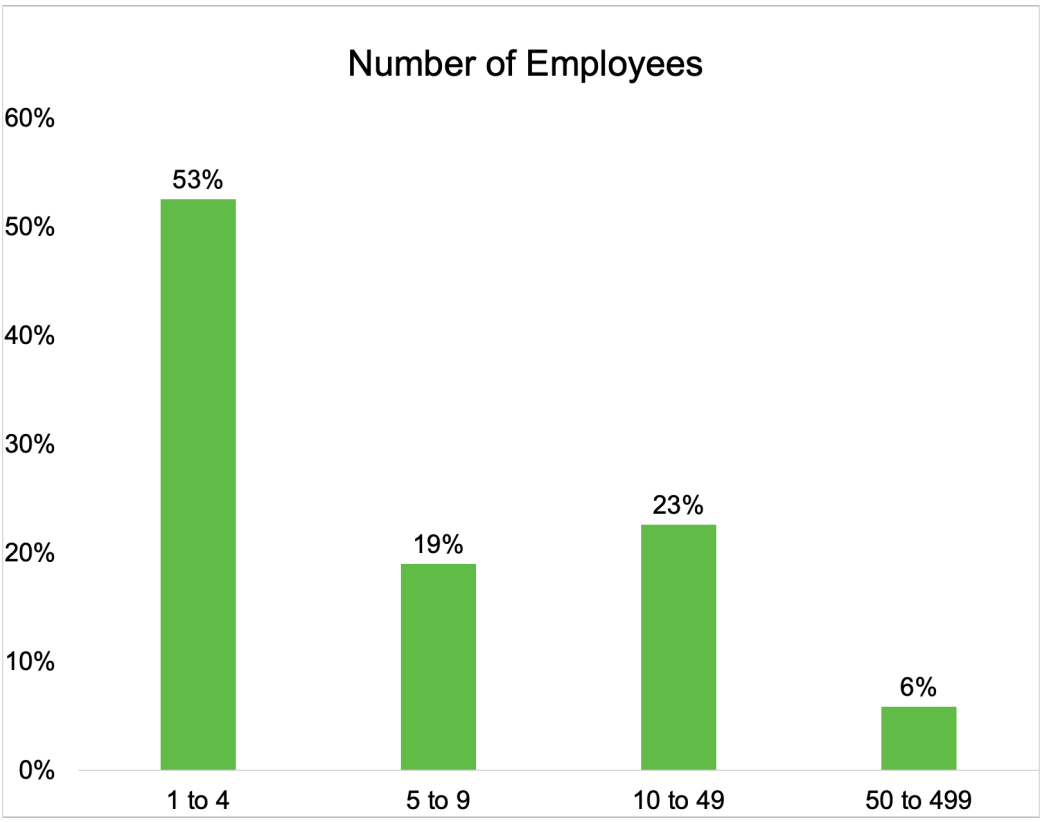

Figure 2. Number of employees

We excluded responses outside of Los Angeles County and Orange County, and overwhelmingly received small business survey participants located in Los Angeles County (96%). LADWP serves the City of Los Angeles, where 75% of our survey participants conduct business. Additionally, we found that 57% of the small business participants conduct business within zip codes with populations of 80% or more people of color, according to the American Community Survey 2017-2021 5-Year Estimates.[33]

[33] U.S. Census Bureau (2017-2021). Hispanic or Latino Origin by Race American Community Survey 5-year estimates. Retrieved from <https://censusreporter.org>

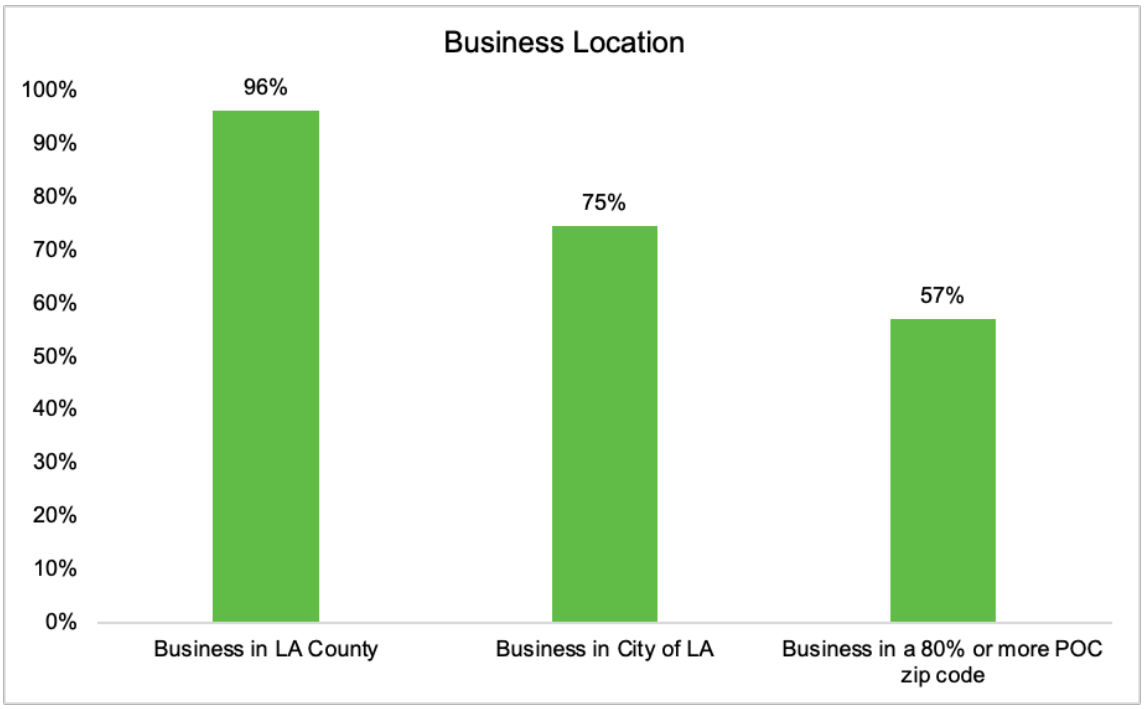

Figure 3. Business location

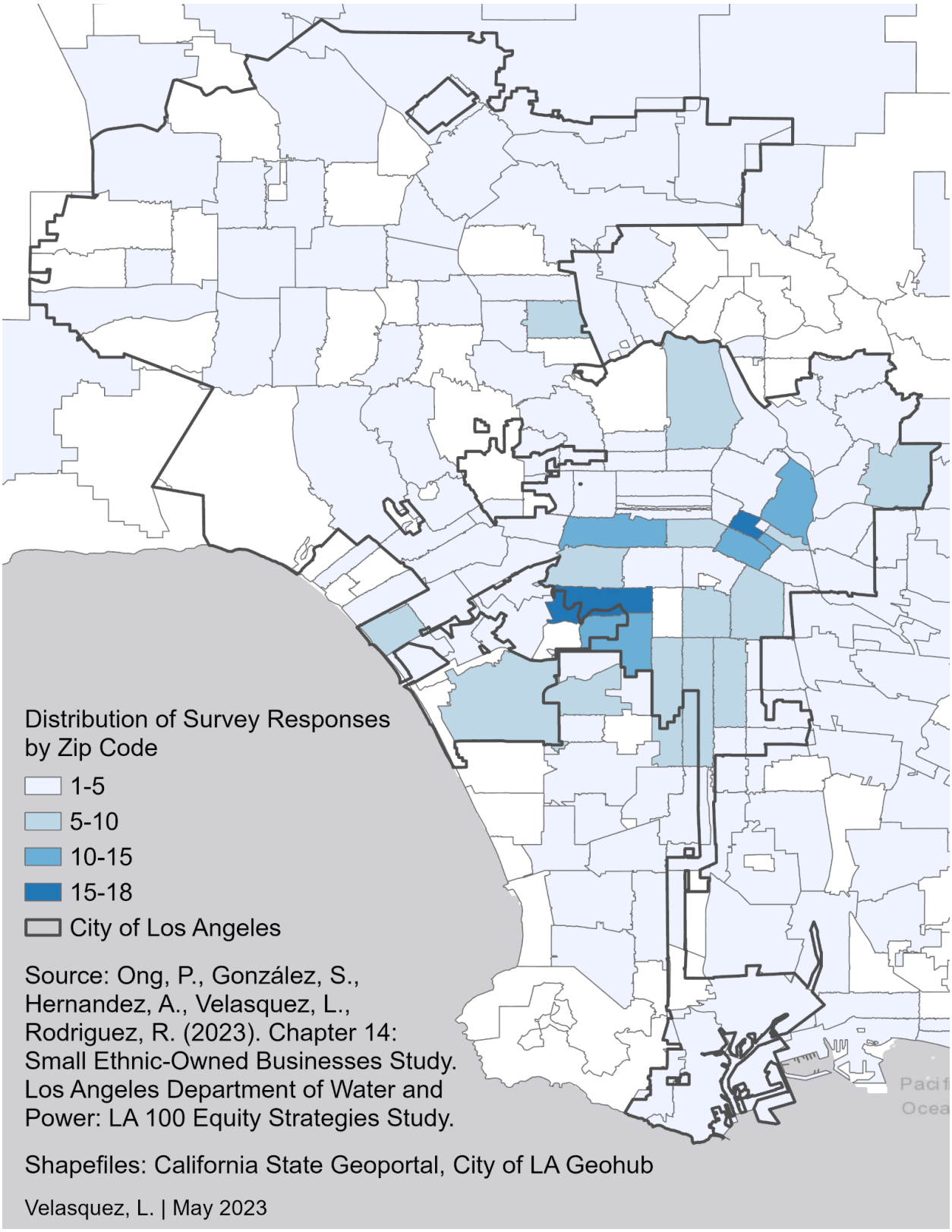

Figure 4. Map of distribution of survey responses in the City of Los Angeles

Over half (55%) of the survey respondents work in low wage industries, less than a third (27%) in medium wage industries, and only 16% in high wage industries.

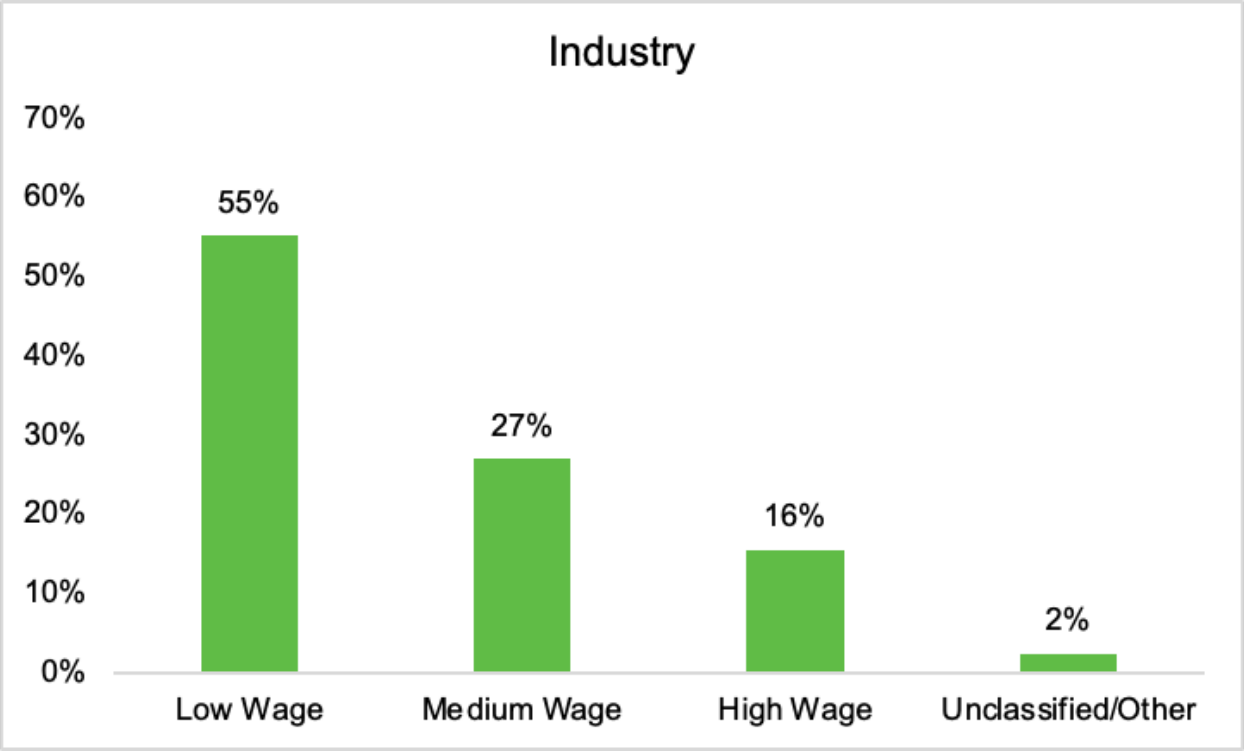

Figure 5. Industry wages

Most survey respondents (59%) conduct business in a storefront, whereas the remainder (42%) conduct business from their home or another non-traditional location (i.e., street vending).

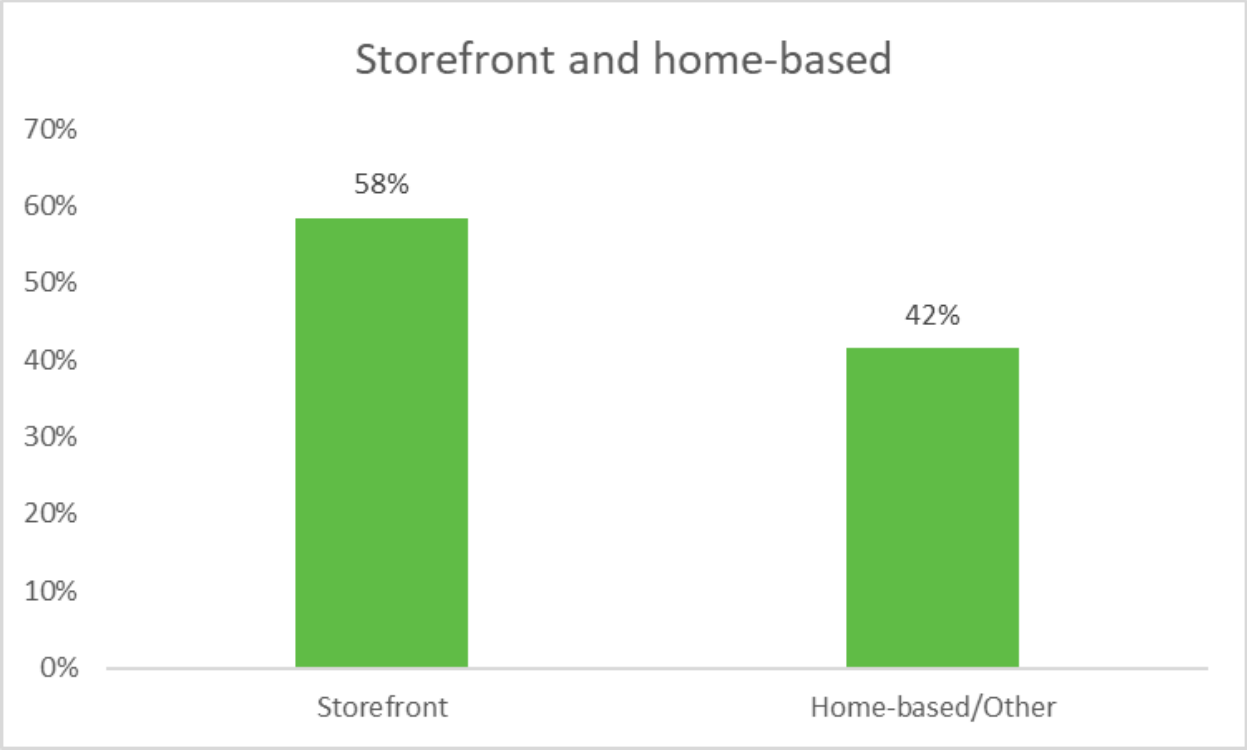

Figure 6. Storefront vs. home-based/other businesses

Key Survey Findings

Analysis of survey responses, we identified the following findings:

1. ***Nearly three-fourths of small ethnic-owned businesses (EOBs) experienced negative COVID-19 impacts and faced numerous barriers to accessing government programs and assistance.***

As the literature previously indicated, many small EOBs were in precarious financial situations prior to the COVID-19 pandemic, making them more vulnerable to economic shocks.[34] We found that 71% of survey participants' businesses experienced either a large or moderate negative effect due to the pandemic. While 69% of survey participants applied for financial assistance from the federal, state, or local government during the pandemic, 38% of those who applied did not receive any assistance. For the businesses which did not apply for assistance, they either did not know about the programs, had difficulties meeting eligibility requirements, did not understand how to apply, or had other reasons for not applying.

[34] Dua, A., Mahajan, D., Millán, I. Stewart, S. (2020). COVID-19's effect on minority-owned small businesses in the United States. McKinsey & Company https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19s-effect-on-minority-owned-small-businesses-in-the-united-states Accessed: March 23, 2023

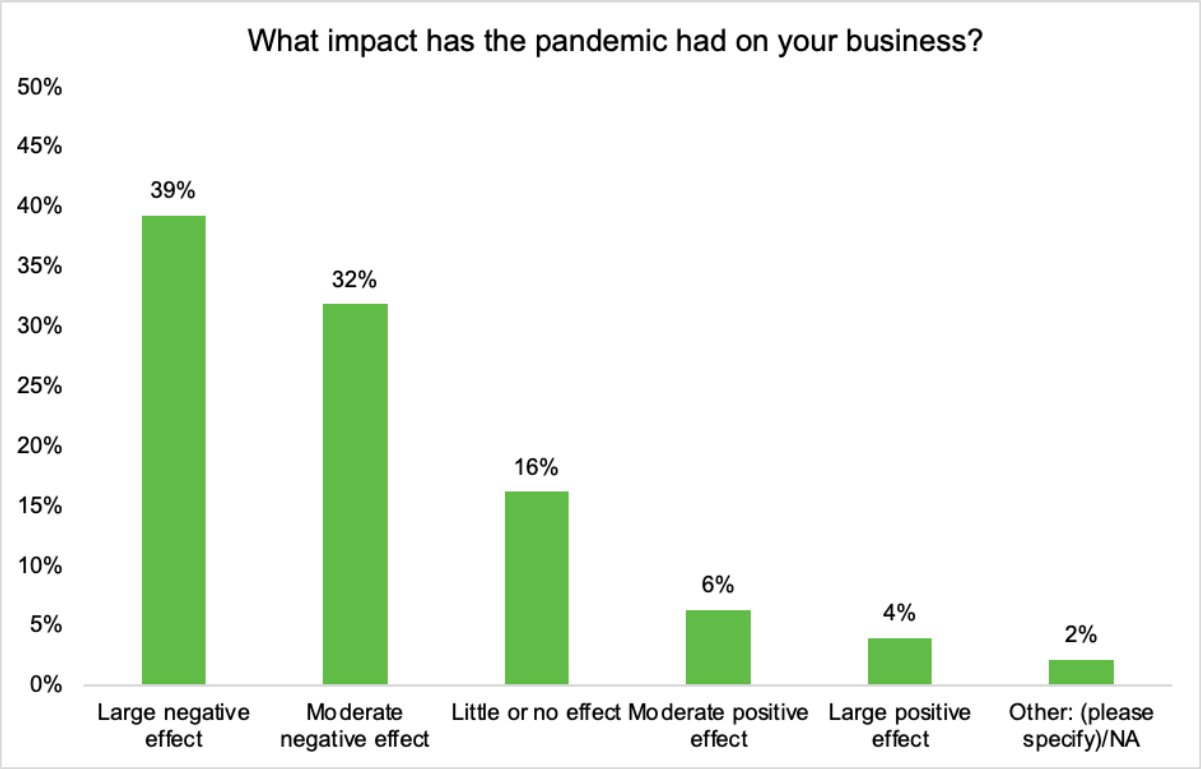

Figure 7. Pandemic Impact on business

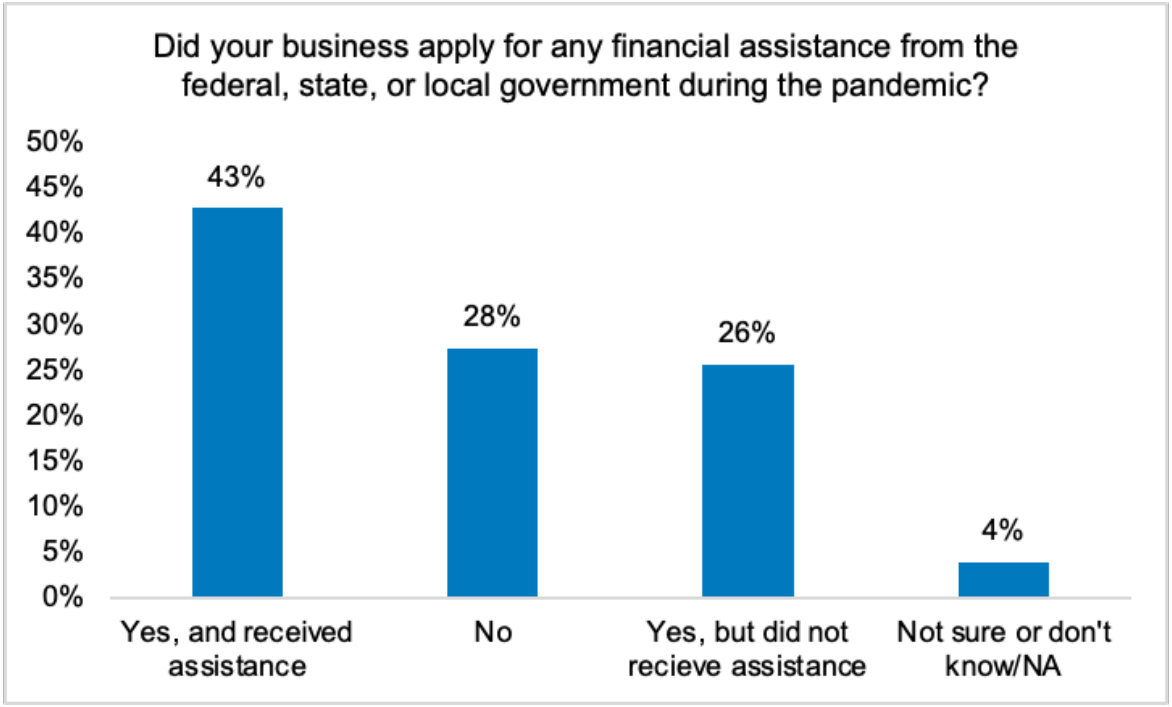

Figure 8. Financial governmental assistance during the pandemic

EOBs have fewer resources to adapt and adjust to impending climate change.[35] As LADWP transitions to 100% renewable energy, they must prioritize small EOBs to protect their economic vitality.

2. *Almost a third of small EOBs are energy burdened and struggle to pay their utility bills.*

Approximately half (51%) of the small business survey respondents utilize a commercial utility account, over a third (37%) use their residential account for their small business energy needs, and the remaining respondents (13%) were not sure or did not respond.

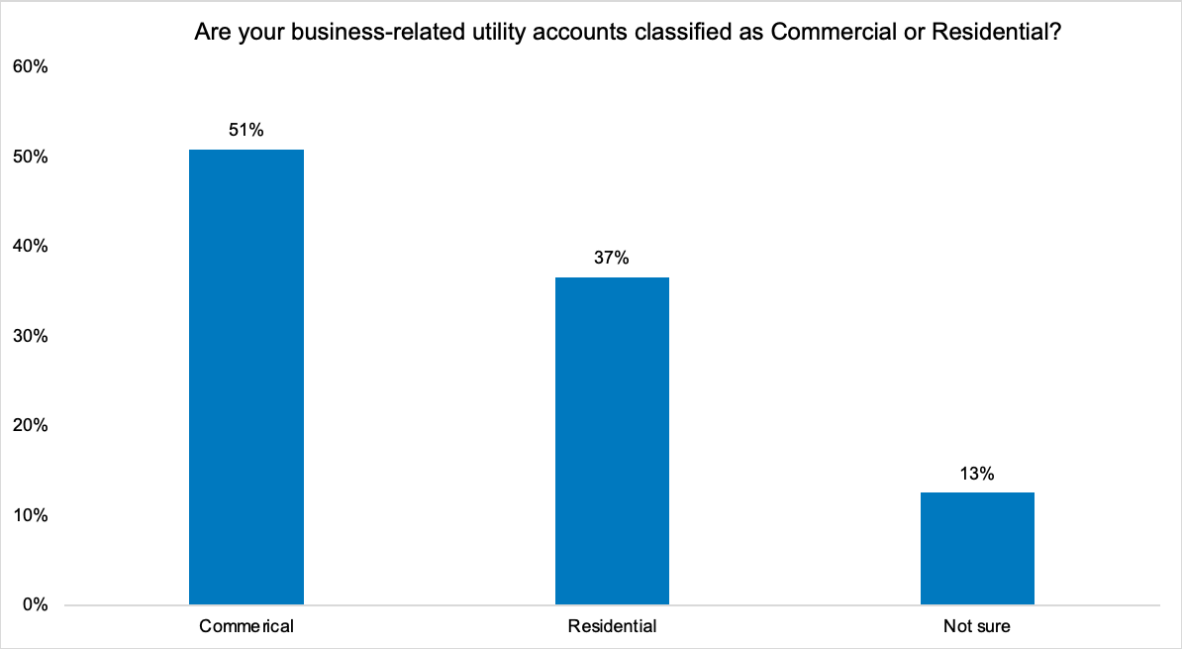

Figure 9. Commercial or Residential business self-classification

Thirty-nine percent of respondents have a separate business account for their utilities, 30% of respondents have a utility account included in another account (e.g. in a residential account for home-based business), 23% of respondents have their utility account paid by their landlord, and the remaining 9% are not sure or don't know if their business has its own utility account.

[35] Hill, Malcolm R., J. Grahame Boocock, Laurie McAulay, and Sarah L. Higginson. "Impacts of climate change agreements on British small and medium-sized enterprises." *Energy & Environment* 22(4): 343-359. https://doi.org/10.1260/0958-305X.22.4.3
Bates, T. & Robb, A. (2013). Greater Access to Capital Is Needed to Unleash the Local Economic Development Potential of Minority-Owned Businesses. Economic Development Quarterly. 27(3). https://doi.org/10.1177/0891242413477188

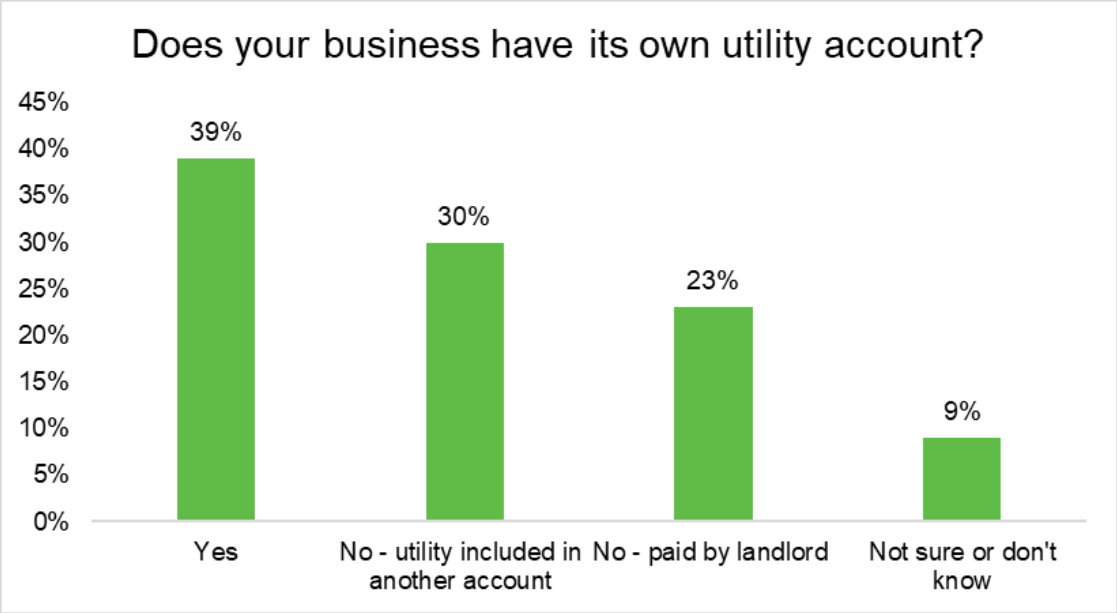

Figure 10. Utility business accounts

The majority of respondents (66%) have only been behind on their utility bill for one month or less. Less than a quarter (23%) of respondents have been two or more months behind on their utility bill this year, indicating that they are experiencing challenges in paying their utility bills.

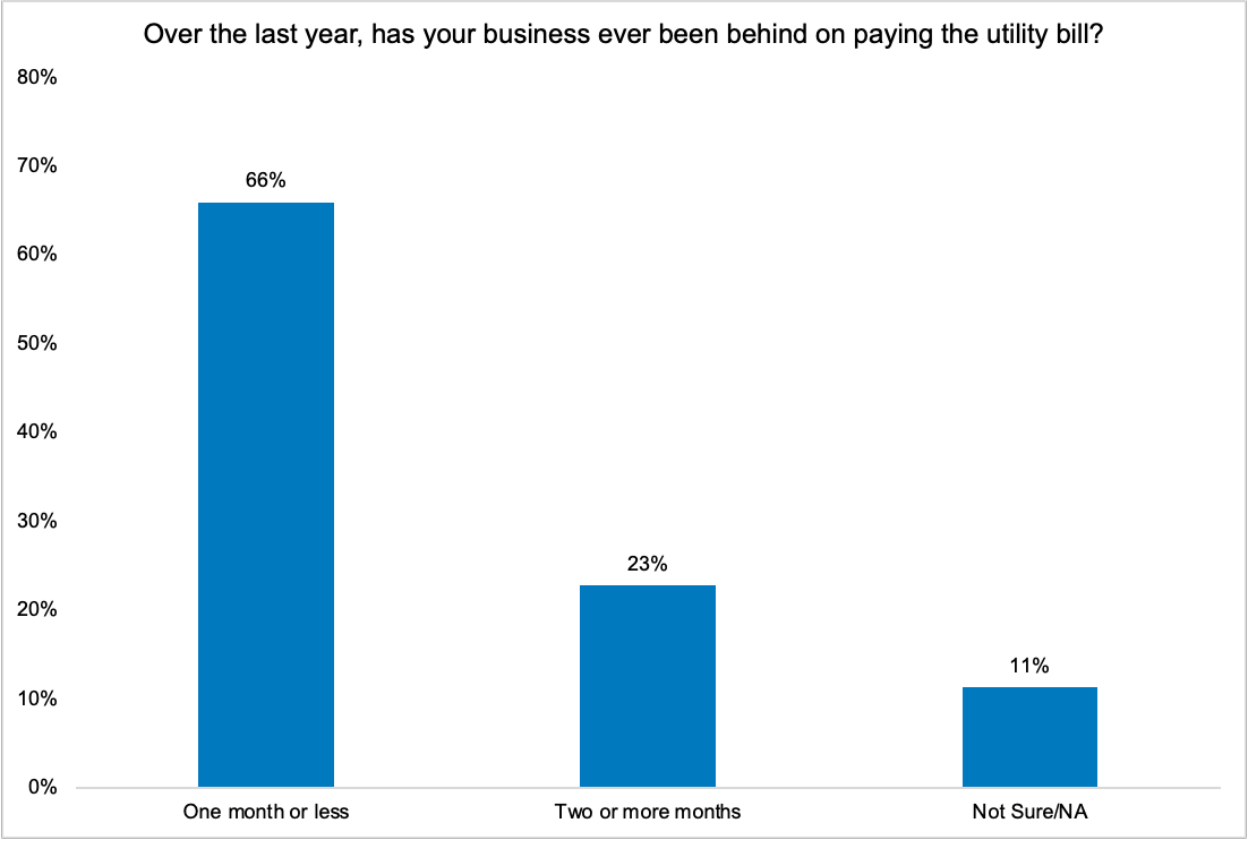

Figure 11. Utility bill burden

Small businesses are not a monolith, and their utility needs vary by account type (residential or commercial), race/ethnicity, business type (brick-and-mortar or home-based), along with many other factors. Additionally, many small businesses in the Los Angeles area conduct business as street vendors, via food stalls, or other nontraditional business structures. This study was unable to gather a representative sample of more non-traditional businesses (see Figure 12 for more details). To better serve small business customers, LADWP must collect more data on their characteristics and needs.

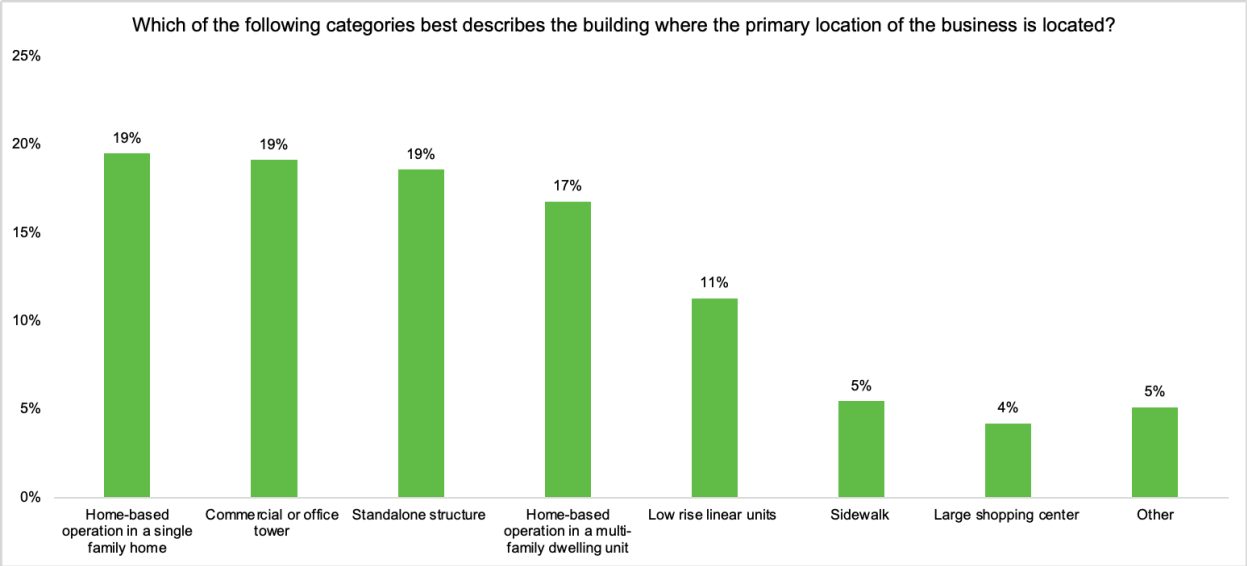

Figure 12. Categorization of business locations

3. Over half of EOBs reported having already been hurt by climate change, and nearly half expect negative impacts in their future.

Over half of survey respondents stated climate change has had an observable negative impact on their businesses either through difficulties in operation due to higher costs, by lowering the amount of revenue or the number of customers, or both. Around 29% have not experienced any effect on their business due to climate change. A small minority (13%) stated that climate change has created new opportunities to expand.

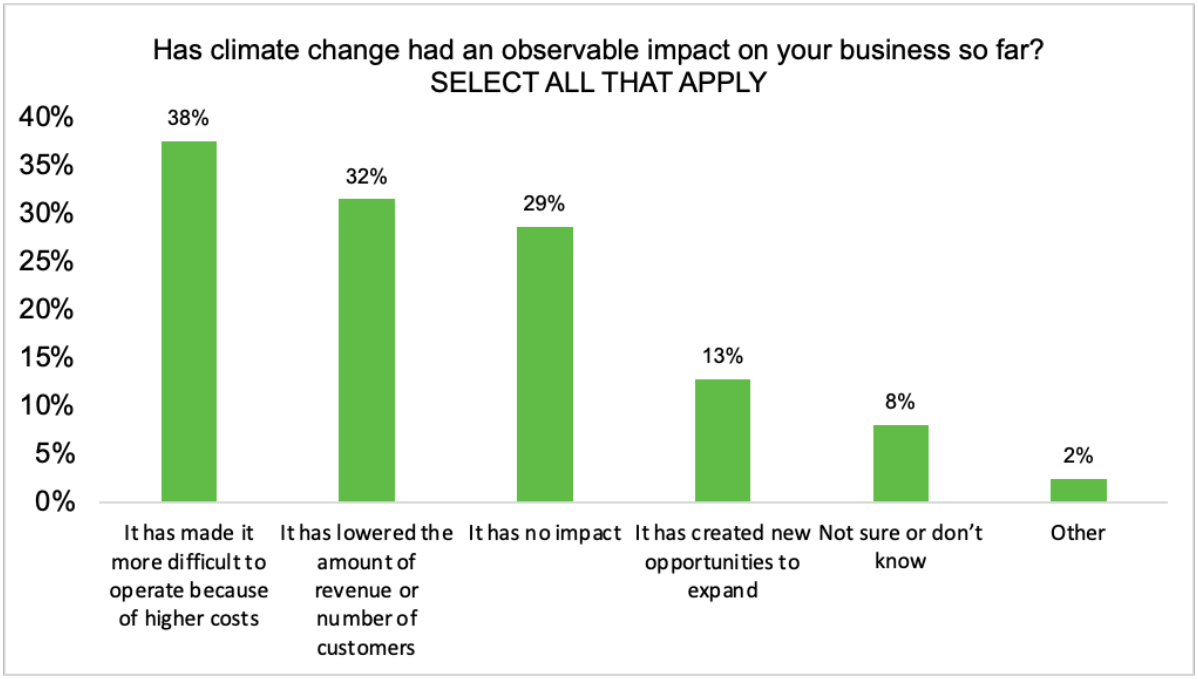

Figure 13. Climate change impact on business

Over half of the respondents (52%) stated that they expect climate change to have an observable impact on themselves and their workers' occupational safety and health. Nearly half of the survey respondents (46%) expect climate change to have a negative impact on their business through decreased revenues, increased cost, or decreased investment. Whereas 17% expect climate change to have no impact on their business' revenues, costs, or investments in the future; and 13% expect climate change to have a positive impact on their business through increased revenues, decreased cost, or increased investment. The remaining 24% are unsure or do not know how climate change will impact their business.

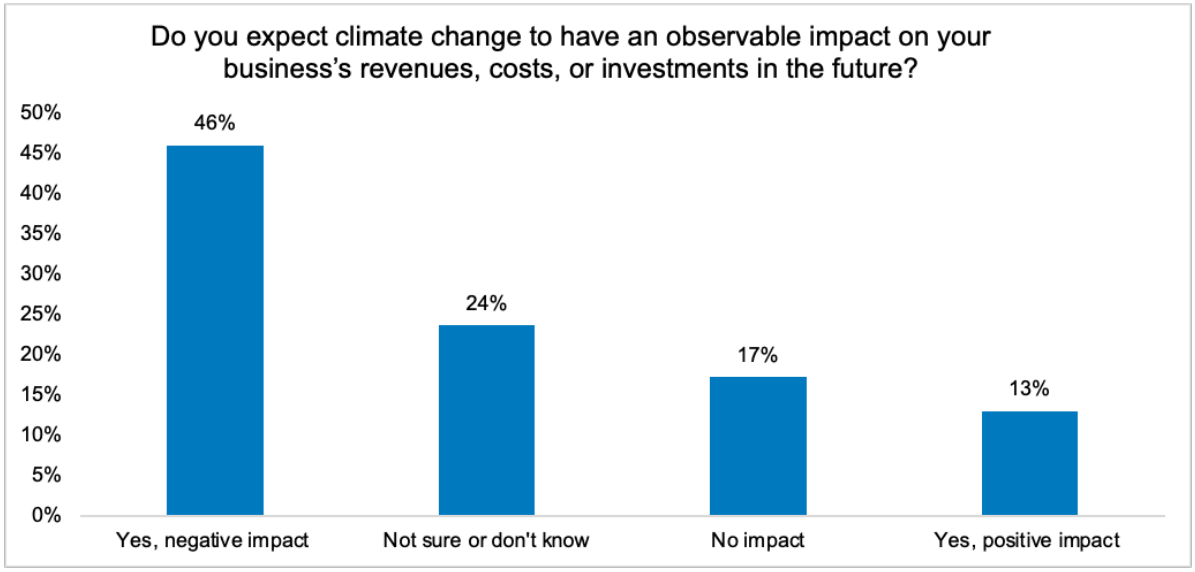

Figure 14. Anticipated climate change impact on business

4. Only a tenth of EOBs businesses in the City of Los Angeles were aware of and understood the consequences of LADWP's transition to 100% renewable energy.

Nearly half of the respondents (47%) that conduct business in the City of Los Angeles were not aware of LADWP's plan to transition to 100% renewable energy, 42% are aware of LADWP's plan to transition but are unaware of the specifics and what that means for their business, and only 11% are aware of the plan to transition and know what that means for their business.

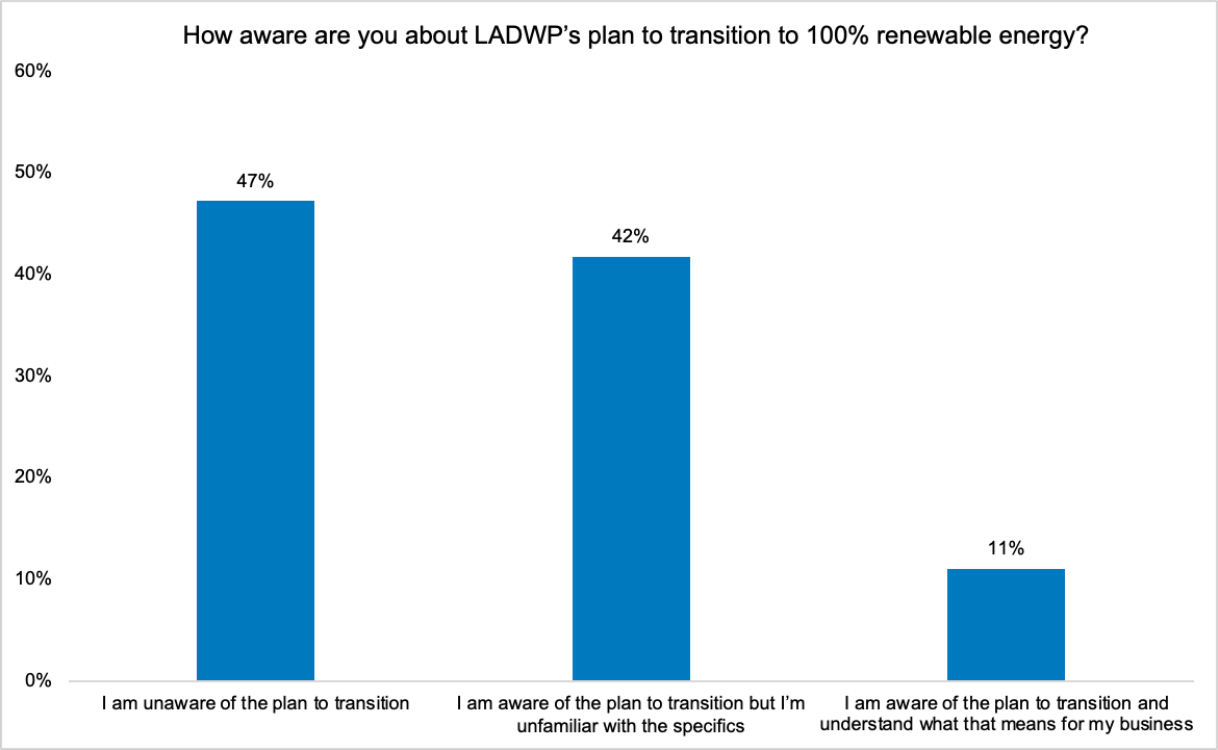

Figure 15: Awareness of LADWP's plan to transition to 100% renewable energy for Los Angeles City businesses.

The majority of respondents (59%) felt that moving towards 100% renewable energy would benefit their business, 27% felt neutral, and only 7% did not feel that moving towards 100% renewable energy would benefit their businesses.

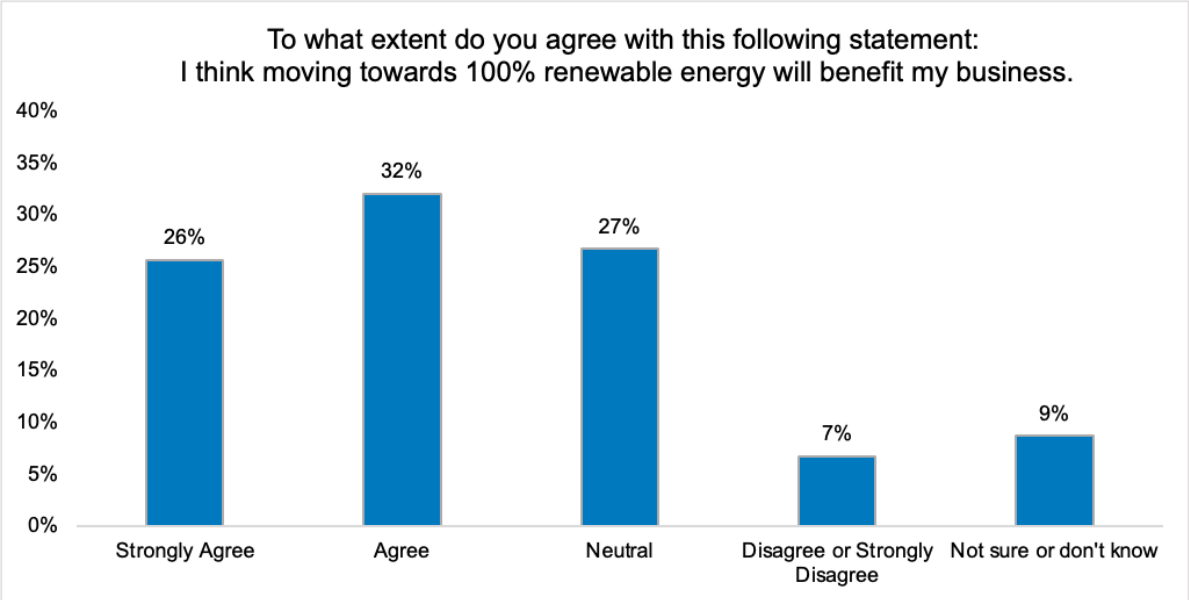

Figure 16. Attitudes towards business benefits from renewable energy transition

5. Less than a quarter of EOBs in the Los Angeles region have a sustainability plan in place.

While 81% of participants indicated that they felt very good, good, or fair in terms of their understanding of the impact of environmental sustainability practices on their business, only 17% have an environmental sustainability plan in place.

Figure 17. Business positionality regarding environmental sustainability plans

Twenty-five percent of businesses stated that they were in the process of developing an environmental sustainability plan, 32% stated that they had not had the opportunity to design an environmental sustainability plan yet, but plan to in the future, and 12% do not anticipate the need for such a plan.

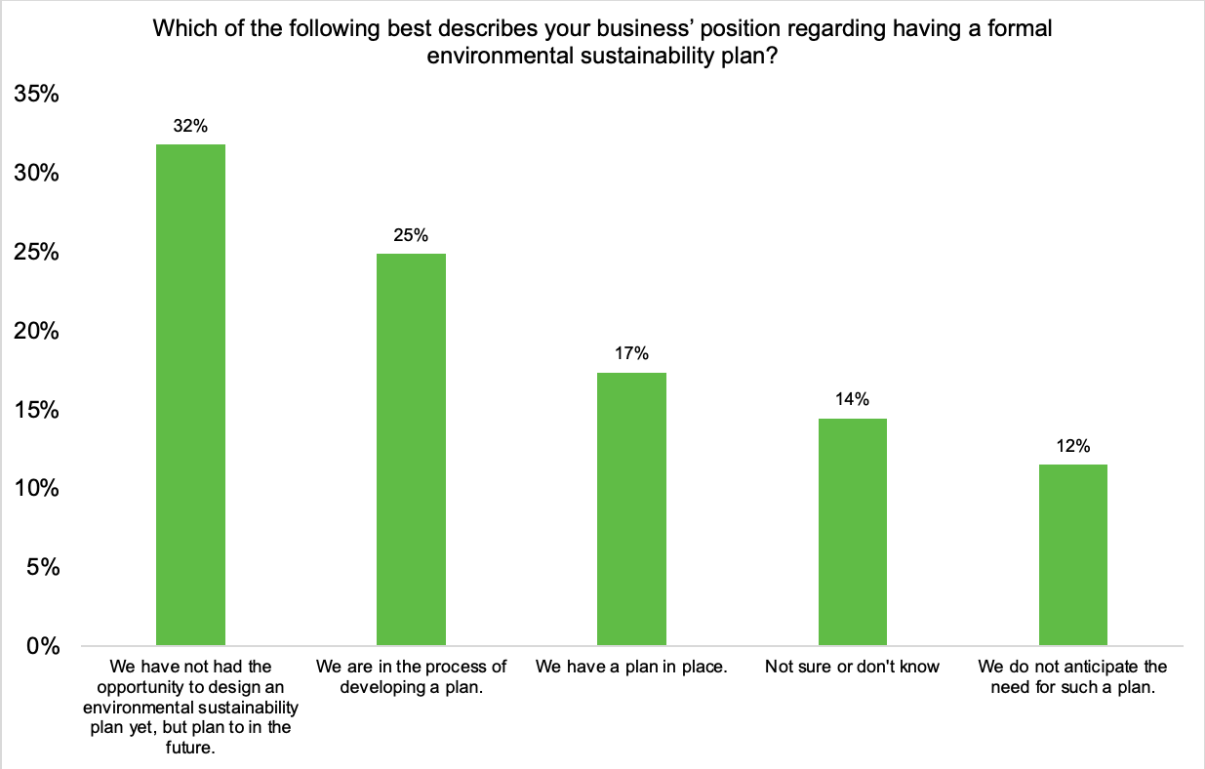

Figure 18. Business position on formal environmental sustainability plan

Because few small EOBs have an environmental sustainability plan in place, LADWP and other city and county organizations have a unique opportunity to provide technical assistance to help prepare small businesses for the transition to 100% renewable energy and mitigate climate change impacts.

6. ***The priority needs for small EOBs to transition to 100% renewable energy are payment programs to fund upgrades to existing equipment, multilingual educational materials to understand how their business can transition, and new energy efficiency equipment.***

We found that the top three needs for survey participants to transition to 100% renewable energy were payment programs to fund upgrades to existing equipment (60%), educational materials to understand how their business can transition (55%), and new energy efficiency equipment (47%).

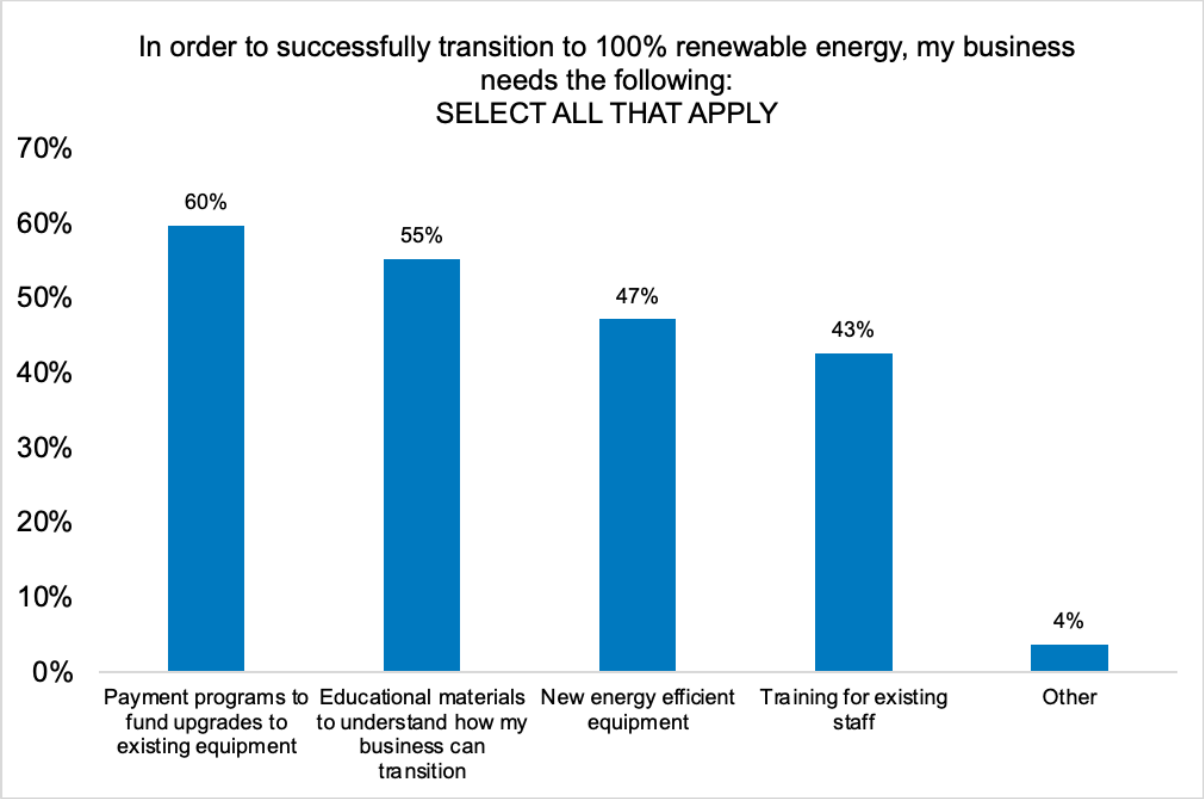

Figure 19. Business needs for a successful transition to 100% renewable energy

Subgroup Variations

Next, we conducted a bivariate analysis between the following firm characteristics: race/ethnicity, industrial cluster, and home-based/storefront businesses and three variables of interest to our community partners and LADWP: energy burden, anticipated climate change impacts, and programmatic needs to transition to 100% renewable energy. We used a chi-square test to determine if inter-group differences are statistically significant.

1. ***African American/Black and home-based businesses face more challenges in paying their utility bills than other racial/ethnic groups and storefront businesses.***

We cross-tabulated and performed chi-square tests for the respondent's energy burden with race/ethnicity, industrial cluster, and business type. Race/ethnicity (p= 0.000) and business type (p=0.002) had a significant relationship with being behind on their utility bill, but industrial clusters did not have a significant relationship (see Figure 20).

Where African American/Black respondents made up 38% of the total survey respondents, they made up over half of the respondents who were behind on their utility

bill for two or more months over the last year. In contrast, Asian respondents made up 19% of the total survey respondents but only 6% of respondents were behind on their utility bill for two or more months. Hispanic/Latino respondents remained proportional making up 22% of the total survey respondents and 27% of respondents behind on their utility bill for two or more months. This indicates that African American/Black businesses may face more challenges in paying their utility bills than the other racial/ethnic groups.

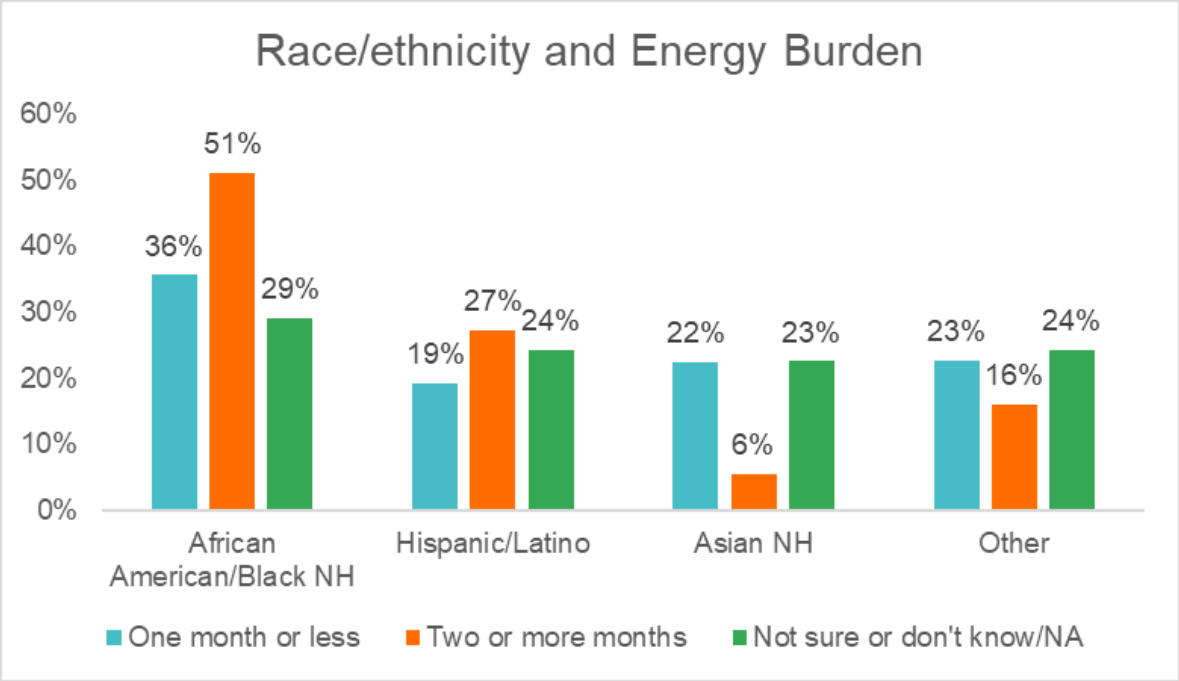

Figure 20. Energy burden based on race/ethnicity.

Business types also had a statistically significant relationship with energy burden. Home-based businesses made up 41% of the total survey respondents but were 54% of respondents behind on their utility bill for two or more months over the last year. Storefront businesses made up 59% of total survey respondents but 45% of respondents who were behind on their utility bill for two or more months. And so, home-based businesses may face more challenges in paying their utility bills than traditional brick-and-mortar establishments.

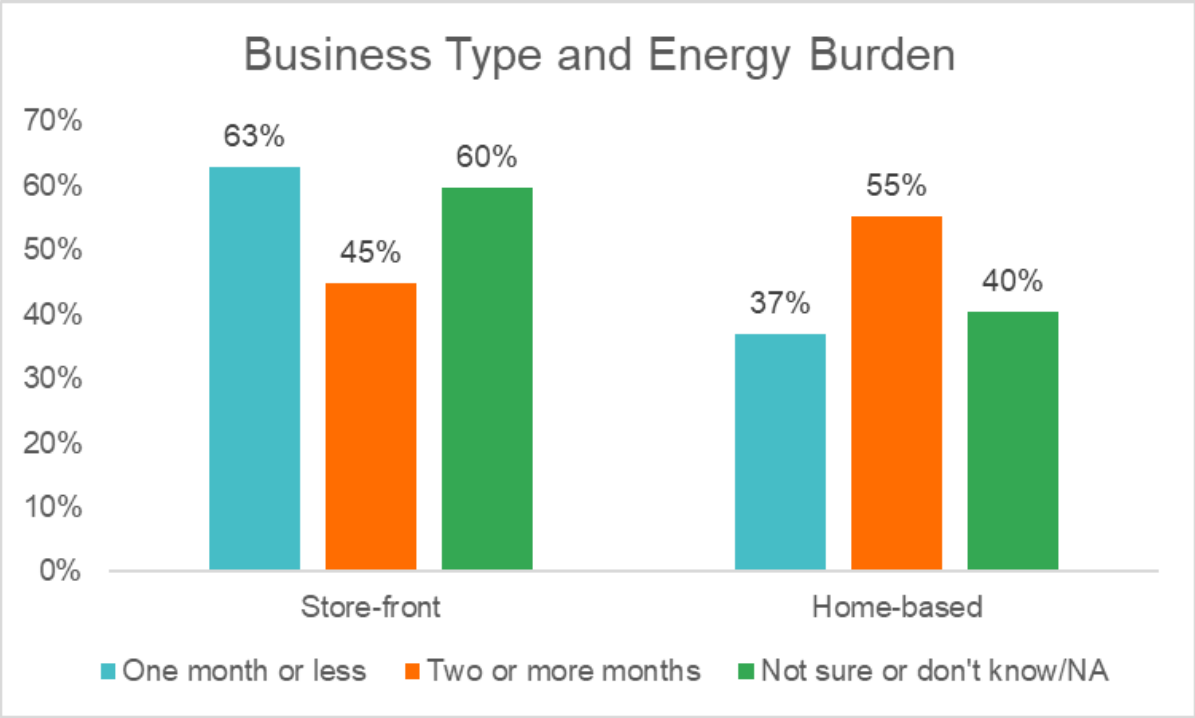

Figure 21. Energy burden based on business type.

2. ***Businesses in low wage industries felt that climate change will have a negative impact on their businesses, and storefront businesses were more likely to anticipate both positive and negative impacts due to climate change.***

We cross-tabulated and performed chi-square tests for the anticipated climate change impacts with race/ethnicity, industrial cluster, and business type (see Figure 21). All three cross tabulations had a significant relationship with anticipated climate change impacts.

Race/ethnicity had an interesting impact regarding whether respondents felt that climate change would have a positive or negative impact on their business. African American/Black respondents felt the most optimistic about climate change's impact. Despite making up 38% of total survey respondents, they made up over half (52%) of respondents who felt that climate change would have a positive impact.

Hispanic/Latino and Asian respondents did not feel as optimistic. Hispanic/Latino respondents made up 22% of total survey respondents, and only 14% of respondents who felt that climate change would have a positive impact. Hispanic/Latino residents remained proportional for the other responses. Asian respondents made up 19% of total

survey respondents, and only 13% of respondents who felt that climate change would have a positive impact. Asian respondents however did not indicate if they felt climate change had a negative impact on their business, rather they disproportionately felt it would have no impact on their business.

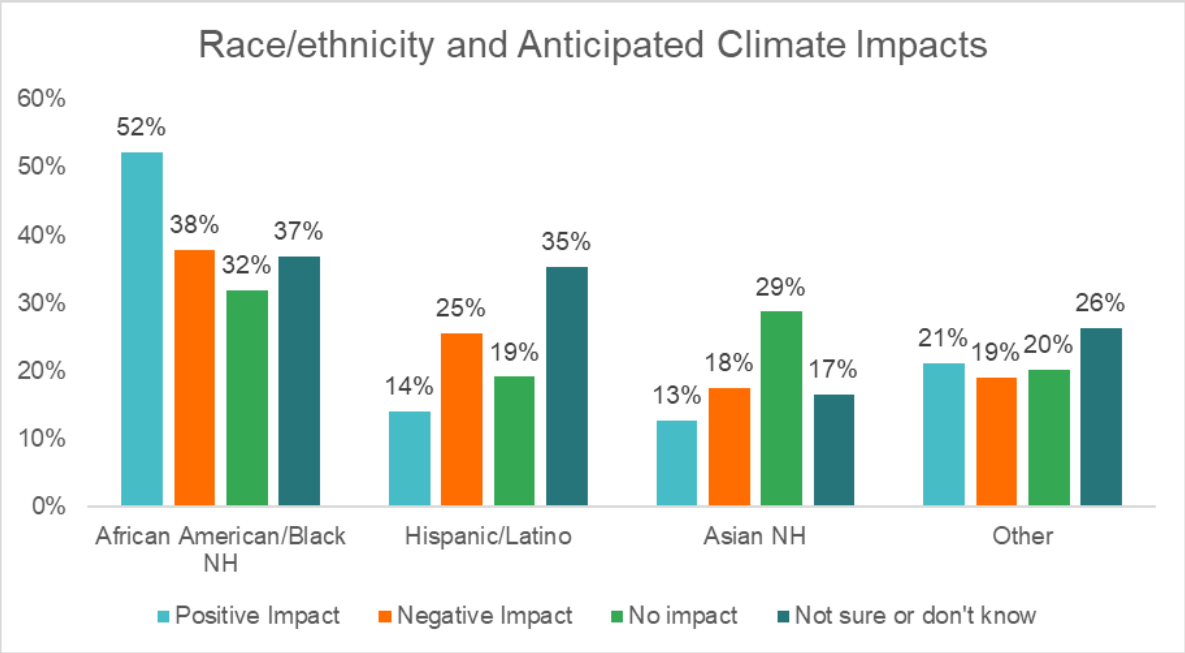

Figure 22. Anticipated climate change impacts based on race/ethnicity.

The industrial cluster's relationship to anticipated climate change impacts followed a pattern, with low wage industries feeling less optimistic about climate change impacts and high wage ones feeling more indifferent. Low wage industries made up 55% of total survey respondents, but 61% of respondents who felt climate change would have a negative impact on their business, and 48% of respondents who felt it would have a positive impact. Medium wage respondents remained proportional in terms of climate change impacts. High wage respondents made up 16% of total survey respondents, but only 10% of respondents who felt it would have a negative impact on their businesses, and 21% of respondents that felt climate change will have no impact on their business.

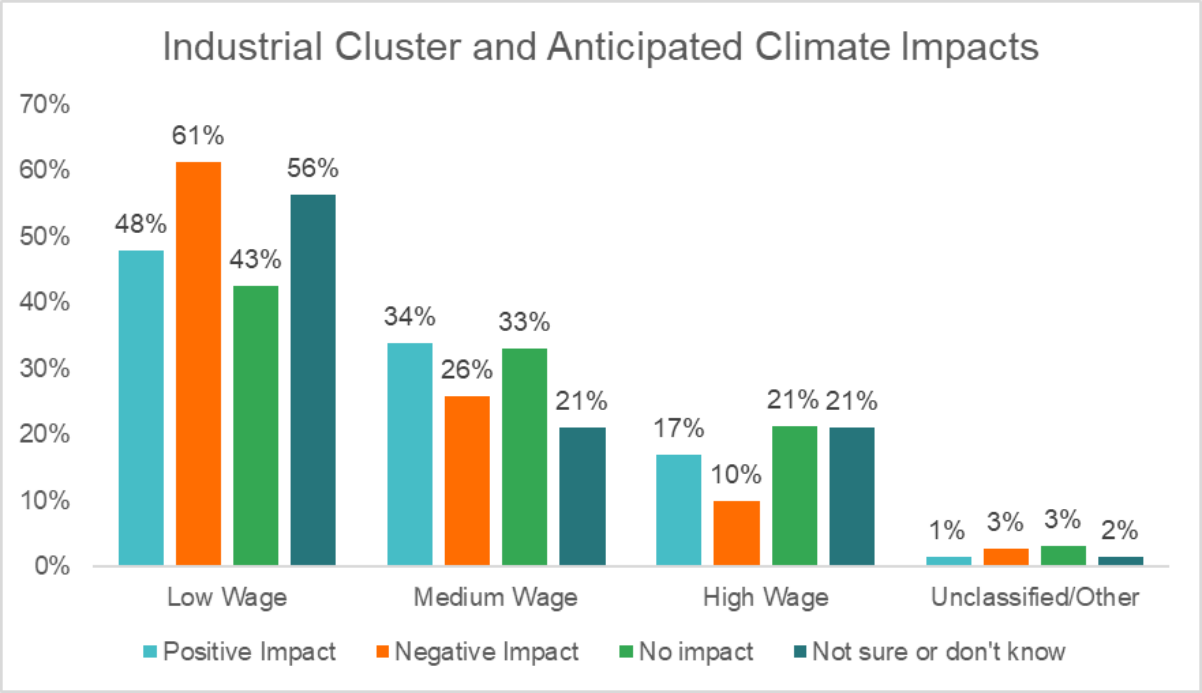

Figure 23. Anticipated climate change impacts based on industry.

Business types also had a significant relationship with anticipated climate change impacts. Home-based businesses felt more strongly that climate change would have no impact on their business. Home-based businesses made up 41% of the respondents, but only 31-32% of respondents who felt climate change would have any impact, positive or negative, on their business, but made up 51% of respondents who felt it would have no impact on their business and 59% of respondents who felt unsure of how it would impact their business. In contrast, businesses with a storefront building made up 59% of respondents and approximately 70% of respondents who felt climate change would have a positive or negative impact on their business. This may indicate home-based businesses have less information on how climate change will impact their business and that they may require more educational materials or technical assistance on the effects of climate change and interventions.

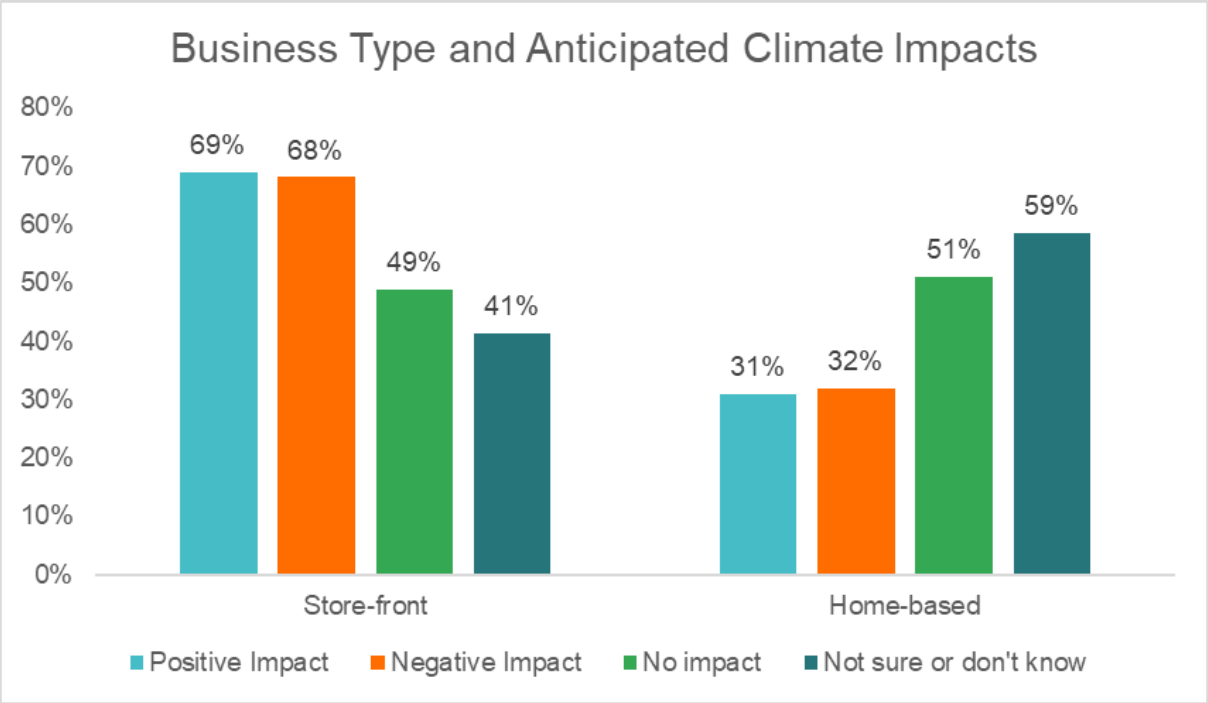

Figure 24. Anticipated climate change impacts based on business type.

3. ***Storefront businesses were more likely to select educational materials to understand how their business can transition, and training for existing staff as their top needs to adapt to 100% renewable energy.***

While race/ethnicity and industrial clusters did not have a significant relationship with the top needs to adapt, business type and selecting “educational materials to understand how my business can transition” ($p = 0.001$) and “training for existing staff” ($p=0.000$) had strong statistical significance.

As the climate change impacts suggest, business type has a strong relationship with business needs to transition to 100% renewable energy. Home-based businesses' top choice for needs to transition was educational materials, while brick-and-mortar businesses' top choice was training for existing staff.

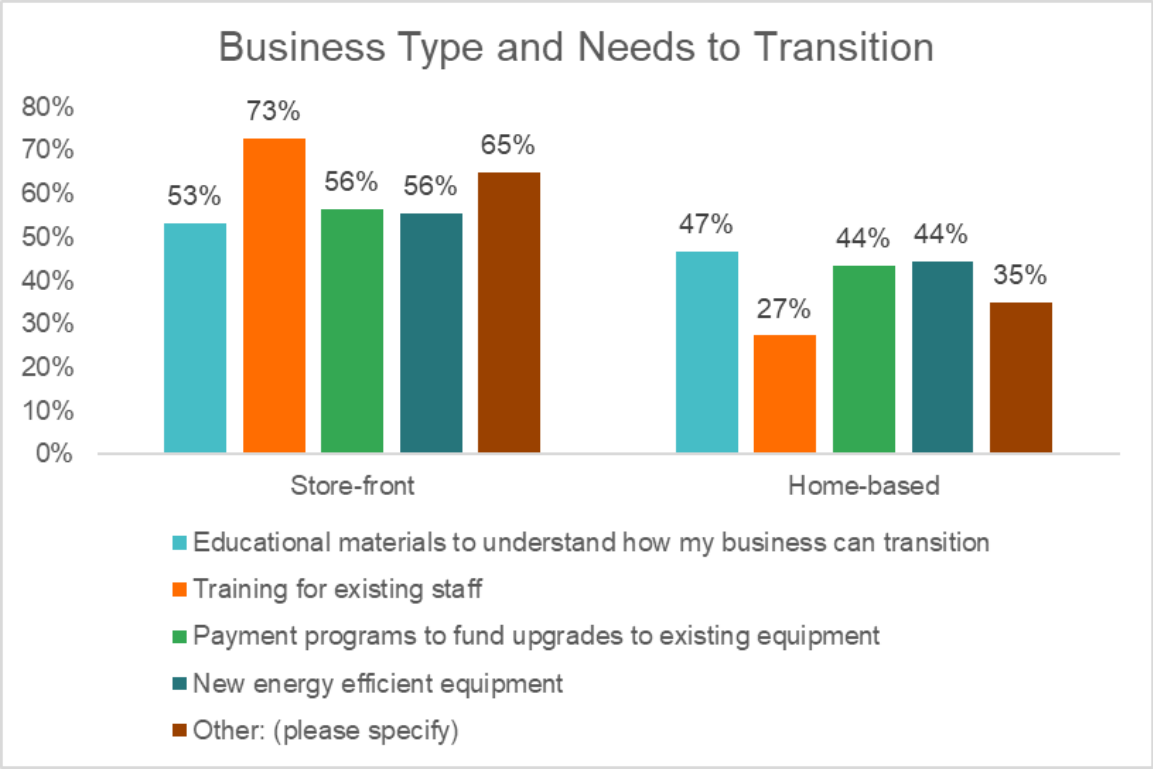

Figure 25. Needs in transition to 100% renewable energy based on business type.

Despite few survey participants being aware of LADWP's plan to transition to 100% renewable energy and what it meant for their business, the majority of respondents felt that the transition would benefit their business. Many businesses felt optimistic about the future and that their businesses can thrive through the transition and afterward, with the proper resources.

Qualitative Insights

Through conversations with LADWP, our advisory committee, and pilot workshop feedback, we heard concerns regarding non-traditional businesses such as home-based ones and street vendors that may not have a commercial utility account. To participate in the majority of LADWP programs targeted at small businesses, they must have a commercial utility account. Small businesses that do not have a commercial account face an additional barrier to participating in energy efficiency programs that many traditional businesses do not face. However, small businesses that do not utilize a commercial account but have a residential utility account can participate in the residential energy efficiency programs that would reduce their energy consumption and energy bill.

A vital topic that arose in the workshops was the role that landlords play when a business owner is working towards transitioning to energy-efficient equipment. Many small business owners and micro-businesses operate out of leased multi-family homes with a landlord. Although LADWP emphasized that cooperation between a landlord and a business owner is necessary to initiate renewable energy plans in a business location, there are many issues that may arise due to this additional barrier presented to EOBs. There are possible language barriers, power imbalances, and additional bureaucratic processes that may very well deter EOBs from taking advantage of renewable energy programs—even if these programs are free. In order to combat this loss of participation, LADWP should tailor the language used when speaking about the collaboration needed between a business owner and a landlord; simply acknowledging the reality of the extra barriers faced by EOBs and voicing their willingness to aid in this collaboration can increase participation and motivation to transition to more energy-efficient equipment.

We identified the following major qualitative findings:

1. ***LADWP does not currently have a unified strategy to analyze business data to better understand their small business customers in terms of energy consumption and program participation.***

LADWP currently differentiates their customers via account type (commercial or residential). LADWP has around 350 premier accounts (larger commercial customers) that they provide more services and outreach to due to their large energy consumption. Because LADWP primarily focuses on their larger premier accounts, they have not created a unified strategy to analyze energy usage amongst their smaller customers. Various LADWP program teams have strategies to analyze energy usage and program participation data for their commercial customers, but no unified strategy exists. Further, because LADWP does not necessarily have unified parameters to define small businesses, it is challenging to disaggregate small business energy usage.

Similarly, LADWP does not have parameters to aggregate the program participation data to understand if they are equitably reaching their small business customers, specifically small EOBs. For some energy efficiency programs, LADWP defines small businesses through energy usage, like the Commercial Direct Install Program, in which businesses whose average monthly electric demand is 250 kilowatts or less qualify for the program. Additional definitions of small business in the context of utilities can be found from a variety of sources like the California Public Utilities Commission (CPUC). CPUC's Small Business Climate Credit is available for "any non-residential customer on a general service or agricultural rate, whose usage doesn't exceed 20 kilowatts in more than three months out of the previous 12-month period." Many utility companies,

including LADWP, do not collect demographic or business characteristics on their commercial accounts.

2. ***Direct outreach to small ethnic-owned businesses, small ethnic business serving organizations, and in-language accessibility is necessary to reach entrepreneurs who are typically excluded from traditional business studies.***

LADWP provides account advisors for their premier accounts, but not for smaller commercial customers. LADWP typically connects with their small business customers via a newsletter. However, this method is typically one-sided, unless small business customers reach out to LADWP, and can exclude small business customers who are not subscribed to their newsletter. LADWP's Small Business Support Group[36] aids their small business customers but the small business customers must proactively reach out to LADWP to receive assistance.

Unfortunately, CNK/LPPI and LADWP did not have funding for translation services for our workshops, hindering our ability to equitably reach a diverse audience of small business owners. However, for one workshop, our community partner hired Spanish translation services as many of their small business clients were Spanish speakers. The translators were well utilized, especially for the question-and-answer portion of the workshop. Individuals who do not speak English often face institutional barriers and discrimination; to not perpetuate these inequalities and reach a wider audience, LADWP should provide translation for other languages in addition to English.

3. ***Outreach events should include opportunities for two-way interaction– LADWP providing critical information on small-business programs to EOBs, and EOBs providing recommendations to LADWP on EOB priorities and needs.***

A successful element of the pilot workshops was the ability for small business entrepreneurs to interact with LADWP and voice their concerns. LADWP was able to provide information on a variety of their energy efficiency programs for both commercial and residential customers, and small business entrepreneurs were able to ask questions to better understand the programs and discuss barriers to participation (i.e., landlords, language, etc.). Through this method of conversation, LADWP can directly understand what challenges small businesses face when applying for energy efficiency

[36] Los Angeles Department of Water and Power. Small Business Support. https://www.ladwp.com/ladwp/faces/ladwp/commercial/c-savemoney/c-sm-economicdevelopment Accessed: May 7, 2023

programs and debunk any misconceptions about them. Importantly, small business entrepreneurs can voice their concerns and create a dialogue with their utility company.

Trusted community-based organizations hosted the pilot workshops. LADWP can partner with community-based organizations or small business centers who currently provide small business coaching, technical assistance, etc. to more effectively outreach to small businesses and host successful workshops.

(4) Recommendations

Based on the findings from the survey and pilot workshops, we offer five recommendations for LADWP. These recommendations are based not only on our survey and workshop findings, but also based input from our community partners and advisory committee, relevant LADWP teams (Small Business Support Group, Energy Efficiency Solutions, etc.), and colleagues.

1. ***Evaluate recent and current small-business energy efficiency programs to identify which have been effective in engaging small EOBs to effectively reduce energy consumption and costs.***

To ensure that LADWP's energy efficiency programs are achieving their intended goals of energy savings in terms of energy usage and monetary cost, LADWP should conduct evaluations of their programs that target their small business customers. LADWP should collect data on the number of small businesses that participated (as well as business characteristics and demographic data) and quantify the energy savings in terms of kilowatt-hours and monetary savings.

LADWP can look at what other utilities are doing in terms of program evaluation, like Duke Energy in South Carolina. Duke Energy administers a Small Business Energy Saver (SBES) program which offers a free energy assessment and then recommends energy improvements for lighting, refrigeration, and HVAC.[37] Duke Energy then pays up to 80% of select improvements and offers a payment program for the small business to pay the remainder. Duke Energy evaluates their SBES program in terms of energy efficiency, customer satisfaction, spillover savings, etc., by performing on-site field inspections, interviews with participants and program managers, engineering analysis, and other methods.[38] Because Duke Energy conducts interviews, and collects quantitative data, they receive a more holistic view of attitudes towards energy

[37] See: https://www.duke-energy.com/business/products/small-business-energy-saver
[38] See: https://dms.psc.sc.gov/Attachments/Matter/b642b446-9218-46f4-9ccc-07b192fa8069

equipment upgrades from their customers and Duke Energy staff who implement the program.

2. ***Develop more targeted policies, programs, and practices to assist small businesses and eliminate participation barriers that EOBs face.***

To better understand the needs of their small business customers, LADWP should collect demographic (race/ethnicity, age of business, annual earnings, etc.) and business characteristic data (industry, number of employees, etc.). Small businesses' needs vary depending on many factors which can impact their ability to participate in energy efficiency programs and aid LADWP in their transition to 100% renewable energy.

LADWP can also utilize community advisory groups to bring together members of the small business community to better understand their small business customers and their needs. This enables small business priorities to directly reach LADWP to inform the transition to 100% renewable energy.

In addition to collecting more data related to the demographics and business characteristics of their small business customers, LADWP should create a standard definition of what constitutes a small business customer beyond just account type and energy usage. This definition can be used to determine eligibility for small business rebates and program participation, as well as utility shutoff protections. As the survey showed, most small EOBs were negatively impacted by the pandemic and are likely in need of additional assistance and shutoff protections. By better defining small businesses and collecting data on the ones LADWP serves, LADWP can better provide services and programs which will help the economic resilience of vulnerable communities.

3. ***Partner with business serving community-based organizations or agencies to provide technical assistance and better engage small business customers, particularly EOBs.***

The survey showed that many participants were unaware of or are not sure how LADWP's plan to transition to 100% renewable energy would affect their businesses and that many small businesses did not have an existing sustainability plan in place. LADWP should engage with small businesses through trusted business serving community-based organizations to design, implement, monitor, and evaluate the energy policies and programs which impact their small business customers. Small business customers often are unaware of LADWP's energy efficiency programs or feel a general

distrust of government agencies. Despite this, most survey participants felt that moving towards 100% renewable energy would benefit their business and did not oppose moving towards more sustainable energy sources. By working with trusted community-based organizations, LADWP can reach more businesses.

While payment programs were the most popular need of small businesses to transition, education materials were a close second. LADWP should invest in culturally and linguistically appropriate education materials to connect with hard-to-reach businesses that typically do not participate in energy efficiency programs. This can be done by taking time early in the program evaluation processes to collaborate with relevant parties such as community-based organizations, small businesses, chambers of commerce, business associations, and city/county business serving offices to better understand how LADPW's energy efficiency programs can reach small businesses. LADWP can also continue to build rapport in communities of color— for example, being proactively present at community events in targeted economic enclaves.

4. ***Collect more robust and precise data on small business customers to prioritize outreach to the most disadvantaged businesses and neighborhoods.***

We classified over half of the survey respondents as belonging to low wage industries. These small businesses with thin profit margins may have a harder time transitioning to energy efficiency upgrades due to the high upfront costs of upgrading equipment or purchasing new equipment. These businesses may also be less motivated to transition because their clientele may be more price sensitive and less willing to pay a premium for sustainable products/practices.

Small businesses, especially EOBs, are often understudied or not included in typical business studies. Their unique needs and characteristics are underexplored. We found that many small businesses in the Los Angeles area utilize residential utility accounts for their business needs, operate out of their personal dwelling units, and/or rely on a landlord or building owner to receive their utility bills. LADWP should outreach to these non-traditional businesses that have unique needs from businesses that have their own commercial utility accounts and operate out of a brick-and-mortar establishment.

While only 5% of our survey participants indicated that they were street vendors, this is a demographic of businesses that is understudied but that has a long history in the Los

Angeles region.[39] It is imperative that street vendors and other nontraditional businesses are not left behind as LADWP transitions to 100% renewable energy.

Low wage and non-traditional businesses have more diverse needs than higher wage businesses and businesses in the formal sector. LADWP should conduct more technical assistance to understand what these businesses need to transition to 100% renewable energy.

5. ***Examine the legal mechanisms that would enable them to provide financial assistance to small businesses and EOBs to reduce barriers to access substantive energy efficiency equipment upgrades, which are typically cost-prohibitive.***

We found that the top choice for transitioning to 100% renewable energy was payment programs to fund upgrades to existing equipment. Many small businesses felt that energy efficiency upgrades and transitioning to renewable energy broadly is cost prohibitive and are discouraged from applying to energy efficiency programs and rebates. Additionally, many energy efficiency equipment upgrade programs operate as a reimbursement system. Small businesses are discouraged or unable to pay this upfront cost and are unable to participate. LADWP should examine the legal mechanisms that would enable them to provide monetary assistance to their small business customers, and EOBs in particular, to encourage them to upgrade their equipment or participate in LADWP's energy efficiency programs.

On-bill financing (OBF) and on-bill repayment (OBR) are two mechanisms that LADWP can offer to incentivize small businesses to upgrade their equipment.[40] OBF and OBR allow for utility customers to access energy efficiency upgrades and repay the utility (or third-party in the case of OBR) through a fixed monthly installment on their utility bills. LADWP can also further investigate the feasibility of using on-bill tariffs (OBT) to incentivize energy efficiency upgrades. An OBT would allow for LADWP to make site specific investments and recover payments through tariffs.[41] Ideally, the energy savings from the energy efficiency equipment would reduce the utility bill for the customers despite the additional tariff.

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[39] Cupers, K. (2015). Chapter 7. The Urbanism of Los Angeles Street Vending from Street Vending in the Neoliberal City A Global Perspective on the Practices and Policies of a Marginalized Economy.https://criticalurbanisms.philhist.unibas.ch/publications/the-urbanism-of-los-angeles-street-vending/Cupers_the-Urbanism-of-LA-Street-Vending.pdf

[40] Please see for more information regarding the CPUC's financing options: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M344/K183/344183605.docx

[41] See for more information on OBTs: https://betterbuildingssolutioncenter.energy.gov/sites/default/files/IB%20L-I%20EE%20Financing%20through%20On-Bill%20Tariffs_Final_0.pdf

(5) Conclusion

The purpose of this study is to provide insights and information to assist the Los Angeles Department of Water and Power to develop equitable policies, programs and practices for small businesses transitioning to 100% renewable energy. The existing literature indicates that small ethnic-owned businesses are relatively disadvantaged because of structural disparities in access to capital, resources, and government programs. Some have argued that these challenges would also hinder EOBs in adapting to climate change, which is a reasonable hypothesis. Clearly, climate change related negative impacts (i.e., increased energy rates, flooding events, extreme heat events, etc.) will be felt by EOBs through lower performance and higher failure rates. These potential adverse outcomes would have a ripple effect because EOBs are a vital part of many disadvantaged communities, providing much needed jobs and services. To avoid exacerbating existing socioeconomic inequalities, the government and utilities must be proactive, taking actions that promote fairness. Effective action should be guided by knowledge. Unfortunately, there does not appear to be any existing study that tests this assertion, nor any study that documents the pattern, magnitude, and consequences of systemic inequity.

This study, conducted by the UCLA Center for Neighborhood Knowledge and Latino Policy and Politics Institute, starts to fill that knowledge gap. As far as we know, this is the first of this type of applied research effort in the nation. The study was a collaborative effort that included community-based organizations, chambers of commerce, and business associations which serve EOBs in the Los Angeles region. These partners and LADWP provided critical input in designing the study, reviewing the findings, and disseminating the results. The study used both quantitative and qualitative methods—a survey of over 500 EOBs in the LA region, and extensive grounded comments and insights. Overall, the study confirms the key hypothesis that EOBs face many challenges in adapting to climate change. The data and information produced the following main findings:

1. Nearly three-fourths of small ethnic-owned businesses (EOBS) experienced negative COVID-19 impacts and faced numerous barriers to accessing government programs and assistance.
2. Almost a third of small EOBs are energy burdened and struggle to pay their utility bills.
3. Over half of EOBs reported having already been hurt by climate change, and nearly half expect negative impacts in their future.
4. Only a tenth of EOBs in Los Angeles were aware of and understood the consequences of LADWP's transition to 100% renewable energy.
5. Less than a quarter of EOBs in the Los Angeles region have a sustainability plan in place.

6. The priority needs for small EOBs to transition to 100% renewable energy are payment programs to fund upgrades to existing equipment, multilingual educational materials to understand how their business can transition, and new energy efficiency equipment.
7. African American/Black and home-based businesses face more challenges in paying their utility bills than other racial/ethnic groups and storefront businesses.
8. Businesses in low wage industries felt that climate change will have a negative impact on their businesses, and storefront businesses were more likely to anticipate both positive and negative impacts due to climate change.
9. Storefront businesses were more likely to select educational materials to understand how their business can transition, and training for existing staff as their top needs to adapt to 100% renewable energy.
10. LADWP does not currently have a unified strategy to analyze business data to better understand their small business customers in terms of energy consumption and program participation.
11. Direct outreach to small ethnic-owned businesses, small ethnic business serving organizations, and in-language accessibility is necessary to reach entrepreneurs who are typically excluded from traditional business studies.
12. Outreach events should include opportunities for two-way interaction—LADWP providing critical information on small-business programs to EOBs, and EOBs providing recommendations to LADWP on EOB priorities and needs.

Based on these findings, we formulated five main recommendations for LADWP:

1. Develop more targeted policies, programs, and practices to assist small businesses and eliminate participation barriers that EOBs face.
2. Evaluate recent and current small business energy efficiency programs to identify effective engagement practices with small EOBs.
3. Partner with businesses and organizations to provide technical assistance and improve outreach to small business customers, particularly EOBs.
4. Collect robust and precise data on small business customers to prioritize outreach to the most disadvantaged businesses and neighborhoods.
5. Examine the legal ability to provide monetary assistance to small businesses and EOBs to reduce participation barriers.

LADWP has taken some important first steps to achieve equity for small businesses and EOBs, but much more is required. Implementation of new equity policies, programs and practices will not be easy, and will require joint efforts with governmental energy agencies and utilities. As daunting as this may sound, these entities share a common goal of a just transition to 100% renewable energy. While the study focuses on LADWP,

many of the findings and recommendations are applicable to the other entities. Many of the potential solutions are also relevant beyond LADWP.

Appendices

Appendix A - Utility Definitions of Small Business

LADWP currently differentiates their customers via account type (commercial or residential). For some energy efficiency programs, LADWP further defines small businesses through energy usage, like for the Commercial Direct Install Program, where businesses whose average monthly electric demand is 250 kilowatts or less qualify for the program.[42] Additional definitions of small business in the context of utilities can be found from a variety of sources[43] like the California Public Utilities Commission (CPUC). Many small businesses operate out of their homes or do not have a traditional storefront and therefore utilize a residential utility account for business purposes. Many utility companies, including LADWP, do not collect information on home-based businesses.

Utility	Definition
California Public Utilities Commission (California)	An eligible small business is defined by the California Public Utilities Commission (CPUC) as any non-residential customer on a general service or agricultural rate, whose usage does not exceed 20 kilowatts in more than three months out of the previous 12-month period.
Southern California Edison (California)	An eligible small business is defined by the California Public Utilities Commission (CPUC) as any non-residential customer on a general service or agricultural rate, whose usage does not exceed 20 kilowatts in more than three months out of the previous 12-month period.
Pacific Gas and Electric (California)	An eligible small business is defined by the California Public Utilities Commission (CPUC) as any non-residential customer on a general service or agricultural rate, whose usage does not exceed 20 kilowatts in more than three months out of the previous 12-month period.

[42] Los Angeles Department of Water and Power. Commercial Direct Install. https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=OPLADWP059443&RevisionSelectionMethod=LatestReleased Accessed: March 3, 2023.
[43] Please see Appendix A. for more definitions

Entergy (Arkansas)	An eligible small business is defined by Entergy as any current Entergy Arkansas small business customer with a peak demand of less than 100 kW.
SRP (Arizona)	An eligible small business is defined by SRP as being on a E-32, E-34, E-36, E-47, or E-48 price plan and use less than 300,000 kilowatt-hours a year across all accounts.
Centerpoint Energy (Indiana)	An eligible small business is defined by Centerpoint Energy as having a monthly electric demand of four hundred kilowatts (kW) or less.
National Grid (Massachusetts)	An eligible small business is defined by National Grid as having an average annual usage of 1.5M kWh or less, or 40k therms or less.
Central Maine Power and Versant (Maine)	An eligible small business is defined by Central Maine Power and Versant as using approximately 50,000 kilowatt-hours or less.
Liberty Energy (New Hampshire)	An eligible small business is defined by Liberty Energy as a business customer with an average monthly demand of less than 200 kW.
NV Energy (Nevada)	An eligible small business is defined by NV Energy as a non-residential NV Energy customer with annual electricity use below 400,000 kWh.
National Grid (New York)	An eligible small business is defined by National Grid as having an average annual peak demand under 250 kW and an electric rate code of SC1, SC2 or SC2D.
Rhode Island Energy (Rhode Island)	An eligible small business is defined by Rhode Island Energy as having an average annual usage of 1M kWh or less, or 40k therms or less.
Duke Energy (South Carolina)	An eligible small business is defined by Duke Energy as a commercial customer with less than 180 kilowatts (kW) demand service.

Appendix B - Community/Business Advisory Committee

Partners	Description
Asian Business Association - Los Angeles	The Asian Business Association is a premier non-profit organization that has been proactively assisting Asian American small businesses gain access to economic opportunities and advancement since 1976. With over 1200 members, we represent the views of Asian American business owners to local, state, and federal government officials in order to promote and improve the business climate.
Asian Pacific Islander - Small Business Program	The mission of the Asian Pacific Islander Small Business Collaborative Women's Business Center (API SBC WBC) is to assist the development of small and micro businesses in Los Angeles with a particular focus on the Chinese, Cambodian, Korean, Japanese, Thai, and Filipino business communities, especially those of low-income immigrants.
Black Restaurant Coalition of Los Angeles	The Los Angeles Black Restaurant Coalition supports and promotes restaurateurs, small businesses, and the entire Black restaurant community to ensure the equitable economic growth of the sector.
Greater Los Angeles African American Chamber of Commerce	The Greater Los Angeles African American Chamber of Commerce (GLAAACC) advocates and promotes the economic growth and development of African American business by focusing on the development of business opportunities, business alliances, and legislative advocacy. In keeping with our mission, GLAAACC provides a variety of programs and services to assist in our members' growth and development. GLAAACC is committed to rebuilding and transforming African American entrepreneurs for a more equitable future.
Inclusive Action for the City	Inclusive Action's mission is to serve underinvested communities and build thriving local economies by improving access to transformative capital and advancing policy through collaborative research and community-driven advocacy.
LA Legal Assistant	LA Legal Assistant is dedicated to helping the South LA Community via legal documents, business permits,

	eviction & foreclosure prevention, and food and housing resources.
New Economics for Women	New Economics for Women has been serving the Los Angeles community since 1985. Their mission is to build economic mobility, particularly for Latinas and their families, through wealth creation, housing, education, entrepreneurship, and civic engagement.

Appendix C - Variable Classification and Recoding

Industrial Clusters

We classify the industries using information from the following question:

Survey Question:

1. Thinking of your business, how would you describe the type of business that you are in? SELECT UP TO 2 RESPONSES
    a. Agriculture, Forestry, Fishing and Hunting
    b. Mining, Quarrying, and Oil and Gas Extraction
    c. Utilities
    d. Construction
    e. Manufacturing
    f. Wholesale Trade
    g. Retail Trade
    h. Transportation and Warehousing
    i. Information
    j. Finance and Insurance
    k. Real Estate and Rental and Leasing
    l. Professional, Scientific, and Technical Services
    m. Management of Companies and Enterprises
    n. Administrative and Support and Waste Management and Remediation Services
    o. Educational Services
    p. Health Care and Social Assistance
    q. Arts, Entertainment, and Recreation
    r. Accommodation and Food Services
    s. Other Services (except Public Administration)
    t. Public Administration
    u. Other: (please specify)

We then use the California Public Use Micro Sample from the 2021 American Community Survey to estimate weighted median annual earnings for those who reported paid income for the previous year for the above industries. We divided the industries into three earnings ranges: low, medium, and high. The low category includes earnings of no more than $27,300; the middle category includes earnings from more than $30,000 to no more than $55,000; and the high category includes earnings greater than $62,000. The low earnings cluster includes Accommodation and Food Services, Arts, Entertainment, and Recreation, Other Services (except Public Administration), Agriculture, Forestry, Fishing and Hunting, and Retail Trade. The middle earnings cluster includes Administrative and Support and Waste Management and Remediation

Services, Transportation and Warehousing, Educational Services, Health Care and Social Assistance, Construction, Real Estate and Rental and Leasing, Wholesale Trade, and Manufacturing. The high earnings category includes Public Administration, Mining, Quarrying, and Oil and Gas Extraction, Finance and Insurance, Information, Professional, Scientific, and Technical Services, Management of Companies and Enterprises, and Utilities.

Industry (NAICS)	**Median Earnings**	**Industrial Cluster**
Accommodation and Food Services	$ 16,900	low
Agriculture, Forestry, Fishing and Hunting	$ 25,000	low
Other Services (except Public Administration)	$ 25,000	low
Arts, Entertainment, and Recreation	$ 25,000	low
Retail Trade	$ 27,300	low
Administrative and Support and Waste Management and Remediation Services	$ 30,000	medium
Transportation and Warehousing	$ 35,000	medium
Construction	$ 44,200	medium
Wholesale Trade	$ 45,000	medium
Health Care and Social Assistance	$ 45,000	medium
Real Estate and Rental and Leasing	$ 45,800	medium
Educational Services	$ 48,000	medium
Manufacturing	$ 55,000	medium
Public Administration	$ 62,000	high
Mining, Quarrying, and Oil and Gas Extraction	$ 69,000	high
Management of Companies and Enterprises	$ 70,000	high

Finance and Insurance	$ 71,000	high
Professional, Scientific, and Technical Services	$ 80,000	high
Information	$ 80,000	high
Utilities	$ 93,000	high

Industry Type	**Average Earnings**
low	$23,840
medium	$43,500
high	$75,000

The results of applying the earnings categories reported below.

Industry Type	**Frequency**	**Percent**
low	303	55%
medium	148	27%
high	85	15%
Unclassified	13	2%

Race/Ethnicity

We created mutually exclusive race/ethnic categories using responses from the from the following question:

Survey Question:

1. What is the racial or ethnic background of the owner or owners of the business? SELECT ALL THAT APPLY
    A. Non-Latino White
    B. Latino
    C. Black or African American
    D. Asian
    E. Native Hawaiian or Other Pacific Islander
    F. American Indian or Alaskan Native Indigenous Community
    G. Other: (please specify)
    H. Not sure or don't know.

Hispanic/Latino includes survey participants who selected option B (Latino) alone or in combination with any other option. Non-Hispanic (NH) African American/Black includes survey participants who only selected option C (Black or African American). The following rules were used to create the mutually exclusive categories. Non-Hispanic Asian includes survey participants who only selected option D (Asian).Non-Hispanic White/Other/Two or More include survey respondents who selected option A (White), option E (Native Hawaiian or Other Pacific Islander), option F (American Indian or Alaskan Native Indigenous Community), option G (Other: (please specify)), option H (Not sure or don't know) or if the survey participant selected two or more options which do not include option B (Latino). The results are reported below.

Race/Ethnicity	Frequency	Percent
Black NH	211	38%
Asian NH	102	19%
Hispanic/Latino	119	22%
White/Other/Two or More NH	117	21%

Home-based/Storefront

To simplify the information on the location and type of businesses, we start with responses to the following question:

Survey Questions:

1. Thinking about the primary location of your business, is this business location leased/rented, or owned?
    a. Owned commercial space
    b. Leased/Rented commercial space
    c. Home-based operation in owned housing

   d. Home-based operation in leased/rented housing
   e. Other: _____
2. Which of the following categories best describes the building where the primary location of the business is located?
   a. Large shopping center (E.g., an enclosed mall)
   b. Low rise linear units (E.g., a strip mall or industrial park)
   c. Commercial or office tower (e.g., over 50% of space is mainly office and administrative space)
   d. Standalone structure (E.g., single storefront on a street)
   e. Sidewalk (E.g., a business which sells something in the street, either from a stall or van/truck, or with their goods laid out on the sidewall)
   f. Home-based operation in a multi-family dwelling unit
   g. Home-based operation in a single-family home
   h. Other: (please specify)
   i. Not sure or don't know.

A business is classified as a Home-based/Other if a respondent answered the following: options C (Home-based operation in owned housing) for question 1, option D (Home-based operation in leased/rented housing) for question 1, or option E (Other:) for question 1 and options E-H (Sidewalk (E.g., a business which sells something in the street, either from a stall or van/truck, or with their goods laid out on the sidewall); Home-based operation in a multi-family dwelling unit; Home-based operation in a single family home; Other: (please specify)) for the second question.

A business is classified as a Storefront if a respondent answered the following: option A (Owned commercial space) for question 1, option B (Leased/Rented commercial) for question 1, or option E (Other:) for question 1 and options A-D (Large shopping center (E.g., an enclosed mall); Low rise linear units (E.g., a strip mall or industrial park); Commercial or office tower (e.g., over 50% of space is mainly office and administrative space); Standalone structure (E.g., single storefront on a street) for the second question.

The result is reported below.

Business Type	**Frequency**	**Percentage**
Storefront	321	58%
Home-based (and Other)	228	42%