



Chapter 2: Procedural Justice

FINAL REPORT: LA100 Equity Strategies

Nicole Rosner, Lis Blanco, Patricia Romero-Lankao, and
Daniel Zimny-Schmitt



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Preface

The Los Angeles 100% Renewable Energy Study, or LA100, revealed that although all communities in Los Angeles will share in the air quality and public health benefits of the clean energy transition, increasing equity in participation and outcomes will require intentionally designed policies and programs. The LA100 Equity Strategies project was specifically designed to help Los Angeles identify pathways to such policies and programs in the form of equity strategies. The project aimed to do this by incorporating research and analysis to chart a course toward specific, community-prioritized, and equitable outcomes from the clean energy transition outlined in the LA100 study.

The Project Partners

The Los Angeles Department of Water and Power (LADWP), the National Renewable Energy Laboratory (NREL), and the University of California Los Angeles (UCLA) partnered on the LA100 Equity Strategies project to develop strategies for engaging communities, funding equitable technology and infrastructure investments, expanding existing programs, and designing new programs and policies to improve equity by incorporating what community members themselves know is needed to achieve a more equitable energy future.

The Project Approach

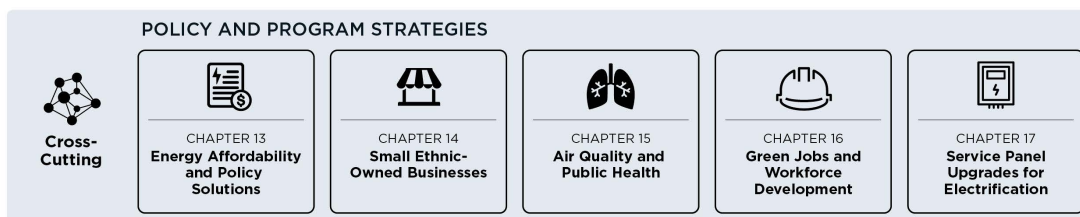
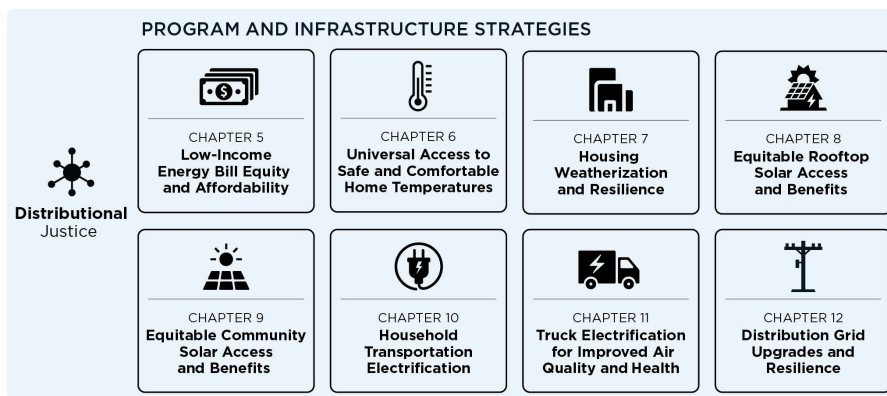
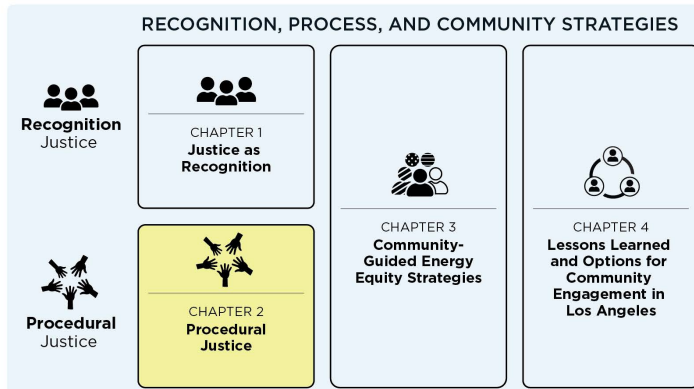
LA100 Equity Strategies employs a unique mixed-methodological approach utilizing three distinct—but connected—research efforts. Through these efforts, NREL and UCLA developed a range of strategy options for increasing equity in LA’s transition to 100% clean energy.

A Project Summary

To get a high-level overview of the project, you can dive into the executive summary, interactive data visualizations, and more on the LA100 Equity Strategies website at maps.nrel.gov/la100/equity-strategies.

The Full Report

NREL’s final full report for the LA100 Equity Strategies project encompasses seventeen chapters. The first twelve chapters, authored by NREL, are organized around the three tenets of justice. Chapters 1–4 address recognition and procedural justice, while Chapters 5–12 address distributional justice. The final five chapters, authored by UCLA, provide crosscutting policy and program strategies. Each chapter provides data, methods, insights, and strategies to help LADWP make data-driven, community-informed decisions for equitable investments and program development.



NREL Chapters

- Chapter 1: [Justice as Recognition](#)
- Chapter 2: [Procedural Justice](#)
- Chapter 3: [Community-Guided Energy Equity Strategies](#)
- Chapter 4: [Lessons Learned and Options for Community Engagement in Los Angeles](#)
- Chapter 5: [Low-Income Energy Bill Equity and Affordability](#)
- Chapter 6: [Universal Access to Safe and Comfortable Home Temperatures](#)
- Chapter 7: [Housing Weatherization and Resilience](#)
- Chapter 8: [Equitable Rooftop Solar Access and Benefits](#)
- Chapter 9: [Equitable Community Solar Access and Benefits](#)
- Chapter 10: [Household Transportation Electrification](#)
- Chapter 11: [Truck Electrification for Improved Air Quality and Health](#)
- Chapter 12: [Distribution Grid Upgrades for Equitable Resilience and Solar, Storage, and Electric Vehicle Access](#)

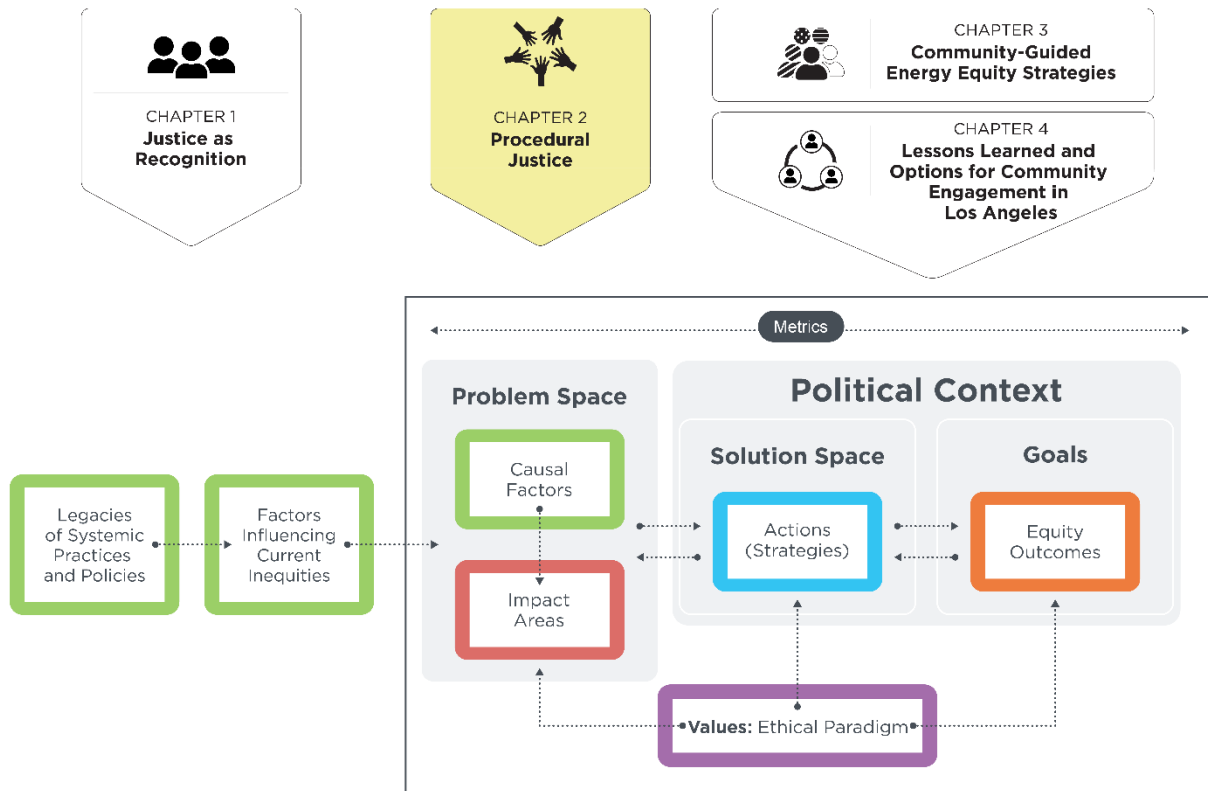
UCLA Chapters

- Chapter 13: [Energy Affordability and Policy Solutions Analysis](#)
- Chapter 14: [Small Ethnic-Owned Businesses Study](#)
- Chapter 15: [Air Quality and Public Health](#)
- Chapter 16: [Green Jobs Workforce Development](#)
- Chapter 17: [Service Panel Upgrade Needs for Future Residential Electrification](#)



About Chapters 1–4

In Chapters 1–4, NREL presents community-grounded research and analysis results on recognition justice and procedural justice, community-guided equity strategies, and future options for community engagement by LADWP. Across these chapters, a mixed-methodological approach is applied, including a systematic literature review, statistical analysis of access to LADWP programs, and qualitative research with communities and community-based organizations to examine understandings of energy transition needs, barriers, and priorities. This work informs modeling and development of equity strategies by analyzing (1) the distribution of benefits of LADWP programs and strategies in the city and (2) historical and current factors contributing to this distribution and other energy inequities in the city.



List of Abbreviations and Acronyms

CBO	community-based organization
EV	electric vehicle
LADWP	Los Angeles Department of Water and Power
NREL	National Renewable Energy Laboratory
UCLA	University of California Los Angeles
ZEV	zero-emission vehicles

Executive Summary

The Challenge

The LA100 Equity Strategies project synthesizes community guidance with robust research, modeling, and analysis to identify strategy options that can increase equitable outcomes in Los Angeles' clean energy transition. Grounded in the analysis of past and ongoing energy inequities and engagement with underserved communities, the project presents community-guided and community-tailored strategies that aim to operationalize recognition and procedural justice. This chapter focuses on procedural justice, examining priorities identified during the community engagement portion of the LA100 Equity Strategies project. This process, and our approach to partnering with community-based organizations (CBOs) and the communities they serve, was developed from the baseline analysis in Chapter 1, which centers on recognition justice, examining past and current inequities in LA. Recognition, procedural, and distributional justice are the three tenets of energy justice around which the LA100 Equity Strategies project is organized (see the Glossary).

Procedural justice prioritizes fair, equitable, and inclusive participation in the decision-making process. This tenet's practical application entails who is invited and able to participate, whose voices are considered as decisions are made, the co-development of procedures to inform this deliberative process, and who has access to formal measures of regulation and accountability (Walker 2009; Carley and Konisky 2020; Upham, Sovacool, and Ghosh 2022). Engaging with Angelenos to examine the causes of inequities and identify impact areas and priorities that center community experiences, values, and goals represents a first step in developing energy equity strategies for the Los Angeles Department of Water and Power (LADWP) to achieve distributional justice—the just and equitable distribution of energy benefits and burdens in LA's energy transition. Equity, as community members insisted, is about making—and following through with—a commitment to prioritize historically underserved and overburdened communities. Community engagement is a principal method for operationalizing this commitment, guiding our analytic approach and potential equity strategies.

Using procedural justice as an analytical tool, this chapter presents the LA100 Equity Strategies approach to community engagement from 2021 to 2023 and the results of this process in relation to community-identified barriers and burdens impacting procedural justice outcomes. We analyze the procedural elements of reaching the equity goals Angelenos set to inform future LADWP decision-making and program development.

Goal and Approach

With a focus on procedural justice, the analysis in this chapter identifies critical procedural barriers to achieving equity in the LA energy transition. We reveal how community-identified values and underlying factors of energy-relevant inequities inform the co-development of equity strategies presented in Chapter 3. Our analytic approach emerged from an iterative process that recognizes the reciprocal relationship between community engagement and equity outcomes analyzed in Chapter 4. We listened to how CBOs and their community members framed energy problems, articulated aspirations for LA’s energy future, and centered our analysis around those priorities.

Community engagement for the LA100 Equity Strategies project included one-on-one meetings with CBOs, neighborhood-specific listening sessions, Advisory Committee meetings, and Steering Committee meetings. While we collected data from various sources, this chapter presents results from the listening sessions as an engagement methodology that examined different forms of community guidance. By sharing preliminary findings from the listening sessions in Steering Committee and Advisory Committee meetings, the listening session results connected community members’ stated aspirations, barriers, and concerns with guidance from Committee members. Steering Committee partners helped interpret and amplify session priorities, and Advisory Committee members provided institutional guidance. We used crosscutting priority areas and the three tenets of energy justice (recognition, procedural, and distributional) to (1) structure the engagement efforts for LA100 Equity Strategies, and (2) connect those priorities and tenets to the analysis of the data gathered during community engagement activities.

Through qualitative coding, we identified categories and concepts in the data and linked passages of CBO one-on-one meeting notes and 15 listening session transcriptions to themes that became labeled with a particular “code” (e.g., barriers to program participation and support). Our key findings emerged as we used the frequency of overlapping codes—two themes that were identified in the same passage—to analyze key relationships between causes (i.e., causal factors) and effects (i.e., impact areas), thus grounding our theoretical understandings of the energy transition in local realities.

Key Findings

A thorough review of the overlapping codes with the highest frequency across community discussions revealed three relevant categories (primary codes) of procedural justice: (1) self-determination, (2) barriers to program participation and support, and (3) energy affordability and burden. High frequency refers to the number of times these three primary codes overlapped with community-identified causal factors and impact areas. While the frequency of overlaps is an indicator of value, our focus here is not on statistical relevance, but rather on the recurrent significance of these categories to impact procedural justice in Los Angeles. We present these categories—their presence or lack thereof—as the primary barriers to procedural justice in the clean energy transition identified by community members during engagement. Below we include three tables with two examples of community-identified overlapping issues per category.

Self-Determination: For community participants, self-determination is the ability and power to make decisions for themselves in relation to the energy system. A key goal of the LA100 Equity Strategies project is developing a lasting methodology that centers community members in the energy decision-making process. Community participants discussed how causal factors (e.g., energy affordability and burden, access to financial capital) limit their energy-related decision-making and their ability to self-determine their own access to the benefits of the clean energy transition (e.g., electric vehicles [EVs]; jobs, training, and entrepreneurship). The power to determine one’s own energy future in Los Angeles is not only about offering lower-income Angelenos subsidized opportunities and benefits. Access to high-road and well-paid jobs, training, and entrepreneurship in their communities also has direct impacts on self-determination. We performed a content analysis of the overlapping issues related to self-determination, which revealed procedural challenges participants experienced or predicted related to accessing clean, efficient, and affordable energy and technologies, as well as the jobs needed to facilitate that access.

Table ES-1. Codes Overlapping with Self-Determination

Primary Code	Overlapping Codes	Key Findings
Self-Determination	Energy Affordability and Burden	Residents referred to the unaffordability of current electricity bills, particularly given other monthly expenses, and noted that they did not have the ability or power to lower these high costs. What they did have the power to change was their own everyday routines in their homes, which did not necessarily impact their electricity bills.
	Electric Vehicles (EVs)	Factors limiting participants’ ability to determine their own EV access include a lack of accessible guidance to make informed decisions, limited financial capital to purchase a used fuel car let alone an EV, and insufficient local EV charging infrastructure in their communities. For low- to moderate-income Angelenos, these factors become limitations on their power to choose an EV as their preferred mode of transportation.

Barriers to Program Participation and Support: This category refers to a series of causal factors limiting communities’ ability to participate in, or become eligible to access and/or use, existing energy-related incentives, subsidies, and other aid programs. These barriers are embedded in eligibility criteria, predatory practices among service and credit providers, lack of accessible information, and renter and homeowner issues. Content analysis of the overlapping issues related to barriers to program participation and support showed a historical lack of procedural justice in LA’s lower- and moderate-income communities, specifically in how government programs and benefits are designed and implemented today. This section of the chapter reveals LA’s historical disinvestment, disenfranchisement, and lack of self-determination in particular neighborhoods. Our analysis reveals that in practice, programs that are designed to redress inequities in these areas can inadvertently reproduce inequities during implementation.

Table ES-2. Codes Overlapping with Barriers to Program Participation and Support

Primary Code	Overlapping Codes	Key Findings
Barriers to Program Participation and Support	Moderate to Low Income	Participants referred to the financial difficulties in accessing clean and efficient energy technologies via existing programs. Low-income participants emphasized barriers to accessing programs due to structural factors such as language limitations, citizenship status, housing tenure, and information gaps. Moderate-income participants emphasized the shortcomings of current eligibility criteria that effectively exclude their participation in existing programs due to an incomplete understanding of their economic status and financial burdens.
	Renter and Homeowner Issues	According to participants, residents who live in non-rent-controlled housing where homeowners implement upgrades—even subsidized LADWP upgrades and benefits—will most likely experience an increase in rent to cover the cost. For those living in rent-controlled housing, homeowners will most likely refrain from investing in upgrades given their inability to utilize rent to cover costs, and therefore place the burden of safety and efficiency upgrades on renters who are ineligible for LADWP benefits. For low-to-moderate-income homeowners, purchasing a home creates new and long-term financial burdens that limit their capacity to invest in subsidized energy efficiency improvements.

Energy Affordability and Burden: Community members’ abilities to pay energy-related costs—from transportation and housing to work, food, and recreation—describes *energy affordability and burden* in the context of their everyday lives. Energy burdens are often understood as “the percent of a household’s income spent on utilities for heating, cooling, and other energy services” (Drehobl and Ayala 2020). However, participants consider energy burden to include the trade-offs households must make to pay their energy bills alongside other monthly financial burdens (e.g., cost of health care, childcare, rent)—which aligns with scholarship that expands the above established understanding of the term. The *energy affordability and burden* code overlapped with many of the previous codes; therefore, we only highlight two overlapping codes—*barriers to program participation and support* and *responsibility, accountability, and transparency*—that illuminate the procedural changes needed to increase Angelenos’ access to affordable energy. Our content analysis of *energy affordability and burden* revealed procedural issues impacting access to specific clean energy technologies and services.

Table ES-3. Codes Overlapping with Energy Affordability and Burden

Primary Code	Overlapping Codes	Key Findings
Energy Affordability and Burden	Barriers to Program Participation and Support	While there are existing LADWP programs designed to increase energy affordability for ratepayers, listening session participants emphasized the barriers to accessing those benefits that maintain ongoing energy burdens. One such barrier is the “missing middle”: a subset of ratepayers who cannot afford the more efficient clean energy technologies and yet are not included in the program design for subsidized benefits given their relatively higher incomes. This lack of access thus increases the energy inequities among ratepayers: as energy technologies become more efficient yet also more expensive, moderate-income Angelenos receive disproportionately fewer of the benefits while becoming more financially burdened.
	Responsibility, Accountability, Transparency	In listening sessions, participants described both the presence and absence of institutional responsibility, accountability, and transparency. Participants explained the direct impacts that their absence has on financial and other burdens produced by the current energy system. Participants understand themselves as part of the energy system as ratepayers, and therefore demand transparency and accountability.

The three categories above—self-determination, barriers to program participation and support, and energy affordability and burden—reveal causal factors that must be redressed to achieve procedural justice. This intersectional relationship shows the importance of developing and maintaining transparency and accountability to ensure an equitable distribution of energy services, resources, and technologies for all Angelenos. Chapters 1–4 of this report center and operationalize recognition and procedural justice to co-identify and analyze energy equity strategies with underserved communities and their organizations, and Chapters 5–12 present a series of strategies to improve distributional justice.

Envisioning Equitable LADWP Programs

This chapter analyzes a crucial component of procedural justice—LADWP’s engagement with historically underserved communities and CBOs—to define where and when to prioritize more equitable goals and strategies in Los Angeles. Employing a mixed-methodological approach, we identify procedural barriers and challenges to ground our understanding of energy-relevant inequities in areas of impact prioritized by Steering Committee members and listening session participants. Our analysis and key findings are critical to ensuring fair, equitable, and inclusive participation in the decision-making process for LA’s energy transition. The findings can serve to guide and inform LADWP in future planning and program development toward a more equitable LA energy transition.

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1 Introduction

Energy, climate, and environmental justice initiatives in the United States are embedded in processes that involve social movements, research, and policy development. These initiatives address the environmental impacts faced by underserved and frontline communities (Walker 2009; Hettinger et al. 2021). One of the first legal actions to include environmental justice principles in federal regulatory practice was President Clinton’s 1994 Executive Order 12898. This order required the U.S. Environmental Protection Agency and other federal agencies to implement environmental justice strategies that address the disproportionate negative effects of federal programs and policies on low-income and communities of color. In September 2019, the State of California further ratified environmental justice principles into law when the California Assembly Bill 1628 called for “the fair treatment and meaningful involvement of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies” (Rivas 2019). The Biden Administration’s commitment to environmental justice opens up new opportunities and programs, such as the Inflation Reduction Act and the Justice40 Initiative, to develop and foster a more equitable energy system. These processes at the federal and state levels guide environmental justice decisions. Procedural justice then focuses on the equitable inclusion of people in the decision-making process, which ultimately defines the local effects of federal and state policies.

The concept of *justice* has interrelated threads that run through the fields of social, energy, climate, and environmental sciences (McCauley and Heffron 2018; Jenkins 2018; Carley and Konisky 2020). As already indicated in Chapter 1, our emphasis in Chapters 1–4 is on energy justice, following the three functions developed by Sovacool and Dworkin (2015): energy justice as a conceptual, analytical, and decision-making tool. We use energy justice as a *conceptual tool*, to analyze the legacy of past and ongoing policies and practices on current energy inequities in Los Angeles (Chapter 1). As an *analytical tool*, it guides analyses of how social norms and ethical paradigms are reproduced through energy systems and of how structural, causal factors impact energy outcomes. As a *decision-making tool*, it supports energy planners, ratepayers, and community-based organizations (CBOs) in developing more informed and grounded energy strategies and actions. In these three functions, energy justice integrates social and engineering science tools and methods through feedback loops with local communities, trusted institutions, and diverse research disciplines. This chapter focuses on energy justice as an *analytical tool* for understanding how social norms, ethical paradigms, and causal factors impact the current energy process in Los Angeles.

LA100 Equity Strategies moves beyond a singular focus on the distributional aspects of benefits, burden, and disadvantage (i.e., distributional justice) to analyze three tenets of energy justice: procedural, recognition, and distributional justice (Chapter 1). The goal of this chapter is to present the results of the social analysis of community engagement data collected from 2021 to 2023 in relation to the causal factors, impact areas, and values affecting procedural justice outcomes. Chapter 3 then operationalizes those community-identified mechanisms related to *procedural justice* and *justice as recognition* to inform a more inclusive and equitable engagement process guiding the energy transition in Los Angeles (Chapter 4).

In the following sections, we define key terms and the analytic approach to the just transition to clean energy in Los Angeles (Section 2 and the Glossary, page 29). We then present the methods used to center procedural justice, including an ongoing community engagement process (Section 2.3) that identifies critical procedural barriers and challenges to achieving more equitable energy outcomes. This analysis creates a lens for understanding energy-relevant inequities crosscutting areas prioritized by Steering Committee members and listening session participants (Section 2.4). The concluding remarks map the analytic trajectory from the problem space (Section 2.5) toward the solution space (Chapter 3 and 4). Chapter 3 and Chapter 4 operationalize the key findings of our recognition and procedural justice analysis related to equity in the energy decision-making process to co-develop strategies with communities that impact their prioritized areas (Chapter 3).

2 Analytic Approach

Any attempt to develop more equitable energy outcomes in Los Angeles must first involve understanding what energy equity means to the people most negatively affected by the current energy system. The Los Angeles Department of Water and Power (LADWP) is committed to that effort, and this chapter presents steps to address this challenge through a procedural justice approach.

Actively engaging underserved communities and CBOs in defining where and when to prioritize more equitable goals and strategies has become a best practice (Romero-Lankao and Nobler 2021). This process of community engagement is critical to procedural justice (Williams, Blair-Loy, and Berdahl 2013; Walker 2009). Procedural justice is concerned with ensuring fair, equitable, and inclusive participation in the decision-making process. This tenet entails who is invited and able to participate, whose voices are considered as decisions are made, the co-development of procedures to inform this deliberative process, and who has access to formal measures of regulation and accountability (Walker 2012; Carley and Konisky 2020; Upham et al. 2021).

Recognizing the reciprocal relationship between community engagement and equity outcomes, our analytic approach to Chapters 1–4 emerged from an iterative process that connected the systems of thought, concepts, and ways of framing problems (Burawoy 1998) shared with us by community members to the three tenets of energy justice: procedural, recognition, and distributional (Chapter 1 and the Glossary). Utilizing an adaptation of grounded theory concepts (Charmaz 2006; Buckley and Waring 2013), we used existing (deductive) crosscutting priorities and justice tenets to (1) structure the engagement efforts for LA100 Equity Strategies (Section 3.3.1) and (2) connect those priorities and tenets (deductive) to the bottom-up (inductive) analysis of the data gathered during community engagement activities (Section 4).

This approach framed our empirical data around a problem space made up of community-identified causal factors and impact areas, a solution space made up of community-identified actions and strategies, and the underlying values that orient community understandings, actions, and future visions. Structured by this framework, our approach enables community member and stakeholder understandings to ground the operationalization of energy justice. Here grounding entails the identification of local strategies to achieve more equitable energy outcomes. These efforts inform the analysis in Chapters 3–12 of actions aimed at addressing recognition and procedural injustices and fostering equity in the distribution of benefits and burdens in the LA energy transition (*distributional justice*).

In this framework, the *causal factors* refer to historical and ongoing structural processes, policies, and practices that have led to current inequities in the energy system. In this chapter, they refer to the root causes of inequitable participation in decision-making. In turn, a lack of decision-making power becomes a causal factor in itself, creating inequities in both decision-making and fair treatment in access to benefits in crosscutting prioritized areas, such as energy access and affordability, jobs, and health (Agyeman et al. 2016; Álvarez and Coolsaet 2020).

These causal factors have direct and indirect effects on the energy system and current transition. We define the areas in which these energy-related effects land as *impact areas*, the areas that must be

addressed to engender more equitable energy outcomes. An impact area could refer to an energy subsector, such as transportation, or a crosscutting prioritized area, such as affordability and access.

An energy transition entails changes in sociotechnical energy systems and systems of policy action (depicted in “Solution Space” in Figure 1). *Actions* involve programs such as regulations, subsidies, and investments and how they are designed, implemented, and evaluated. In turn, these actions can become a means to achieving more equitable energy transition outcomes, or the ultimate changes that a policy or program will yield (Arndt et al. 2017; McCauley and Heffron 2018; Carley and Konisky 2020).

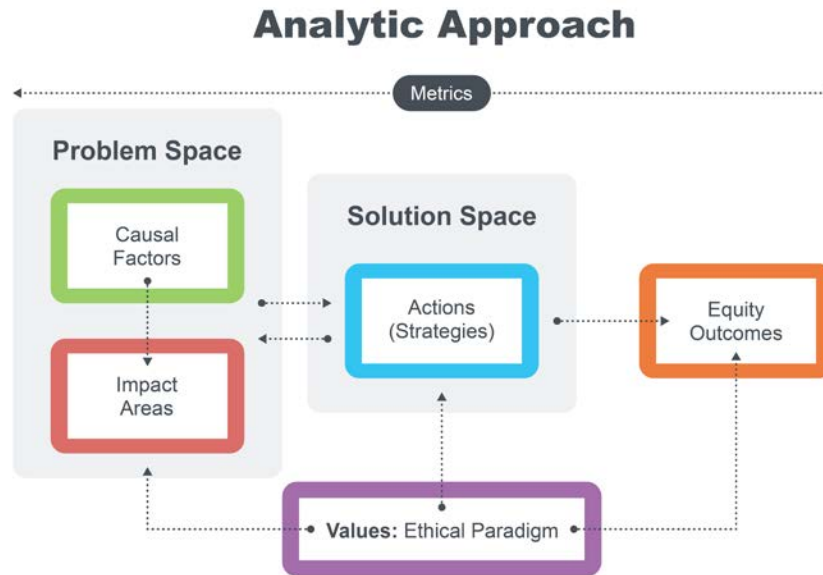


Figure 1. Analytic approach to procedural justice

Underlying this framework is the *ethical paradigm* or *value* system that structures the sociocultural norms, beliefs, and practices guiding how a group of people prioritize and relate to the current energy transition (see the Glossary, page 29). Our framework builds on the assumption that just energy transitions can be more effectively and inclusively achieved by a systematic effort to understand and consider community and stakeholder value systems in the engagement process.

Through engagement with underserved communities and project stakeholders in Los Angeles, this analytic approach can help: (a) determine if strategies are equitable in their design, development, impacts, and outcomes; and (b) establish the process to monitor and revise program design and implementation. This engagement process—substantively integrating historically underserved communities into the decision-making process—is a critical component of procedural justice.

3 Methods and Data

This chapter builds upon the literature review and statistical analysis described in Chapter 1 by using a mixed-methodological approach to identify community barriers, impact areas, and underlying factors affecting equity in the energy system. Chapter 3 uses these findings to produce community-guided equity strategies. Community engagement involved three stages developed through combined engagement with communities and stakeholders, including both the Steering Committee and the Advisory Committee (see Figure 2, page 6). The stages are:

1. Envisioning what a just energy future means for communities and CBOs, identifying and understanding Los Angeles' energy justice problems and analyzing determinants of energy inequities.
2. Informing strategy analysis and development.
3. Sharing analysis, models, and community feedback.

Figure 2 lays out the timeline for each of the primary research and engagement efforts used to develop a community-informed approach to producing implementation-ready strategies for Los Angeles' just energy transition. These efforts include:

- Steering Committee meetings
- Advisory Committee meetings
- Neighborhood-specific community listening sessions.

Ongoing community engagement is critical to all phases of LA100 Equity Strategies. However, it plays a particularly important role in its first phase by setting the stage—recognizing local histories of energy inequities and identifying their ongoing impacts on the present context—and building critical community relationships to co-design just energy strategies for LA's future. In this chapter, we present results from our community engagement, which included one-on-one meetings with CBOs on the Steering Committee, neighborhood-specific listening sessions, Advisory Committee meetings, and Steering Committee meetings (Figure 2). We describe each of these in the next sections.

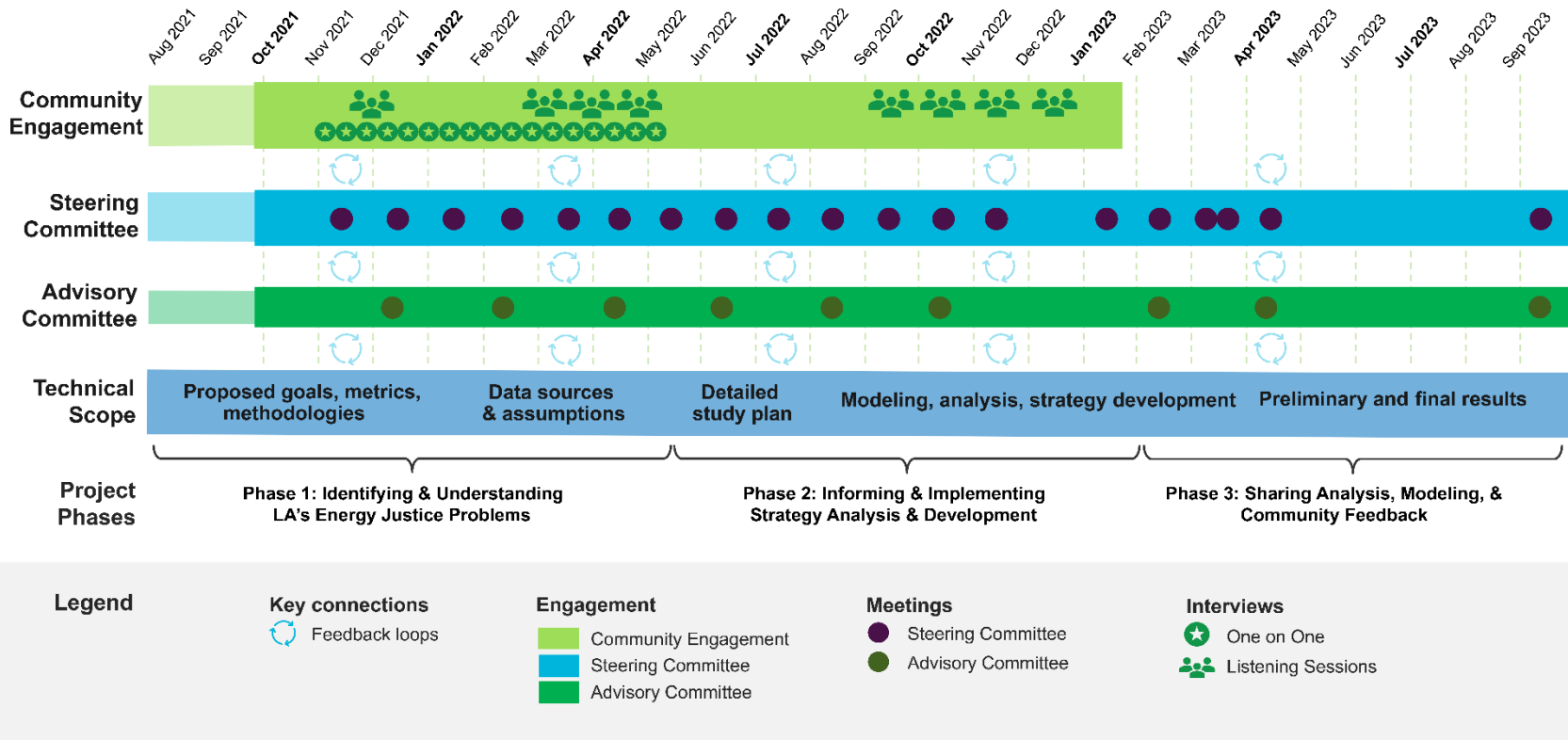


Figure 2. LA100 Equity Strategies timeline and procedural framework

3.1 Steering Committee Meetings

Comprised of LA-based environmental justice organizations representing a range of interests and energy justice communities, the Steering Committee plays a central role in the study by providing strategic and technical direction to LA100 Equity Strategies through the identification of prioritized energy equity outcomes (see Appendix A, *Steering Committee Charge and Protocols*). In the first phase of LA100 Equity Strategies, five monthly Steering Committee meetings were held between November 2021 and March 2022. In the second phase, eight monthly Steering Committee meetings were held between April and November 2022. In the third phase, seven monthly Steering Committee meetings were held between January and May 2023 to present preliminary results.

3.2 Advisory Committee Meetings

Comprised primarily of representatives for the offices of elected officials and key city department partners and stakeholders, the Advisory Committee provides input and feedback on the feasibility of strategies and approaches identified by the Steering Committee (see Appendix A, *Steering Committee Charge and Protocols*). The Advisory Committee identifies LA100 Equity Strategies priorities that intersect with other City of Los Angeles department programs and/or have potential for multi-benefit programs and partnerships with other city departments. In the first phase of LA100 Equity Strategies, two bimonthly Advisory Committee meetings were held in December 2021 and February 2022. In the second phase, four bimonthly Advisory Committee meetings were held in April, June, August, and October 2022 and two meetings were held in February and April 2023.

3.3 Neighborhood-Specific Community Listening Sessions

One-on-one meetings with 10 Steering Committee CBOs in November 2021 helped shape the initial thematic focus and geographic siting of 15 neighborhood-specific community listening sessions held throughout 2022 in five energy justice communities in Los Angeles: two regions of South LA, East LA, San Fernando Valley, and the Harbor Region. Community listening sessions are a form of focus group that centers on community members' lived experiences and energy equity concerns.

Working with CBO partners from the Steering Committee throughout 2022, we adapted the listening sessions to each local context to understand the energy priorities and needs of 8–10 participating community members per session.¹ LADWP compensated all participants for their time and expertise. Listening sessions were co-designed and co-hosted with CBO partners from the Steering Committee, and preliminary results were shared and discussed with both Steering Committee and Advisory Committee members.

While we collected data from various sources identified in Figure 2, this chapter presents results from the listening sessions as a collaborative engagement methodology that linked different forms of community guidance (Sauermaun et al. 2020; Chapter 3). By sharing preliminary findings from the listening sessions in Steering Committee and Advisory Committee meetings, the listening session results connected community members' stated needs, aspirations, and concerns with guidance from

¹ There was a total of 139 participants in all listening sessions, with 36 individuals participating in the first round of virtual sessions and 103 individuals participating in the second round of in-person sessions.

Steering Committee members. Steering Committee partners helped interpret and amplify session priorities, and Advisory Committee members provided institutional guidance.

3.3.1 Methodological Design

Methodologically, the listening sessions were divided into two phases, aligning with the first two “feedback phases” in Figure 2. These two phases consisted of listening sessions conducted in two rounds over the course of 2022. In this first phase, the National Renewable Energy Laboratory (NREL), LADWP, and the Steering Committee partner CBOs co-designed five listening sessions adapted to the five energy justice communities in Los Angeles described above. Working closely with CBOs, the sessions were designed to ground understandings of context-specific (in)equities in crosscutting prioritized areas, such as affordability and burdens; access to City of Los Angeles and LADWP infrastructure, services, and programs; public health, safety, and community resilience; and jobs and workforce development. These crosscutting areas of priority are described in more detail in the following section (Section 3.3.2.1). This first round of five listening sessions was conducted virtually in March and April 2022 and focused on identifying energy justice problems—barriers and needs—in participants’ communities. We used the following topics and questions to facilitate these discussions:

- **Envisioning Just Energy Futures:** What are your community’s or organization’s energy justice goals in Los Angeles? What do just energy transitions and outcomes look like in sectors such as housing, transportation, solar and storage, and workforce development?
- **Identifying Factors and Barriers:** What barriers to achieving these goals have you already identified?
- **Identifying Just Energy Strategies:** What strategies exist to address these barriers? How do you think these strategies could be improved?

Content analysis of the first round of listening sessions revealed a set of causal factors, energy-related impact areas, and underlying values that helped focus and refine questions for the second round of listening sessions, which was aimed at identifying actions and strategies to redress stated problems. In the second phase, NREL shared Round 1 preliminary findings on community-identified energy justice problems with CBOs and listening session participants to assess and ground these understandings. This feedback loop served as part of the process toward identifying community-guided solutions. The second round consisted of 10 listening sessions conducted from September to December 2022. These sessions were held in person, co-hosted with CBO partners located in the five prioritized energy justice communities, and focused on community-identified solutions described in Chapter 3 to inform the design and development of LA100 Equity Strategies.

Each of these community engagement activities was transcribed, translated when needed,² anonymized to protect participants’ personal information, coded to identify key themes and concerns, and utilized to inform NREL technical models for future energy justice strategies. Section 2.4 analyzes this initial community feedback to identify and map key causal factors and impact areas for use in designing just transition strategies.

² Many of the quotes utilized in this chapter were originally in Spanish and translated into English by the authors.

3.3.2 Crosscutting Priority Areas: Informing Listening Session Design

Operationalizing energy justice in the transition to clean energy is a complex challenge, which necessitates grounding intersectional theoretical concepts in lived local realities. In general, energy justice entails providing universal access to energy that is affordable, available, safe, resilient, and able to provide opportunities for workforce development. Everybody should have access to quality information about issues such as energy equity, financing, and the environment, as well as fair, transparent, and accountable forms of energy decision-making (Sovacool et al. 2017). However, if equity is not prioritized, some aspects of the energy transition can exacerbate, rather than redress, energy injustices (Carley and Konisky 2020; Romero-Lankao, Wilson, and Zimny-Schmitt 2022; Sovacool et al. 2022). Therefore, LA100 Equity Strategies began by organizing community engagement activities around four *crosscutting areas prioritized* by Steering Committee members in one-on-one meetings and supported by an energy justice literature review presented at the National Academies (Romero-Lankao 2022). These crosscutting priority areas also emerge as critical areas in academic literature on energy justice and in U.S. policymaking (e.g., Justice40):

- **Affordability and Burdens:** The costs of an energy transition are not equally felt. Energy burdens often impact low-income and communities of color more than others, at least in the short term, as consumers pay the costs for smart meters, power lines, battery storage technologies, and carbon-free grids (Carley and Konisky 2020; Drehobl and Ayala 2020; Romero-Lankao, Wilson, and Zimny-Schmitt 2022). We go beyond the conventional approach to measuring energy burdens as “the percent of a household’s income spent on utilities for heating, cooling, and other energy services” (Drehobl and Ayala 2020) and use an approach to energy burdens that includes energy inequities embedded in transportation, housing, and community infrastructural investments (Hernández and Bird 2010).
- **Access or Actual Use:** Underserved communities are often economically excluded from or limited in their opportunities to transition to clean energy technologies. Electrification to meet LA’s clean energy goals will entail converting from fossil fuel-based to electrical energy-powered technologies (e.g., heat pumps). Because of factors such as lack of familiarity, mistrust, risk aversion, trade-offs, and cost, these technologies may prove inaccessible for lower-income Angelenos. Therefore, transitioning to these cleaner technologies will either be unattainable without support or continue as a low priority given ongoing structural constraints and concerns. We examine how different communities navigate these constraints and articulate strategies to access the technologies that meet their everyday needs.
- **Public Health, Safety, and Community Resilience:** If not properly planned, transitions to clean energy technologies can exacerbate or create new health and safety inequities. In many underserved communities, there is a history of negative impacts and burdens from existing infrastructural interventions with harmful effects on local health and quality of life (Chapter 1). Therefore, we worked with underserved communities to identify and examine the causal factors affecting (1) their health and quality of life, (2) potential benefits and risks of clean energy innovations, and (3) gentrification, displacement, and other negative impacts on community resilience. By community resilience, we are referring to the resources, safety nets, and options community members can draw on to adapt to stressors and pursue their lives with dignity (Romero-Lankao et al. 2016). Acknowledging and mapping these barriers led to the identification of community-guided strategies.
- **Jobs and Workforce Development:** As the green economy expands, clean(er) energy innovations offer the potential to create more job opportunities than fossil fuel industries (Carley and Konisky 2020; Crowe and Li 2020; Carley, Engle, and Konisky 2021). However, they can also disrupt existing employment for populations and economies currently dependent on coal, fracking, and other fossil fuel industries (Lobao et

al. 2016; Crowe and Li 2020; Carley, Evans, and Konisky 2018). In Chapter 1, we examined a series of factors and actions (such as targeted job training and career development opportunities) that can help to avoid detrimental job impacts and foster workforce development opportunities in green infrastructures and industries.

These crosscutting prioritized areas were then utilized to design the listening sessions. In the first round of listening sessions, questions were designed to elicit community feedback on these four thematic prioritized areas. Early findings from Round 1 corroborated the significance of these thematic areas as priorities in local communities. In the second round of listening sessions, questions were more formally organized around each theme to structure and focus the sessions. Thus, these four crosscutting priority areas were deductively structured into the engagement methodology from 2021 to 2023.

3.3.2.1 Data Analysis

All 15 listening sessions were recorded, transcribed, anonymized, and uploaded into the qualitative data analysis software MAXQDA for coding. Coding is the process by which categories and concepts are identified in the data and passages of the transcription are linked to themes that become labeled with a particular code (Charmaz 2006; Buckley and Waring 2013). Beginning inductively (bottom-up) in the first round of analysis, each listening session was analyzed by assigning open descriptive and thematic codes, related to energy justice in Los Angeles and the city’s transition to clean energy, to segments of the data. After the first five sessions were coded, an analytic coding was applied to organize, refine, and map these inductive categories to the adapted grounded theory concepts developed deductively (top-down), as described above (causal factors, impact areas, actions/strategies, values, and equity outcomes).

The Round 1 coding system was used to analyze the second round of 10 listening sessions, where codes were refined and relations between codes were analyzed (see Appendix C for details). Through this comparative analysis, the relations between key codes began to attain saturation—the point when gathering more data reveals no new insights, issues, or categories related to this research (Glaser, Strauss, and Strutzel 1968). Concurrently, a codebook was developed to define the inductive codes utilizing a grounded theory approach and connect them to energy equity and just energy transition categories, iteratively refining these codes and relations over the course of the analysis process (see Appendix B: Codebook).

An overlapping code occurs when two themes are identified in the same passage. The codes that frequently overlapped in participants’ understandings of energy inequities become key data points for analysis. We analyzed these overlaps because they reveal how participants understand relationships between different themes. The MAXQDA software has tools to identify passages with multiple themes. As the overlapping codes attained saturation over the course of 15 listening sessions, they revealed critical causal factors and actions to address in LADWP’s pursuit of procedural energy justice in Los Angeles. We organized these high-frequency overlapping codes according to the three tenets of justice: procedural, recognition, and distributional. We analyzed the overlapping passages of the 111 codes related to procedural justice.

In this chapter, we present the analysis of a set of overlapping codes in the *problem space*, addressing key relationships between causal factors, impact areas, and values related to *procedural justice* in underserved LA communities. This analysis informs Chapter 3 and 4, where the tenets of *recognition*

and *procedural justice* are operationalized in community-guided strategies and options for community engagement presented as part of the *solution space* for energy justice in these same LA communities. To organize those key strategies, we group the coding results according to the crosscutting priority areas used to design the listening sessions and described above (Section 3.3.2).

In the following section, we present the results of a thorough review of the highest frequency overlapping codes, revealing three codes as the most analytically relevant categories for impacting the problem space of *procedural justice*. Each of these codes overlapped with a series of causal factors, values, and impact areas to reveal community priorities in relation to the existing energy system and engagement process. While we include the frequency of overlaps as an indicator of value, our focus here is not on statistical relevance, but rather on the recurrent significance of these overlapping codes to procedural justice. Thus, while certain intersectional contributions may have been provided only 10 times, those contributions from community members still contain valuable feedback with actionable guidance for developing more equitable procedures in the LA energy transition. Understanding that equity, as one of our participants described, depends on how this process is proceeding, we are highlighting here the procedures and practices that community members identified as problematic and/or in need of closer attention.

4 Results

In this section, we examine procedural justice by (a) analyzing procedural causal factors of inequities in energy affordability, access and actual use, health and safety, and workforce development; and (b) identifying and interpreting the qualitative data from community engagement that will inform the quantitative models technically guiding the energy transition. We focus on the causal factors, needs, and actions that community members identify as impacting everyday decision-making and energy-related procedures in their experience. This lens reveals *how* these community members understand the failures of the past and existing energy systems and begins to chart the co-creation³ of a process that improves equity outcomes as LADWP moves forward. It is the basis for the co-development of a deliberative process to impact Los Angeles' energy transition and ensure accountability in program design, implementation, and evaluation (Chapter 3). This process is central to realizing the promise of more equitable outcomes in Los Angeles' future.

Procedural justice therefore requires reassessing the legislation, policies, programs, and procedures informing the development of pathways toward a more just future. The need for this iterative process with community members is clearly defined in a recurrent guiding value stated in the listening sessions:

The very definition of equity, which we spent a lot of time talking about. And even now those of us who have been disadvantaged are sometimes uncomfortable with. Means it's not about how much. It means that we've all made a commitment that, until we catch up, nobody else gets anything. So more and more of it becomes ours. Because we have been inequitably treated. But what we want to know is, how is it proceeding.

Understanding *how* and *why* most energy transition actions and procedures fail to address inequity is not only necessary but embedded in the core principles of procedural justice. Addressing procedural justice is not only about final outcomes but also about the process necessary to achieve more equitable outcomes. To focus on how "*it is proceeding*" is a way of redressing the factors underlying Los Angeles' structural and current inequities and grounding them in community-based knowledge to co-design future actions and strategies.

Key findings emerged as we used the frequency of overlapping codes to connect those causal factors identified by communities to other causal factors, impact areas, underlying values, and potential actions (see Section 3.3.1). While many of the inductive (bottom-up) coded categories—termed “codes”—come from the project's structure (i.e., electric vehicles, housing, solar energy), analyzing key relationships between causes (i.e., causal factors) and effects (i.e., impact areas) grounds theoretical understandings of the energy transition in local realities. This process and its main findings, as detailed below, enable community understandings to inform the conditions of possibility for more equitable energy outcomes in the LA energy transition. Again, while we collected data from the

³ Here we understand co-creation as “a process through which two or more public and private actors attempt to solve a shared problem, challenge, or task through a constructive exchange of different kinds of knowledge, resources, competences, and ideas that enhance the production of public value in terms of visions, plans, policies, strategies, regulatory frameworks, or services, either through a continuous improvement of outputs or outcomes or through innovative step-changes that transform the understanding of the problem or task at hand and lead to new ways of solving it.” (Torfing et al. 2019, 802)

various sources identified in Figure 2 and Section 3.3.1, this chapter only presents results from the listening sessions.

In a thorough review of the highest frequency overlapping codes, three codes emerged as the most analytically relevant categories for impacting procedural justice. Each of these codes overlapped with a series of causal factors, values, and impact areas to reveal community priorities in relation to the existing energy system and engagement process. Understanding that equity, as one of our participants described, depends on how this process is proceeding, we are highlighting here the procedures and practices that community members identified as problematic and/or in need of closer attention.

The three overlapping codes for impacting procedural justice are defined in Table 1.

Table 1. Definitions of Three Primary Overlapping Codes

Number	Code Name	Code Definition
1	Self-Determination	Passages that relate to community members' abilities, resources, and power to make decisions for themselves in relation to the energy system.
2	Barriers to Program Participation and Support	Passages that relate to obstacles, barriers, and challenges that community members face that limit their ability to participate in, access, and/or utilize existing energy-related incentives, subsidies, and other aid programs. This includes but is not limited to the barriers embedded in eligibility criteria.
3	Energy Affordability and Burden	Passages that relate to people and their communities' ability to pay energy-related costs embedded in their everyday lives—from transportation and housing to work, food, and recreation. Energy burdens are often understood as “the percent of a household’s income spent on utilities for heating, cooling, and other energy services” (Drehobl and Ayala 2020). This code expands that definition to consider the trade-offs people and families must make to pay all their energy bills alongside other monthly financial burdens (e.g., cost of health care, childcare, rent).

Each of these three codes overlaps 10 or more times with a series of other causal factors, impact areas, and values. Those intersections take the form of quotes from listening session participants. In this section, we trace the principle *overlapping codes* that elucidate how energy inequities manifest in the practices and procedures shaping these community members' everyday lives. By tracing these intersectional relationships and analyzing specific quotes as representative content, these results aim to expose key causal factors and point to the procedures that could lead to more equitable outcomes. The following subsections analyze specific quotes that represent a recurrent challenge to achieving energy justice present in the highlighted overlapping codes.

4.1 Code 1: Self-Determination

Defining “Self-Determination” as a conceptual “value” of energy justice, it refers to community members’ ability and power to make decisions for themselves within the current energy transition (Table 2). Self-determination overlapped with three causal factor codes and two impact area codes, revealing root causes of inequity underlying the procedures that affect energy outcomes (Table 3).

Table 2. Frequency of Overlapping Codes with Self-Determination

Primary Code	Overlapping Codes	Frequency of Overlaps
Self-Determination	<i>Causal Factors</i>	
	Energy Affordability and Burden	25
	Access to Financial Capital	11
	Barriers to Program Support	23
	<i>Impact Areas</i>	
	Electric Vehicles (EVs)	10
	Jobs, Training, and Entrepreneurship	10

4.1.1 Self-Determination and Energy Affordability and Burden

“Self-Determination” and “Energy Affordability and Burden” overlapped 25 times across all listening sessions. “Energy Affordability and Burden” was utilized when a participant referred to the cost of energy as a challenge, including as a financial, emotional, or health burden in the everyday lives of themselves, their families, or their communities. Many residents referred to the unaffordability of current electricity bills, particularly given other monthly expenses, and noted that they did not have the ability or power to lower these high costs. They substantiated this claim by explaining what they *did* have the power to change: their own everyday routines in their homes, which did not necessarily impact their electricity bills.

Their statements shed light on a contradiction between ratepayer theory and practice. While utility companies commonly request that ratepayers modify their individual behavior to reduce daily electricity use and therefore lower electricity bills, the lived experience of ratepayers in the listening sessions revealed that behavior modification that reduces electricity usage in a home does not always lower their electricity bills; electricity usage is also influenced by other intersecting causal factors—e.g., building age and urban heat islands (see Section 3.2 in Chapter 1). It is a request for self-determination, rather than a lack thereof, that exposes the need to address this contradiction in practice. As one resident clarified:

It’s not that we are asking for anything. We are just being told to provide solutions. I believe that each person can provide solutions in their own home. From saving water, from saving 15 to 10 minutes in the shower. We are doing it, and a lot. We are saving water; we are not using coolers in hot weather. We are learning to use only one light at night. We move to the kitchen, turn off the living room [light]. We move to the living room, turn off the kitchen [light]. We move to the bedroom; we turn off all the lights.

We're doing a lot. The ones who are not doing much is the company [LADWP], which is not doing anything. We see that we save, we turn off all the lights and the bill does not go down. On the contrary, it keeps going up. I think that the ones who have to do something are the electricity company. We are doing a lot, I think. So, it is a very big dissatisfaction because, I am talking about my house, my business, which is so small. It is unfair that the bill arrives more expensive than the rent I pay for the premises, for my premises, which are so small. So, if I am running my business... my business is just food to take to my house. It is my job. Not to get rich, just to take food to my house. And it's unfair that it's so exorbitantly expensive. The electricity bill exceeds all my business's bills. That's what...we are doing. The company is not doing anything.

Here, the resident frames the problem as one of self-determination and accountability rather than purely financial or behavioral. On the one hand, she highlights the actions taken by ratepayers—both residential and commercial—to change their everyday behaviors and reduce energy usage by implementing strategies such as turning off lights when they leave a room and lowering the usage of high-energy-consumption appliances. On the other hand, she argues that despite these acts of self-determination, ratepayers are still not able to lower their electricity bills, and she holds the utility company accountable for resolving that problem. From her perspective, it is the behavior of the utility company, rather than the individual ratepayer, that needs to change to make energy more affordable and less of a daily burden for Angelenos.

It is also important to highlight that the concept of energy burden is understood as interwoven in other aspects of energy and economic security, which expands the common use in scholarly literature (Drehobl and Ayala 2020) and policy. As the resident points out, the ability to afford or to manage the “energy burden” is connected to her livelihood, to the possibilities of “tak[ing] food to [her] house.” This means that in most cases, energy burdens impact—and are also impacted by—other important sectors related to one’s ability to secure the basic necessities to live with dignity.

4.1.2 Self-Determination and Access to Financial Capital

One structural strategy aiming to increase self-determination among low-income ratepayers is the government-subsidized opportunities (i.e., rebates, incentives, and programs) designed to increase the affordability of access to efficient energy and clean energy technologies. That is, community members connected “self-determination” to “access to financial capital.” However, participants pointed to the limitations of that strategy in practice. The value “Self-Determination” and the causal factor “Access to Financial Capital” overlapped 11 times across all listening sessions. “Access to Financial Capital” was used when a participant referred to a need for and/or lack of access to financial capital, particularly as a necessary means to transitioning to clean energy technologies and achieving energy efficiency. As such, these participants experienced a lack of financial capital as a notable barrier impeding their ability to self-determine their own access to the benefits of Los Angeles’ energy transition.

The limitations of a lack of access to financial capital can manifest even in situations specifically designed to attend to the needs of low-income populations by providing them with decision-making power. One participant shared her lived experience with an EV rebate program that, while designed to give her more agency and access to purchase an affordable EV, in practice revealed underlying barriers to EV affordability. She told us:

Look, I already carry this experience with me. I already had it [with] the electric car. They won't forget me because one day I have to qualify. I won't lose hope. What they put there does sound very nice, everything. Then one says "Yes, I will qualify." Because they ask for your papers, you have no idea... And my X [the CBO employee who helped her], thanks to [X]. She filled everything in with me and I brought her everything—"Here it is [X]"—... "Look, I'm missing this!"—Here it's [X], okay. But [then], when I went to the dealership, they sent me the letter [saying] that [I had qualified] for seven thousand five hundred. ... It is a gift, they said to me [in the letter]. The guy in the [dealership] took us for a ride in the car. The car was worth twenty thousand, [it was] electric. And I was crazy excited going around in that car. And the man [told me]—"Drive around again, drive around again"—I felt like this car was mine. That I was riding in a car, never in my life have I had a car like that. One day I will have it thanks to you who will be flexible...

When it was time to fill out the paperwork, the [contract] said that they were going to give me no more than seven thousand dollars, [and an interest rate of seven percent]... And the bank [wanted to give me the remaining balance at] a twelve percent interest rate. Ah no, and they said, "I can't give you the car. Here it says seven percent down." And the bank was giving [the remaining balance] to me at twelve percent, and they said [it is this] or no [car]. No, well yes, tears came to my eyes, I got [so] frustrated. Because I [had] felt that this car was already mine.

So, imagine, having seven percent is having...good credit. So, no, I didn't qualify. I went to sell my car for three hundred dollars because I [thought I was] qualified for the program. That is very sad. And since it's a program for us, we can't afford to buy a car ... I have not had it, the joy of having such a car. But when people have high salaries, they don't enter those programs either. [Having more flexible qualification criteria] to have a car. ... It's what I [suggest].

This resident's narrative highlights not only the failure of this program to benefit the very population it was designed for—Angelenos unable to afford a market-priced EV—but also the increased burdens the program produced as hope and pride led to disillusionment and grief. Poor credit and, in turn, a higher interest rate disqualified this resident from utilizing or accessing the rebate she was technically eligible for. The eligibility criteria for the rebate program did not include a credit check, and therefore, she qualified for the rebate, began shopping for vehicles, and "already felt like this car was [hers]" before discovering that no bank would offer her affordable interest rates for the remaining balance. Thus, for this resident, the EV rebate program became a sign of procedural injustice rather than justice, as it revealed the remaining procedural barriers that must be overcome before people like herself are truly able to self-determine their purchase of an EV. Yet, equally important are the emotional scars this experience left, eroding the trust she has in the government institutions that are purportedly investing in strategies that produce more equitable energy outcomes.

4.1.3 Self-Determination and Barriers to Program Participation and Support

Government-subsidized programs are often designed to increase the user's ability to make their own decisions in relation to the targeted benefits, from affordable EVs to rooftop solar. However, as the last narrative revealed, in practice, not all residents in need of this support are able to fully benefit from

these programs. For those residents, barriers limiting access to program participation and support expose restrictions on their abilities to self-determine their own energy outcomes.

The value “Self-Determination” and the causal factor “Barriers to Program Participation and Support” overlapped 23 times across all 15 listening sessions. The code “Barriers to Program Participation and Support” was used when a participant referred to challenges in their access and actual use of government programs and other support mechanisms, such as subsidies and rebates. This intersection reveals eligibility criteria are often a limiting factor restricting residents’ access to program participation and support, and therefore further hindering self-determination. One resident suggests a primary barrier to equitable eligibility criteria is income limits:

But I think that something that can help is to [increase] the [eligibility] limits. I mean, make it not \$38,000. Make it \$52,000. Because then you know, you limit me. Because then, when I do my taxes I say, I better not have taken this last job, because I’m going to exceed my limit. And then, the next year, it’s going to be even more expensive for me to pay. Because look, out of \$40,000, out of almost \$50,000 you have to pay about \$3,000 in taxes a year. So, no. And I have a son. But if I didn’t have this child, what you have to pay goes up. And if we don’t have social security, it’s even more expensive. And so, that’s why a lot of people don’t do taxes, because it implies a very high cost. So, it’s very important to lower the limit, because if I do taxes obviously, I can have credit. I do taxes, I can access health care and probably we can access many things that we don’t know. But it is the access to the resource, inequity is present in all services, in the *use* of services.”

Here, the participant is pointing to broader structural inequities in the U.S. system of governance that incentivize residents to consider difficult trade-offs to maintain economic stability, a key determinant of energy affordability. These trade-offs include either restricting their income to access more subsidized resources and services or hiding their income to avoid paying taxes and fees, which disqualifies them from accessing government resources and services. In both cases, the resident determines their own path; yet this path is structurally limited, and they are unable to fully access the benefits of both their own income and available government resources and services. Expanding the income limit is one strategy this participant identified to redress these procedural inequities. However, their final message—“inequity is present in all services”—points to an important procedural distinction between *theoretical* access and *actual* use of a resource of service. To design resources for equitable access and use, we must both examine how people devise strategies to utilize services when presented with barriers to access, as well as understand the limitations that prevent access and actual use.

4.1.4 Self-Determination and Barriers to Accessing Electric Vehicles

Electric vehicles are an important example of a government-subsidized technology that remains inaccessible to many Angelenos. As listening session participants discussed the barriers that prevent their access to EVs, one key determinant their narratives identified was a lack of self-determination. The value “Self-Determination” and the causal factor barriers to accessing “Electric Vehicles [EVs]” overlapped 10 times across all 15 listening sessions. The code barriers to “Electric Vehicles [EVs]” was used when a participant referred to EVs. Here, we focus on the procedural challenges participants experienced or predicted in relation to accessing an EV.

A series of causal factors limit these participants in access to and use of EVs. Community-identified factors include: a lack of accessible guidance to make informed decisions, limited financial capital to purchase a used fuel car let alone an EV, and insufficient local EV charging infrastructure in their communities. These factors become limitations on their power to choose an EV as their mode of transit. However, they also point to how current structural inequities in transportation create the perception that EVs are simply inaccessible for lower- and middle-income Angelenos. As one participant stated: “Electric cars, to me, they’re for people with a lot of money. I don’t have that. So, I do want to make that change. But how am I going to do it?” In this participant’s understanding, while she has the will to transition to an EV, her ability to choose an EV is determined not by her will but by her (lack of) financial capital.

The causal factors that effectively limit participants’ potential for accessing EVs also relate to their ability to use these vehicles efficiently and economically in their everyday lives. One participant’s experience with EVs led her to articulate key challenges thwarting her ability to fully utilize EVs:

I have ... a friend, she told me. And I was talking to her because I want to buy a car. But there were no trucks, I was waiting ... And then I was ready to buy a car ... a friend scares me. She tells me, look, I left my gas car. And I [bought] an electric car. And what happens, it discharges very quickly. And more if I use AC, the battery goes out quickly. And I searched like crazy, and I went all the way to San Diego ... It is very difficult to find charging [stations] where you can charge. So, they are trying to put the cars in, but they are not putting the main thing, charging [stations]. There’s not enough [charging infrastructure]. So, I went to Target and there is another and another [charging station]. No wait, I’ll get in, but people are fighting [to charge]. They are causing people to fight with each other [to charge their EV]. It would be better to first design a strategy and put [charging infrastructure in place] ... So, I want to buy [an EV]. First, make it more affordable [for people] like me ... [or] at least like my friend. For the middle- or low-income class ...

But make it more affordable for the community. Because it seems to me that the cars are there and we have to make the change ... Those who want their luxury cars, over there, they [can buy] them. But we who buy something more affordable. It needs to fit my budget, so to speak. And then I’ll be able to get something more affordable for us. And [have the infrastructure] to recharge them. Let the [officials] make their strategy [like with] a gas station. To recharge [because right now] not even one works.

Her comments point to the ways in which policies aiming to promote the transition to clean energy can unintentionally increase inequities, particularly for lower- and moderate-income Angelenos. Referencing the recent plan “requiring 100 percent of new car sales in California to be zero-emission vehicles (ZEVs) by 2035” (Newsom 2022), this participant points to the increased burdens that a decrease in transportation choices will create if the current EV status quo is upheld. In her understanding, EVs are simply unaffordable for moderate- and lower-income Angelenos. Yet, even if they were affordable, she points to other factors that impede her access: the lack of available charging infrastructure in her community and mistrust in EV reliability given her friend’s experience with low battery range. Therefore, her message to make EVs “more affordable for our communities” must also be connected to a strategy to develop both the physical infrastructure necessary for equitable EV use in

their communities as well as access to educational opportunities and materials that allow community members to make informed transportation choices.

4.1.5 Self-Determination and Jobs, Training, and Entrepreneurship

The power to determine one’s own energy future in Los Angeles is not only about offering lower-income Angelenos subsidized opportunities and benefits. Access to high-road and well-paid jobs, career training, and entrepreneurship in their communities has direct impacts on self-determination. Our findings indicate that investing in those opportunities and capabilities is another way to invest in Angelenos’ access to making energy decisions for themselves. The value “Self-Determination” overlapped with the impact area of “Jobs, Training, and Entrepreneurship” 10 times across all listening sessions. One participant reacted to a discussion of LADWP program benefits by stating:

In my humble opinion, we should be considered. I don’t ask for free giveaways, I ask for a good job with a good salary for [the people of] the city of Watts. Because companies come and bring workers. And they don’t benefit the residents [living] there. They should give jobs to every community where they work. They should give jobs to the people of the community there with good pay. And that, in my opinion, would be help [the help I need].

This participant is not only emphasizing the need for local well-paid jobs that give residents of the South LA neighborhood Watts the freedom to make their own energy choices, but he is also pointing to the extractive practices of many local energy-related companies. As other listening session participants noted from the five energy justice communities, contaminating industries, such as local refineries and battery manufacturers, often utilize their neighborhoods’ land and natural resources, leaving pollution behind. Yet, they do not offer local residents sustainable benefits such as decent jobs. Jobs become the sustainable long-term lifeline that creates the conditions for community energy decision-making when subsidies, programs, and other temporary opportunities have run their course.

4.2 Code 2: Barriers to Program Participation and Support

“Barriers to Program Participation and Support,” as a causal factor, refers to obstacles, barriers, and challenges that community members face that limit or prevent participation in, access to, and/or utilization of existing energy-related incentives, subsidies, and other aid programs. This includes but is not limited to the barriers embedded in eligibility criteria. The “Barriers to Program Participation and Support” code overlapped with four causal factors and one impact area (Table 3), revealing inequities underlying the design and implementation of programs aimed at more equitably distributing energy-related benefits.

Table 3. Frequency of Overlapping Codes with Barriers to Program Participation and Support

Primary Code	Overlapping Codes	Frequency of Overlaps
Barriers to Program Participation and Support (Causal Factor)	<i>Impact Areas</i>	
	Moderate to Low Income	39
	<i>Causal Factors</i>	
	Predatory Practices	10

Primary Code	Overlapping Codes	Frequency of Overlaps
	Lack of Accessible Information	24
	Renter Issues	45
	Homeownership	22

It’s not that people just want action; they want specific action in the community. Because historically, our communities, especially lower- to moderate-income people. What happens is, we get left behind. Whatever the goal is, it’s like, this is what we are going to do, and then it just happens.

South LA Participant

The above epigraph emphasizes the historical lack of procedural justice in Los Angeles’ lower- and moderate-income communities in the way government programs and benefits are designed and implemented today. This section highlights how Los Angeles’ history of disinvestment, disenfranchisement, and lack of self-determination in particular neighborhoods is revealed through the ways in which programs aiming to redress inequities can also reproduce these inequities in practice. Factors including unregulated predatory practices, lack of accessible information, and ineligibility of renters and homeowners to access specific programs, impact moderate- and lower-income communities’ abilities to access benefits.

4.2.1 *Barriers to Program Participation and Support, and Moderate and Low Income*

Listening session participants discussed the barriers that prevent their access to “Program Participation and Support.” Their narratives consistently identified income limitations as a key determinant of inequity. The causal factor “Barriers to Program Participation and Support” and the impact area “Moderate and Low Income” overlapped 39 times across all 15 listening sessions. The code “Moderate and Low Income” was utilized when a participant referred to their economic status. In this section, we focus on how narratives connect economic status to the procedural challenges of accessing and utilizing existing government program support. This intersection reveals a series of impact areas and causal factors that delimit these participants’ inclusion into the process of building an equitable energy transition.

Numerous participants referred to the financial difficulties in accessing clean and efficient energy technologies via existing programs. Lower-income participants emphasized barriers to accessing programs due to structural factors such as language limitations, citizenship status, housing tenure, and information gaps. Moderate-income participants emphasized the shortcomings of current eligibility criteria that effectively exclude their participation in existing programs due to an incomplete understanding of their economic status. These participants highlighted the daily struggles they face to make ends meet, often taking on multiple jobs, occupying shared and/or multigenerational households, and developing strategies to lower expenses. Those actions that theoretically increase their disposable income do not provide them with sufficient funds to purchase clean, energy efficient technologies. Because of those very actions toward building a more dignified life for themselves and their families, these moderate-income residents become ineligible for program benefits.

One participant shared her own experience to clarify this contradiction in program eligibility criteria:

I live in Boyle Heights, and I worked for [Organization Name], I don't know if you guys are familiar with that agency, where they/we help low-income families with their utility bills. Such as electrical and gas, and the thing is, I work for that company and I don't earn that much, but yet I'm not qualified to get help with my electricity or gas. I helped a lot of people who make more than I do, but they get the help and that was a little concerning to me, that people like me who work have to pay bills, but that they are not qualified for assistance. It's always the low income. And I just don't know what to do. I live check by check ... and it's really hard to get help from someone to raise up the low-income guidelines a little to help people like me who doesn't earn that much; you know, they think we do, but we actually don't.

The contradiction this participant points to is layered. Not only is she ineligible to qualify for energy benefits that she cannot access without assistance, but the very reason that she is ineligible is the salary she earns by helping others access this assistance. Her experience teaches us that eligibility criteria should not be limited to formal annual income; rather, it could include an understanding of the multiple expenses Angelenos have to pay to pursue their lives with dignity, and the related burdens they experience daily. Furthermore, as she and other participants noted, the cost of living and what it means to be low- or moderate-income in Los Angeles changes depending on where you live in the city.

4.2.2 Barriers to Program Participation and Support, and Predatory Practices

One challenge undermining equitable access to the benefits of existing energy-related programs is the predatory practices of service providers. The causal factor “Barriers to Program Participation and Support” and the causal factor “Predatory Practices” overlapped 10 times across all listening sessions. The code “Predatory Practices” was used when a participant referred to service or resource providers who take advantage of local communities. We examine the processes by which identified practices create mistrust in energy technology programs due to the increased burdens produced by those providers.

Two types of predatory practices were identified consistently throughout the listening sessions. The first relates to the appliance providers that LADWP subcontracts in their customer-facing energy efficiency programs. The second relates to solar energy providers who are not LADWP subcontractors, yet residents connect their mistrust in those providers with mistrust in the safe benefits of energy program opportunities. One participant described his frustration with LADWP subcontracted service providers:

I was going to comment on the appliance assistance program for refrigerators and such. And what they are offering is garbage. At least they should offer something good, but they give them, when they least say they pay a dollar a month or a year, whatever, but they need to help, they need to offer good appliances, not crap. Personally, I applied to have my house fixed, they were going to insulate the windows and replace the glass, it was a complete scam, and supposedly they were sent by [LADWP]. When I saw that they were doing things wrong—no! [LADWP] also ordered me to put in... so that the kitchen wouldn't leak... it was [garbage] what they sent me to put in. So what good are they? They don't check if the contractor is doing his job correctly or not. So why do we want this kind of help?

This resident is emphasizing the need for accountability with subcontracted service providers to ensure quality products and service. The absence of accountability results in community mistrust that dissuades residents from seeking these available benefits, given that their application becomes more of a problem than a solution. Beyond the specific programs, this mistrust sows the seeds for questioning the benefits of clean and efficient energy technologies and services in general. Furthermore, this resident interprets the poor quality of this service as a lack of respect for the ratepayer, asking LADWP: If these energy efficient appliances and upgrades don't function, "why do we want this kind of help?"

The reservations residents feel regarding the benefits of energy efficient appliances and upgrades are confounded by their experiences with other clean energy technologies and their providers. Participants called particular attention to the predatory practices of solar energy developers in their communities. One resident shared her ongoing struggle with one solar developer:

I have a very big problem. And it is with [company x]...because they said they were from [company x]. Before it was not [company x], it was another company and [company x] bought it. They made me sign a 20-year contract when it started ... And that contract, I still pay \$48 a month, apart from my electricity bill. And I would like to know why they made me sign that contract, for 20 years ... It was the other company and [company x] bought it ... I'd like to know if [company x] can delete it ... before the company was called [company y], but [company x] bought it. So, this is my question to you. If they [LADWP] can help us to delete that [contract]? For about \$48 a month apart from the other electricity bill. And it's a 20-year contract, with another company, but [company x] bought it ... [And now] it's the same with [company x]. We continue to pay the \$48. And we continue to pay for electricity.

This participant is struggling with the lack of information related to her rights and benefits regarding the solar panels installed on her rooftop, and a lack of support from those who have the power to help her navigate her current problem. In her understanding, in practice, she receives no benefits from the solar panels on her rooftop yet pays monthly energy bills to both the company and LADWP. Thus, while the company is profiting from her real estate and owns the panels, she believes she is paying more energy expenses than she would have without solar panels. Although her request for help from LADWP is beyond the purview of their authority, the request itself reveals how ratepayers connect energy technology providers and their actions with LADWP. That connection fosters a lack of confidence in the utility company's ability to care for their most vulnerable ratepayers. The emotional burdens produced by these traumatic experiences become a barrier deterring participation in existing energy programs.

4.2.3 Barriers to Program Participation and Support, and Lack of Accessible Information

Related to the disorientation produced by predatory practices, participants also emphasized the negative impacts produced by a lack of accessible information to assess existing energy-related programs. The causal factor "Barriers to Program Participation and Support" and the causal factor "Lack of Accessible Information" overlapped 30 times across all 15 listening sessions. The code "Lack of Accessible Information" was employed when participants described situations in which they were unable to make informed decisions. We examine the processes by which informational barriers in

decision-making were produced, limiting participants' knowledge of important benefits, rights, and burdens.

Participants' experiences revealed the ways in which a lack of knowledge or misunderstanding of existing benefits can reproduce energy inequities. More specifically, they pointed to the absence of sufficient accessible information related to not only the existence of programs and policy protections, but to the procedures needed to access those benefits and protections. In fact, the close relationship between information access and energy access is revealed in our listening session analysis. We found participants connected "Lack of Accessible Information" to "Energy Affordability and Burden" 24 times. One resident shared a collective experience with the burdens produced by the lack of accessible information in her community:

Because I had an experience in 2020, when it was said that LADWP was going to give away \$500. But people got confused. They didn't apply for that, but I had to help several parents make an account so they could apply there. So, a lot of people lost that [opportunity] and got into a lot of debt.

This narrative reveals *how* knowledge of the potential benefits that LADWP could provide the participant's community was not enough to guarantee their access to those benefits. In fact, misunderstanding the procedures needed to access one specific program creates more financial burdens for members of the participant's community, increasing their long-term economic instability.

While misunderstandings and partial knowledge can reproduce inequities, a lack of knowledge revokes Angelenos' power to determine their own energy futures. At times, the significance of that lack of knowledge is hidden within indirect relationships to the energy sector, emerging in the form of other impact areas, such as housing or transportation. One participant related their struggles with housing tenure to energy insecurity by tracing their experience of disempowerment:

Now with COVID, many were inviting people [to stay with them] to be able to pay their rent. So, the owners were evicting them. Why? Because they were going to pay them more. I always go around in workshops and wherever I go, in videos, I say: they say, they can't evict us. If before they couldn't be evicted, now with the pandemic they can even less. You are allowed to bring as many people as you want into [your household] and they cannot be kicked out. Because there is a lot of tenant protection. There's a lot. There is rent control. And throughout the Los Angeles community there is rent control. Something that many communities do not know. So, that's what we are informed about. Empowering the community ... How are we going to empower ourselves? Knowing our rights. And it doesn't matter our legal status. It doesn't matter how we are. Knowledge is power.

Focusing first on a lack of community knowledge related to existing housing protections—including California's COVID-19 eviction moratorium and Los Angeles' rent control policies—this participant reveals how programs designed to aid vulnerable residents in specific impact areas fail to fulfill their goals due to the inability to reach prioritized constituents. In her analysis, part of that failure has to do with the structural inequities that prevent these communities from knowing their rights, even when they understand the power of knowledge.

4.2.4 Barriers to Program Participation and Support, and Renter Issues

The last narrative highlights the importance of understanding how the relationship between renters and homeowners unevenly distributes the benefits and burdens of energy programs. While our coding methods separated “Renter Issues” from “Homeownership” to maintain analytic clarity, the nature of their relation to causal factors impacting housing and energy security is deeply intertwined. Therefore, this section combines our analysis of these causal factors to argue that their energy-related problems must be understood by considering both experiences.

The causal factor “Barriers to Program Participation and Support” overlapped 45 times with the causal factor “Renter Issues” and 22 times with the causal factor “Homeownership” across all listening sessions. The codes “Renter Issues” and “Homeownership” were used when participants described problems with housing tenure. We analyze the interrelated challenges that both renters and landlords face related to eligibility and implementation of energy program benefits. One participant who lives in a rent-controlled apartment described the potential dangers of benefiting from LADWP program updates. She explained how a positive benefit—upgrades to housing energy infrastructure—can in fact become an additional burden on renters:

... if he [the landlord] fixes your property, if he comes in your ... I live in a 1932 house, you can forget about it. He ain't doing it. I basically did the repairs myself because I just got sick of them: ok, I'll do it, don't worry. He doesn't bother me, I don't bother him, I pay him the rent. However, everybody's not lucky like that because when you live in an old building and they upgrade the electric and they upgrade the floors and all this stuff it's gonna affect people's rent because they're not in a rent-controlled ... I'm in a rent-controlled, City of Los Angeles is rent-controlled, nobody else, everybody else's rent can go up in September, it's gonna be sad. Because a lot of people won't be able to stay where they're at. So, they're asking to add some more onto that with the car and electric and all that, make sure you can afford it ... you're not getting better, you're gonna get worse if you can't afford it.

This narrative exposes a series of potential risks that both renters and homeowners must consider when implementing upgrades to their home energy systems and efficiency. According to listening session participants, for residents who live in non-rent-controlled housing, homeowners who implement upgrades—even subsidized LADWP upgrades and benefits—will most likely increase rent to cover the production cost. For those living in rent-controlled housing, homeowners will most likely refrain from investing in upgrades given their inability to utilize rent to cover costs, and therefore place the burden of safety and efficiency upgrades on renters, who are ineligible for LADWP benefits. As a consequence of this dynamic, ratepayers are reluctant to apply for these benefits and upgrades that directly affect their lives and livelihoods. Ultimately, that leaves renters in the precarious position of either displacement or having to live in unsafe and inefficient homes, impacting energy affordability, access to more efficient energy appliances, and related burdens, including health. Given the history of existing risks related to LADWP energy efficiency programs, participants warn that those existing burdens could be exacerbated as Los Angeles moves into the clean energy transition.

Another recurrent concern among participants was the vulnerability of residents living in informal housing arrangements. Participants referred to “houses in the back” that are detached from the principal residence, yet not formalized in Los Angeles as accessory dwelling units. Renters of those

homes must pay all their utility and service bills through the landlord and therefore remain ineligible for many government benefits and programs. They also lack decision-making power to upgrade their own homes. Their ineligibility to access home energy programs increases their vulnerability to related financial and health burdens.

The burdens renters experience are deeply intertwined in the challenges of homeownership for low- and moderate-income Angelenos. While homeownership remains extremely inaccessible for most lower-income Angelenos, those who are able to purchase a home continue to struggle to maintain and improve it. As one participant explained:

I'm a homeowner. And I have a duplex, so I rent out. Me and [my wife] rent out. And we're trying to get solar from the Department of Water and Power, it's difficult. Yes, you have subsidies and stuff. But you gotta put up almost twenty grand just to get the solar power. Who's going to take on all that with my tenants. So, if I have a tenant there, I would think that they'd have to help pay to get this solar there. Or there should be a subsidy from the Department of Water and Power, and the money that's coming down to reimburse the communities of low income. So, we can help them and we can help ourselves at the same time, without having that extra burden. I just bought the house. And buying the house I had to pay \$900, just for a deposit of water. And my tenants don't pay for water. Where am I going to get that at? With the burden that's going on right now. So right now, I got a final notice coming, because I'm short \$300 on the \$900. So there has to be some kind of alleviation. And it has to look at both sides, on the renters and the owners. And there should be stronger subsidies for the homeowners who have renters.

While this participant clearly understands and values the benefits of LADWP and other government agency clean energy programs, he is effectively excluded from those programs in practice. For lower- and moderate-income Angelenos, purchasing a home creates new and long-term financial burdens that limit the capacity of owners such as himself to invest in subsidized solar energy and other energy efficiency improvements. If they were to invest in those upgrades, he states that the cost would have to be transferred to the renters. One of the reasons for this intersecting burden is the absence of energy efficiency programs and subsidies designed for renters and programs tailored for local homeowners with rental properties. The implications of the absence of such co-benefits are felt in low- and moderate-income renters' and homeowners' household budgets as they struggle to pay monthly utility bills.

4.3 Code 3: Energy Affordability and Burden

Understanding “Energy Affordability and Burden” as a causal factor, this coded category of energy justice refers to passages of the listening sessions that call attention to people and their communities’ ability to pay energy-related costs embedded in their everyday lives—from transportation and housing to work, food, and recreation. Energy burdens are often understood as “the percent of a household’s income spent on utilities for heating, cooling, and other energy services” (Drehobl and Ayala 2020). This code expands that definition to consider the trade-offs people and families must make to pay all their energy bills alongside other monthly financial burdens, such as the cost of health care, childcare, and rent. The “Energy Affordability and Burden” code overlapped with many of the above codes; therefore, we are highlighting two relevant codes—one factor and one value, as shown in Table 4—

that help us understand the procedural changes needed to increase Angelenos’ access to affordable energy.

Table 4. Frequency of Overlapping Codes with Energy Affordability and Burden

Primary Code	Overlapping Codes	Frequency of Overlaps
Energy Affordability and Burden (Causal Factor)	<i>Causal Factor</i>	
	Barriers to Program Participation and Support	74
	<i>Values</i>	
	Responsibility, Accountability, Transparency	16

4.3.1 Energy Affordability and Burden and Barriers to Program Participation and Support

Two codes with a notably high frequency of overlaps in our analysis were “Barriers to Program Participation and Support” and “Energy Affordability and Burden.” Over the course of the 15 listening sessions, we identified 74 times when these concepts overlapped in the same statement. Their consistent relationship in participants’ narratives exposes a common experience: while there are existing LADWP programs designed to increase energy affordability for ratepayers, participants in these sessions emphasized the barriers to accessing those benefits that maintain ongoing energy burdens. Although this intersection was already analyzed in the sections above, here, we intend to highlight the procedural mechanisms that impact access to specific clean energy technologies and services.

One participant wove these concerns into a comment related to EVs as a priority impact area for her community. She tied the inaccessibility of EVs to ongoing energy affordability problems related to transportation and the barriers many low- and moderate-income residents face in benefiting from existing EV incentive programs. She explained:

I think that some of the barriers that we actually have seen is that, with larger corporations and government at the higher levels, they are not on the ground to actually see the average taxpayer or person that lives everywhere. And the struggles that we actually have. So, for example, everybody wants to buy a Tesla car, but it isn’t necessarily affordable. Therefore, the missing middle, as well as other people who are not able to afford that type of a car, are completely left out. And then for businesses who are actually focusing, not on the Teslas, that are focusing on low-speed neighborhood electric vehicles. They are also being subject to the burdens of not fitting into the category of those charging stations. So, the charging stations are these huge cables that you plug into your car. When for example, the low-speed neighborhood electric vehicle is actually just a three-prong outlet that is required. That would be much more feasible to have at your local department store or a mall, for example. I think those are some of the barriers that we have, that they are not considering all of us. It’s always at a certain financial status that they are actually thinking of the people who are going to be traveling to Vegas every weekend. But not the people that are actually traveling to work or the elders, or the missing middle.

By pointing to the “missing middle,” this participant is exposing a subset of ratepayers who cannot afford the more efficient clean energy technologies, such as EVs, and yet are not included in the program design for subsidized benefits given their relatively higher incomes. This lack of access thus increases the energy inequities among ratepayers: as energy technologies become more efficient yet also more expensive, moderate-income Angelenos receive disproportionately fewer of the benefits while becoming more financially burdened. Furthermore, she highlights the need to consider other disadvantaged groups, such as commuters and seniors, who are often left out of program design considerations. Access and use of these technologies—whether via direct purchase or program benefits—become exclusionary procedural mechanisms for those left unconsidered. However, it is important to consider who is and should be responsible and accountable for developing more equitable distributions of energy resources and services.

4.3.2 Energy Affordability and Burden, and Responsibility, Accountability, and Transparency

The question of who is responsible for developing a transparent energy transition and accountable for its outcomes was posed during the listening sessions. The answers participants gave us manifested in the intersection of the causal factor “Energy Affordability and Burden” and the value “Responsibility, Accountability, and Transparency” that overlapped in the same statement 16 times across the 15 listening sessions. We coded comments with “Responsibility, Accountability, and Transparency” when participants described either their presence or a lack thereof. Here, we examine the direct impacts that their absence has on financial and other burdens that the current energy system produces. Participants understand themselves as part of the energy system as ratepayers, and therefore demand transparency and accountability. As one participant explained:

If the office is here, it has to give access to the community. All that they are offering, supposedly you are saying that there is a lot of help, they have to [inform] the community. Because they are benefiting from the community, because they are taking our money every month. So we have the right to know what they are offering us. Now for the pandemic, supposedly that office had a lot of money that the government had given to help the community. And I never saw that money, I wanted to know where was that money. Because if I am low-income, I also have the right to collect a little. Because I am a ratepayer, I have been here for 24 years paying a bill. So, I feel that I also have the right to see if I could qualify for help even with a dollar. And I’m sorry they didn’t give it. So [the benefits] need more scope, we need more information. Inform the community, I feel. Sorry. My respects, my respects.

This participant teaches us why procedural justice is not charity: benefits to ratepayers regardless of their income are not handouts but rather the responsibility of a company to its customers. Therefore, following the logic of listening session participants, customers, like shareholders, are entitled to transparent access to information regarding their investments in Los Angeles’ energy system and transition. They are also entitled to mechanisms of accountability that ensure the equitable distribution of their funds. Procedural justice is about being part of the process as a decision-maker—sharing the burdens, but also and mainly the benefits, of this transition. Equity is about knowing how this process “is proceeding” and being able to inform and decide your community’s energy future.

5 Conclusion

This chapter has laid the groundwork for operationalizing a crucial component of procedural justice—LADWP’s engagement with historically underserved communities and CBOs—to define where and when to prioritize more equitable goals and strategies in Los Angeles. This analysis and its main findings are critical to ensuring fair, equitable, and inclusive participation in the decision-making process for Los Angeles’ energy transition. Employing a mixed-methodological approach, we identified critical procedural barriers and challenges to structure our lens for understanding energy-relevant inequities in areas of impact prioritized by Steering Committee members and listening session participants.

Here, we employ energy justice as an *analytical tool* to guide our analysis of how values are integrated into the LA energy system and of the causal factors that impact the city’s energy outcomes. These findings informed Chapter 1 on justice as recognition, where energy justice is employed as a *conceptual tool* to connect the tenets of distributional, procedural, and recognition justice. In Chapter 3, the analysis of energy equity strategies on procedural and recognition justice will support energy planners, ratepayers, and CBOs to develop community-grounded energy strategies and actions as a *decision-making tool* for guiding the energy transition.

The three primary codes highlighted in this chapter—(1) self-determination, (2) barriers to program participation and support, and (3) energy affordability and burdens—and their intersections with critical categories of inequity reveal mechanisms and measures that must be redressed to achieve procedural justice. Listening session participants emphasized the need for self-determination as decision-makers in the LA energy transition, reminding us that a deliberative process is fundamental to justice.

Residents identified barriers in existing government energy support programs that limit their capacity to make their own energy-related decisions. In turn, those barriers augment the burdens ratepayers experience and limit their access to the benefits of this transition. One of the key findings that this intersectional relationship revealed is the importance of developing and maintaining mechanisms of transparency and accountability that ensure the equitable distribution of energy services, resources, and technologies. *Equity, as our participants insisted, is about making and following through with a commitment to prioritize historically underserved and overburdened communities in LA’s energy transition.* Chapters 3-17 operationalize strategies committed to that goal.

6 Glossary

Actions/Strategies: the means used to solve identified problems in an impact area; actions and strategies involve programs such as bills, regulations, rates, subsidies, and investments and how they are designed, implemented, and evaluated (Dubash et al. 2022)

Causal Factors: “Events, incidents, happenings that lead to the occurrence or development of a phenomenon” (Buckley and Waring 2013, 156).

Climate Justice: the remediation of the impacts of climate change on poor people and people of color, and compensation for harms suffered by such communities due to climate change (Burkett 2008)

Co-Creation: “a process through which two or more public and private actors attempt to solve a shared problem, challenge, or task through a constructive exchange of different kinds of knowledge, resources, competences, and ideas that enhance the production of public value in terms of visions, plans, policies, strategies, regulatory frameworks, or services, either through a continuous improvement of outputs or outcomes or through innovative step-changes that transform the understanding of the problem or task at hand and lead to new ways of solving it” (Torfing et al. 2019, 802)

Community Engagement: Community engagement often entails public participation through an ongoing, two-way or multidirectional process, ideally with an emphasis on relationships and trust-building rather than instrumental decisions. The latter are processes where engagement becomes the instrument to achieve social acceptance (Stober et al. 2021).

Disadvantaged Community: “Disadvantaged communities refers to the areas which most suffer from a combination of economic, health, and environmental burdens. These burdens include poverty, high unemployment, air and water pollution, presence of hazardous wastes as well as high incidence of asthma and heart disease. One way that the state identifies these areas is by collecting and analyzing information from communities all over the state. CalEnviroScreen, an analytical tool created by the California Environmental Protection Agency (CalEPA), combines different types of census tract-specific information into a score to determine which communities are the most burdened or “disadvantaged”” (California Public Utilities Commission 2023).

Energy Equity: the equitable distribution of social, economic, and health benefits and burdens of energy across all segments of society (Jenkins 2017)

Energy Justice: the provision of safe, affordable, and sustainable energy to all individuals, across all areas, (Jenkins 2017); this is done with a framework informed by justice movements, including attention to three core tenets:

- *Distributional justice* seeks to ensure a just and equitable distribution of benefits and negative impacts of the clean energy transition.
- *Justice as recognition* seeks to understand and address past and current energy inequities by analyzing structural causes of exclusion and vulnerability and specific needs associated with energy services among social groups.
- *Procedural justice* aims to actively engage partners and communities throughout the project, to co-design the analysis, and shape the resulting equity strategies (Energy Equity Project 2022).

Energy Transition: a large-scale or deep societal change in the production, distribution, and use of energy; this transition can entail transformations in social-technical systems and systems of policy and governance intended to substantially improve the outcomes out of unsustainable pathways, such as fossil fuel use (Carley and Konisky 2020)

Environmental Justice: the distribution of environmental hazards and access to all natural resources; it includes equal protection from burdens, meaningful involvement in decisions, and fair treatment in access to benefits (U.S. EPA 2023)

Equity Outputs: Equity outputs are the immediate, easily measurable effects of an action aimed at achieving equity (Dubash et al. 2022).

Equity Outcomes: Equity outcomes are the ultimate changes that a policy will yield (Dubash et al. 2022).

Equity: Equity refers to a measurement of fairness and justice. Unlike equality, which refers to the provision of the same to all, equity aims to recognize the historical and ongoing differences in experiences and outcomes between people, groups, and communities to redress those imbalances.

Frontline Community: a community, frequently a low-income community of color, that experiences the first and worst consequences of environmental and climate change including floods, heatwaves, and other climate extremes as well as the impacts of facilities that are used to extract, produce, process, and transport energy resources.

Impact Areas: particular sectors and subsectors of the energy system impacted by causal factors

Just Energy Transition: a deep societal change in the energy system that fulfills at minimum three of the tenets of justice: recognition justice, procedural justice, and distributional justice (McCauley and Heffron 2018)

Justice involves removing barriers that prevent equity through energy actions (strategies) that offer individuals and communities equal access to energy resources and options to self-determine their energy goals (Romero-Lankao and Nobler 2021).

Participation relates to the involvement of the public in infrastructure siting and other clean energy decisions and policies (Stober et al. 2021). Participation is an umbrella concept that includes processes of community engagement and public decision-making (Stober et al. 2021). Participatory decision-making denotes inclusion of actors such as underserved communities in an energy project as a decision-maker. Direct participation refers to the level of economic and/or political involvement of a local community or municipality in an energy project.

Underserved Community: a community, frequently a low-income community of color, that (a) does not benefit from energy programs, investments, and technologies, (b) is not recognized, considered, or able to participate in energy decision-making (Klinsky et al. 2017)

Values: the ethical paradigm that structures the sociocultural norms, beliefs, and practices guiding how a group of people prioritize and relate to the current energy transition (Jenkins 2017)

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Appendix A. Steering Committee Charge and Protocols

The City of Los Angeles has set ambitious goals to transform its energy supply—so LADWP partnered with the U.S. Department of Energy’s National Renewable Energy Laboratory (NREL) on the Los Angeles 100% Renewable Energy Study (LA100), a first-of-its-kind objective, highly detailed, rigorous, and science-based study to analyze potential pathways to achieve a 100% clean energy future.

Released in March 2021, the LA100 study found that Los Angeles can achieve reliable, 100% renewable power by 2035. But while LA100 identified infrastructural changes to achieve clean energy transitions across power, buildings, and transportation sectors, more work is needed to analyze strategies that achieve a just and equitable clean energy transition.

On September 1, 2021, the LA City Council voted unanimously to direct LADWP to achieve 100% carbon-free energy by 2035 “in a way that is equitable and has minimal adverse impact on ratepayers,” specifically prioritizing equity for environmental justice communities, while “shifting energy benefits to renters at equitable rates.”

To develop implementation-ready strategies to answer this call, the LADWP Board of Water and Power Commissioners authorized NREL to lead the LA100 Equity Strategies project in partnership with the University of California Los Angeles (UCLA).

Ensuring all Angelenos will share in the benefits of the clean energy transition is a fundamental priority for the City of Los Angeles.

LA100 identified the infrastructural changes Los Angeles can implement to achieve deep decarbonization, and now LA100 Equity Strategies will identify ways to ensure those changes are made equitably.

A.1 Approach

LA100 Equity Strategies picks up where LA100 left off by applying cutting-edge modeling and analysis to answer the question: How can Los Angeles ensure its transition to 100% clean energy will improve energy justice as measured by metrics including reduced energy burdens, increased access to energy services like cooling and electric mobility, and improved quality of life?

LA100 Equity Strategies will provide answers by bringing together energy and environmental justice communities and other key Los Angeles stakeholders to identify prioritized equity outcomes in this clean energy transition—particularly for those in disadvantaged communities.

To inform these outcomes objectively and credibly, *NREL will model sector-specific strategies under different scenarios across sociodemographic, geographic, and building characteristics to achieve prioritized outcomes.* Community members will be active participants in the study through an ongoing feedback loop that includes structuring the goals, iterating, and evaluating the results of the analysis.

The results will provide LADWP, the City of Los Angeles, and community leaders with extensive information for decision support at a detailed, implementation-ready level. The suite of options to meet community needs and goals for energy justice will include the metrics and methodology needed to monitor LA’s progress toward reaching these goals.

A.2 Steering Committee Role and Goals

The LA100 Equity Strategies Steering Committee will be responsible for providing strategic direction and play a critical role in helping to guide the LA100 Equity Strategies work by identifying prioritized energy equity outcomes and providing input, ideas, comments, and feedback throughout the project. The Committee will meet once a month from October 2021 through project culmination on May 5, 2023.

LADWP will consider Steering Committee input when developing finalized equity strategies and policies for LA's transition to clean energy, along with input from the broader community and stakeholder engagement process, technical and regulatory requirements, and other city needs and goals. Adoption authority for LA100 Equity Strategies is held by LADWP, based on modeling and analysis from LA100 Equity Strategies and the Strategic Long-Term Resource Plan (SLTPR).

A.3 Compensation

LADWP will compensate underrepresented voices and organizations who need resources to participate in the Steering Committee.

A.4 Composition

To represent the diverse communities and stakeholders in Los Angeles who have long been affected by the city's energy inequities yet lacked the power to shape energy decisions, the Steering Committee will primarily be composed of representatives from energy and environmental justice advocacy groups, CBOs, and community leaders from disadvantaged communities.

Steering Committee members were identified through an empirical process that started with the identification of more than 150 stakeholders and potential local non-profits and community leaders. This list was then refined to ensure geographic coverage, particularly of disadvantaged communities within Los Angeles, and to prioritize coalitions, alliances, and partnerships that could represent diverse voices on the Committee.

A.5 Participation and Collaboration Principles

Steering Committee Principles

The preferred deliberation process is a collaborative process whereby Steering Committee members choose to cooperate to achieve shared and/or overlapping objectives, in support of the Department of Power and Water's direction for a more just and equitable transition to clean energy in Los Angeles. By agreeing to serve on the Steering Committee, members commit to the following principles:

- Participate in an active and focused manner – commit to success of the process.
- Interact respectfully with all other members, valuing all perspectives.
- Communicate interests.
- In meetings, be brief and concise in communications, and be prepared.
- Help involve all members.
- Seek solutions for all – help to integrate each other's interests into creative solutions that address diverse needs.
- Commit to a good faith effort.

- Share relevant information.
- Attend all meetings, start on time.
- Participate effectively, using open, frank communications within the Steering Committee, and when sharing reports of Steering Committee discussions, do not attribute discussions to any individual member.
- Keep cell phones in silent mode and, when meeting in person, minimize screen time during meetings.

Deliberation Process

The preferred deliberation process includes:

- A consensus model to promote collaboration and avoid contentious voting
- Shared leadership rather than elected positions to foster collaboration and avoid competition
- Working groups, which will function as a space for more focused deliberation among smaller groups
- An understanding that once equity strategies are identified, LADWP will decide on the implementation plan.

Facilitator Principles

Meetings will be conducted using a facilitator, who will:

- Maintain a neutral position during Steering Committee discussions.
- Work to ensure that all Steering Committee members have the opportunity to participate equally.
- Guide meeting discussions per the agenda and manage time.
- Provide dialogue activities as needed for productive outcomes.
- Enforce the Steering Committee collaboration principles stated above.
- Ask “why” to clarify interests.
- Track actions, next steps, and deadlines.
- Participate in agenda preparation as part of meeting the above responsibilities and integrating the Steering Committee in the planning process.

We also will:

- Notify the public about Steering Committee membership after holding the first community engagement meeting.
- Keep the public informed on Steering Committee and LA100 Equity Strategies developments as the study moves forward, whether in person, on their website, or on social media.
- Include the public in public (e.g., community engagement) meetings, but not in all Steering Committee meetings. It may be difficult to accomplish much if all Steering Committee meetings are public, and it may also constrain some of the advice we are getting from the Steering Committee group if they are performing for a public audience.

A.6 Primary Members and Alternates

The protocol for primary members and alternates is guided by goals for consistent involvement, which will benefit the Steering Committee process and contribute to the success of the LA100 Equity Strategies project. *Primary members* refer to the members who were initially invited. Each primary member can identify an *alternate representative* or a proxy who can substitute for the primary if she, he, or they are unavailable for a meeting. Alternates are highly encouraged to attend the meetings as observers. In the event of an alternate is asked to step in for a primary member, it is the primary’s

responsibility to ensure that the alternate is briefed on the process to date before activity participating.

A.7 Working Groups

Working Groups are integrated into the community engagement process. Working Groups will generally meet one week following the Steering Committee meetings for more extensive discussion of the topics discussed in the Steering Committee meetings as related to their energy justice areas of focus. The specific energy justice focus of each Working Group will be decided via consensus by the Steering Committee. However, NREL will present a suggestion of eight possible focus categories developed from our analysis of the energy justice issues in Los Angeles. They will be the following:

1. Clean renewables
2. Energy burdens
3. Policy and strategy
4. Housing and buildings
5. Jobs
6. Health
7. Pollutants (e.g., air and other toxins)
8. Transportation

Depending on the focus of individual Working Groups, they may decide to focus on a subset of the Steering Committee topics. The Steering Committee's initial input, questions, ideas, and concerns should help to guide the Working Group meeting discussions. Working Group reports will be provided at the Steering Committee meetings.

The Working Groups will be comprised of Steering Committee members as well as other identified community stakeholders. Working Groups will be composed of moderate sizes (~10-15 members) to contribute to productive and inclusive discussions.

A.8 Meeting Agenda and Frequency

The Steering Committee will meet at least once a month. Working Groups will be established by the Steering Committee once it is convened. Working Groups will generally meet monthly or at their discretion. Meeting will be approximately 2 hours, held virtually at least through 2021.

A.9 Meeting Logistics and Communications

Steering Committee members may want to share information and documents with other members during the duration of LA100 Equity Strategies. To ensure that all members have the same information available to them, all documents are to be distributed through the established LADWP point of contact, who is listed at the end of this document.

A.10 Email Communication

The Steering Committee is intended to be a collaborative experience, in which members work through issues and dialogue in a group setting to gain mutual understanding. So, Steering Committee members

agree to avoid engaging in email “dialogue” with other Steering Committee members, and instead commit to using Steering Committee meetings for dialogue and discussion purposes. Email exchanges often do not constitute constructive dialogue and at times can result in unproductive exchanges that can cause unraveling of mutual understanding and collaboration.

A.11 Media Interaction

Given the high interest in the LA100 Equity Strategies project, there will likely be coverage of the study in local media, blogs, and other forms of communications. Steering Committee members agree to respect the open, frank discussions that occur within the meetings and not attribute specific conversations to other Steering Committee members in interactions with the media and other external communication channels. Furthermore, Steering Committee members agree not to make statements about Steering Committee meeting discussions and deliberations. The overriding consideration in all communications among Steering Committee members is to honor and sustain the constructive, collaborative process. While Steering Committee members are free to speak with the media from their perspectives as individuals or representing their respective organization, members are not to serve as a spokesperson on behalf of the Steering Committee.

A.12 More Information

The main points of contact for the LA100 Equity Strategies project and Steering Committee are:

- Dawn Cotterell, LADWP Senior Public Relations Specialist dawn.cotterell@ladwp.com (Main logistics contact)
- Vanessa Gonzalez, LADWP Resource Planning, Development & Programs vanessa.gonzalez@ladwp.com (Main content contact)
- Paty Romero-Lankao, NREL Distinguished Senior Researcher Paty.RomeroLankao@nrel.gov

Appendix B. Codebook Names and Definitions

Table B-1. Code Names and Definitions

Code Name	Definition to Guide Coding
Structural Phenomena	
(Dis)Investment and Development	
Economic Development and Land Use	Existing land use and how it relates to opportunity and economic growth; preferred land use; general economic development.
Economic Development and Energy	Economic growth and development related to energy and/or energy business.
Gentrification and Displacement	Housing, job, economic displacement, homelessness, geographic segregation; feeling the push to leave community but not wanting to; rent/landlord caused displacement because of upgrades to home.
Socioeconomic Marginalization	Historic disinvestment in communities, equity vs equality, being left behind; those with and without means get different things (and have different experiences in their communities).
Neighborhood Disinvestment	Physical manifestation of socioeconomic marginalization. Mention of lack of upkeep, excess litter, poor infrastructure; community empowerment/pride in ownership.
Resilience	
Grid Resilience	Threats to electrical grid resilience and practices that support resilience; instances (or insinuations) or examples of resilience or the lack of resilience in the grid; how technologies may help or threaten the resilience.
Community Resilience	Programs or strategies that support a community's energy resilience; could also be related to health; economic resilience; examples of a community being able to withstand hardships.
Public Health and Safety	
Emotional Burden	References to emotions like hurt, sadness, pain, etc. Sometimes related to physical environment; and references to systems to support emotional burdens.
Heat Wave	Mention of heat wave, lack of AC, dealing with the heat.
Shade	Shade or lack thereof (i.e., (un)covered bus stops); lack of trees or presence of trees.
Pollution	
Dumping	Environmental pollution via dumping; physical contamination of certain areas and how it impacts those living there (trash as well); what people are doing to clean up or prevent dumping; targeted; trash and other pollution.

Code Name	Definition to Guide Coding
Mobility and Pollution	Clean4 transportation, negative effects of transportation/mobility on surrounding communities, or the desire for clean transportation.
Pollution (other)	General pollution or contamination; noise, odor, other contaminants.
Air Pollution	Comments about air pollution, bad air, and causes and effects of it; specific pollutants in the air.
Air Quality	Comparison of air quality in different places; includes all comments related to air pollution too.
Public Health (or Community Health)	Anything related to public/community health. Or individual health, often as it relates to the environment. Encompasses a lot of the more general statements but also many of the ones in the pollution section above.
Safety	Safety as it relates to health, transportation, and housing; safety of people and goods (cars, houses); accessibility to health facilities.
Crime	General mentions of crime.
Criminal Justice Reform	Mention of criminal justice reform concepts, including reentry programs.
Historical Conditions	Mention of something that happened in the past that affects conditions of the community today.
Cultural Barriers	Barriers to clean energy access and use related to sociocultural norms and traditions.
Public Services	Water, electric, trash services provided by city; commentary on them and supply/ bills.
Infrastructure Phenomena	
Water	
Water Affordability and Burden	Water use, cost, supply; how cost seems inflated.
Water Quality	Drinkability of water, health concerns with water, general water quality.
Public Spaces	
Community Spaces	Schools, churches, places where community members gather or attend gatherings; open to the public; also, community spaces that were lost; general public spaces, or spaces that do not really “belong” to anyone.
Green Space	Lack of green space, or condition of the existing green space; parks.
Cooling Spaces and Heat Island	Places to go when there is a heat wave, effects of heat in city; how you can change (or cannot change) home to have more efficient cooling.
Public Lighting	Street lighting, darkness in public places.

Code Name	Definition to Guide Coding
Maintenance and Upgrades	
Housing Maintenance and Upgrades	Mention of old housing stock, housing conditions related to maintenance and upgrades; energy efficiency of houses (and buildings).
Infrastructure Maintenance and Upgrades	City-wide infrastructure related maintenance and upgrades.
Energy Security	Issues related to infrastructure/LADWP capacity to deliver quality electrical connection to residents.
Mobility and Transportation	
Public Transportation	Anything related to public transportation, its condition and use.
Walking	Mention of walking in relation to mobility impact area.
Biking	Mention of biking in relation to mobility impact area.
E-Scooters	Mention of e-scooters in relation to mobility impact area.
Electric Vehicles (EVs)	Mention of electric vehicle technology in relation to mobility impact area.
Electric Fleets (Heavy Duty)	Mention of Electric Fleets in relation to mobility impact area.
Autonomous Vehicles (AVs)	Mention of autonomous vehicle technology in relation to mobility impact area.
Mobility and Job Access	Driving, public transport and anything that relates to mobility and its relationship to job access.
Mobility and Services	Driving, public transport and anything that relates to mobility and its relationship to services.
Ride-Hailing	Mention of ride-hailing in relation to mobility impact area, such as Uber, Lyft, or some service that you pay for.
Private Vehicle	Mention of using personal vehicles; or lack of one.
Car Share	Mention of car share programs/ and carpooling.
Car Dealer	Mention of car dealer, or dealerships, car salesperson.
Parking	Mention of parking.
Energy Efficient Mobility	Any mention of energy efficiency in transportation, electric, other; also includes some mentions of public transportation.
Housing and Residential Infrastructure	
Appliances	Mention of appliances e.g., outdated, energy inefficient, lack of access to efficient appliances, etc.
Electrical Capacity	Effects of old electrical system in a home, the capacity at a home to charge vehicles, or run appliances; mentions of the failure of electrical capacity in older homes.
Outages	Mentions of utilities turning off, due to electrical capacity within the home, rolling or planned outages, or community wide electrical/water capacity.

Code Name	Definition to Guide Coding
Homeownership	Issues that affect homeowners specifically; barriers to resources because not a homeowner; benefits and burdens of being a homeowner.
Renter Issues	Issues related to renters' experience such as landlord reticence, lack of control over property, cost and safety concerns.
Quality of building (Home)	Issues related to quality of residence's fuse box, rooftops, internal wiring; energy efficiency of a home; not specific to home either, could be community building.
Solar and Storage	Mentions of solar: installation, affordability.
Economic Phenomena	
Affordability and Stability	
Shutoffs (Barriers)	Energy or water (utilities) service shut off due to missed payments.
Economic Stability/Security	Related to broader picture of job stability, or housing stability and housing prices; prioritizing other expenses over energy bills; cost of housing maintenance and how that relates to stability; prioritizing what you choose to pay more for (or what you have to pay more for).
Debt	Mentions of debt or having bills that have stacked up (i.e., ratepayer has not been able to pay off each month).
Energy Affordability and Burden	Passages that relate to people and their communities' ability to pay energy-related costs embedded in their everyday lives—from transportation and housing to work, food, and recreation. Energy burdens are often understood as “the percent of a household's income spent on utilities for heating, cooling, and other energy services.” This code expands that definition to consider the trade-offs people and families must make to pay all their energy bills alongside other monthly financial burdens (e.g., cost of health care, childcare, rent).
Learning and Workforce Development	
Jobs, Training, and Entrepreneurship	Mention of jobs/work in general, businesses that people own; lack of jobs; jobs in energy; also mentions of trainings, workshops, continuing education with career focus; what prevents people from working (i.e., physical constraints).
Local Jobs and Production	Manufacturing locally, local jobs and training to enable local employment.
Education	Mentions of education, how it should be directed/dispersed; education related to electric energy and solar for consumers and careers, as well as other topics.
Youth Career Development	Educating youth to encourage careers in energy or other sectors; teaching skills to further career development for youth; need for training.

Code Name	Definition to Guide Coding
Accessibility Phenomena	
Access and Use	
Access (Actual Use)	Mentions of access to services, resources, and technologies that do not fit within other access categories; this includes how people actually use those services, resources, and technologies and if not, why.
Access to Financial Capital	Access to initial funding for energy-related capital improvements such as rooftop solar, purchase of EV and related EV supply equipment installations; community wide funding and individual funding.
Waiting and Delays	Waiting and delays, specifically with transportation, implementing projects (promises made or hopes for projects).
Monitor Program Application and Reach	Accountability for program implementation and monitoring, generally how was the program implemented, who did it benefit, and who was involved in the implementation; elements to include in order for program to reach the right people and how many people it is reaching.
Eligibility	Specifically, who qualifies for programs, or what causes someone who needs the benefits to not qualify for them.
Predatory Practices	Mentions of contracts not being upheld, paying more than anticipated and not receiving what was promised (from both private and public programs); poor work from contractors.
Electrical Preventive Maintenance	Mentions of unsafe conditions because of overdue electrical preventive maintenance; old electric systems at homes; landlords not doing the work needed.
Technological Barriers	Mentions of barriers to new technology (like EVs, energy efficient appliances, etc.). Mentions of electrical supply (capacity, infrastructure) barriers in the home and community.
Energy efficient technologies	Technology that minimizes energy usage; also mentions of working in energy efficient technology realm; mentions of investment in energy efficient technologies.
Programs and Support	
Urgent Need for Support	Mention of imbalance between need for support now versus plans and policies or programs that have long waiting lists or take years to see change; also mentions of debt and needing to focus on urgent needs versus longer term concepts like the energy transition.
Misunderstanding	Miscommunication, including different interpretations between communities and those implementing policy/government.
Community Study	Recommendations for community wide studies; or comments about previous/current community studies.

Code Name	Definition to Guide Coding
Food Banks	Mention of food banks.
Subsidies and Incentives	Mentions of subsidies (or monetary incentives), how they could help and what they currently do not cover; general incentives geared toward a specific group that encourage and facilitate energy efficiency, workforce development and helping communities reach their energy goals.
Grants/ Scholarships/ Internships	Mention of internships or grants geared toward workforce development or school.
Utility Debt Relief	Mentions of extremely high bills that ratepayers cannot pay off and therefore require relief; many related to the covid moratorium that built up; full relief or payment plans that provide debt relief; also, general mentions for need for debt relief.
Consistent Ratepayer Support	Mentions of support to clients by the utility services (customer service). This includes comments related community members' experiences with utility employees who provide direct support to clients; also, requests for forms of support that recognize people who have been consistent customers for years and now cannot pay bills.
Barriers to Program Participation and Support	Passages that relate to obstacles, barriers, and challenges that community members face that limit their ability to participate in, access, and/or utilize existing energy-related incentives, subsidies, and other aid programs. This includes but is not limited to the barriers embedded in eligibility criteria.
Future Programs/Support/Policies	Mentions of future programs/ policies that communities would like to see; and how community members are involved in them, including in their co-creation.
Successful Past or Existing Programs/Policies	Mentions of programs related to energy efficiency, that are either offered, or people are partaking in that have been successful.
Knowledge/access/use of existing programs/services	Mentions of what happens when communities do not have access to knowledge of programs; knowledge that programs are not working; how to spread awareness/ access to the services, resources, and programs coded in the Programs and Support subcategories above.
Participation, Outreach and Communications	
Building Trust and Confidence	Mentions of commitment, strategies to build trust; lack of trust; not following through on promises.
Continuity	Mentions of that lack of consistency in outreach, communications and therefore participation. This includes outreach that sends different people to have conversations each time communities are engaged. Relates to a lack of accountability due to a lack of continuity.

Code Name	Definition to Guide Coding
Circular Conversations/ Stakeholder Fatigue	Mentions of repetitive conversations with no actual output; mentions of being asked for opinions and then asked again.
Lack of information	Mentions of lacking information about plans from government, about how public money is spent, how programs will operate, and how decisions are being made. Being left behind or out of conversations because of lack of access to information, specifically with an energy focus.
Bilingual Communication and Engagement	Outreach/meetings in both Spanish and English; mentions of presence or lack of this.
Customer Communications and Problem Resolution	Utility companies, communication, and customer service; how they respond when people bring up problems; general availability and responsiveness.
Face-to-Face/Door-to-Door	Mentions of canvassing, going to the people, or having face-to-face interaction.
Social Media and Texting	Mentions of social media and texting as ways to communicate information widely.
Mailer	Using flyers etc. to communicate and conduct outreach.
Community Committee and Mobilization	Mentions of building internal community knowledge (mobilization) or committees/councils to represent and provide continuous local insight; also mentions of community coming together to resist interventions and/or build coalitions.
Promotoras Method	Mentions of the Promotoras de Salud (also known as promotoras) method. The promotoras are community health workers, seen as trusted messengers, who guide local residents in their Latino communities through the complex health care system. They use their knowledge of local sociocultural norms to provide their neighbors access to relevant health and social resources.
Participant Motivation and Means	The burden of participation, and what alleviates that burden or makes it worth it; why people are participating in programs or meetings.
Participant Compensation	Mentions of compensating (or needing to) for participation in engagement, outreach, meetings etc.
Workshops	Commentary on workshops that are offered or desire for workshops or that type of continuing education.
Intergenerational Engagement	Mentions of youth and adults both being engaged, a focus on education, or generally a focus on outreach (or a need for this).
Previous Engagement/Input	Mentions of previous engagement that government or other entities have done, ways they have (or have not) gotten community input.

Code Name	Definition to Guide Coding
Participant Observations and Reflections	
Alternative Energy Technologies	Call-out any mention of any alternative energy technology.
Solar and Storage	Mention of rooftop solar (not community solar).
Green Hydrogen	Mention of green hydrogen.
Electric Vehicles (EVs)	Mention of electric vehicle technology.
Electric Fleets (Heavy Duty)	Mention of heavy duty EVs.
Autonomous Vehicles (AVs)	Mention of autonomous vehicle technology.
Energy efficient cooling technologies	Strategies used or technology used to have more energy efficient households, to keep buildings cool.
Socio-demographics of Participants	
Parent/ Individual with dependents	Self-identifying the people who are talking, if they mention these categories.
Disability	Self-identifying the people who are talking, if they mention these categories.
Age and Longevity	Self-identifying the people who are talking, if they mention these categories.
Location	Self-identifying the people who are talking, if they mention these categories.
Large Household (multifamily, intergenerational)	Self-identifying the people who are talking, if they mention these categories.
Ethical Paradigm	
Ethical Entailments	
Quality of Life	When people define what they think of as a high quality of life or a need for this.
Responsibility, Accountability, Transparency	Participants' mention of their personal value of responsibility, accountability, and transparency across the board (between service providers and ratepayers, elected officials, project team, etc.).
Carbon Emission Reduction/Efficiency/Environmentally Friendly	Participants' mention of their personal value of environmentally friendly policies and actions (related to climate change, drought, etc.).
Reliable Transportation	The importance of reliability in transportation and its personal value.
Self-Determination	Passages that relate to community members' abilities and power to make decisions for themselves in relation to the energy system.

Code Name	Definition to Guide Coding
Dignity	Participants' mention of the right to live with respect and the power to make decisions for themselves.
(In)Equity and Inclusion	
Priority Social Groups	Groups that need special focus/priority in the energy transition.
People with Disabilities	Groups that need special focus/priority in the energy transition: individuals with disabilities.
Gender	Groups that need special focus/priority in the energy transition: mentions of gender inequities.
Race	Groups that need special focus/priority in the energy transition: mentions of racial/ethnic groups.
Youth	Groups that need special focus/priority in the energy transition: mentions of youth/children.
Seniors and Retirees	Groups that need special focus/priority in the energy transition: mentions of elderly, seniors, and retirees.
Moderate and low income	Groups that need special focus/priority in the energy transition: mentions of people with low and moderate incomes.
Sociospatial Difference	Mentions of the physical differences in locations or physical disparities that align with sociodemographic differences.
Undocumented and Limited Immigration Status	Mentions of not having valid immigration documents or limited immigration status and its impact on access to programs.
Power Dynamics	Control, power plays in communities, between various actors including companies, organizations, groups of people.
Racism	Specific mention of race and/or ethnicity as a factor influencing participant's experience with energy inequity and injustice.

Appendix C. Methodological Process

Table C-1. Methodological Process

^a These recognition justice codes were also analyzed as factors and impact areas necessary for procedural justice.

Grounded Theory Subcategories	Grounded Theory Codes	Grounded Theory Concepts	Review of Literature: Energy Justice Theory Concepts
Structural Phenomena			
(Dis)Investment and Development	Economic Development and Land Use	Causal Factors	Recognition Justice
	Economic Development and Energy		
	Neighborhood Disinvestment		
	Gentrification and Displacement		
	Socioeconomic Marginalization		
Resilience	Grid Resilience	Actions/Strategies	Procedural Justice
	Community Resilience		
Public Health and Safety	Emotional Burden	Values	Recognition Justice
	Heat Wave	Causal Factors	Procedural Justice
	Shade		
	Dumping ^a	Impact Area	Recognition Justice
	Mobility and Pollution ^a		
	Pollution (Other) ^a		
	Air Pollution ^a		
	Air Quality ^a		
	Public Health (Community Health) ^a		
	Safety ^a		
Crime ^a			
Historical Conditions	Historical Conditions	Causal Factors	
Cultural Barriers			
Public Services			
			Procedural Justice
Infrastructure Phenomena			
Water	Water Affordability and Burden ^a	Causal Factors	Recognition Justice
	Water Quality ^a		

Grounded Theory Subcategories	Grounded Theory Codes	Grounded Theory Concepts	Review of Literature: Energy Justice Theory Concepts		
Public Spaces	Community Spaces ^a				
	Green Space ^a				
	Cooling Spaces and Heat Island ^a				
	Public Lighting ^a				
Maintenance and Upgrades	Housing Maintenance and Upgrades ^a				
	Infrastructure Maintenance and Upgrades ^a				
	Energy Security ^a				
Mobility and Transportation	Public Transportation ^a			Impact Area	
	Walking ^a				
	Biking ^a				
	E-Scooters ^a				
	Electric Vehicles (EVs) ^a				
	Electric Fleets (Heavy Duty) ^a				
	Autonomous Vehicles (AVs) ^a				
	Mobility and Job Access ^a				
	Mobility and Services ^a				
	Ride-Hailing ^a				
	Private Vehicle ^a				
	Car Share ^a				
	Car Dealer ^a				
	Parking ^a				
Energy Efficient Mobility ^a					
Housing and Residential Infrastructure	Appliances ^a	Causal Factors			
	Electrical Capacity ^a				
	Outages ^a				
	Homeownership ^a				
	Renter Issues ^a				
	Quality of Building (Home) ^a				
	Solar and Storage ^a				

Grounded Theory Subcategories	Grounded Theory Codes	Grounded Theory Concepts	Review of Literature: Energy Justice Theory Concepts
Economic Phenomena			
Affordability and Stability	Shutoffs (Barriers) ^a	Impact Area	Recognition Justice
	Economic Stability/Security ^a		
	Debt ^a		
	Energy Affordability and Burden ^a		
Learning and Workforce Development	Jobs, Training, and Entrepreneurship		Procedural Justice
	Local Jobs and Production		
	Education		
	Youth Career Development		
Accessibility Phenomena			
Access and Use	Access (Actual Use) ^a	Impact Area	Recognition Justice
	Access to Financial Capital ^a		Procedural Justice
	Waiting and Delays		
	Monitor Program Application and Reach		
	Eligibility		
	Predatory Practices	Causal Factors	Recognition Justice
	Electrical Preventive Maintenance ^a		
	Technological Barriers		
	Energy Efficient Technologies ^a		
Programs and Support	Urgent Need for Support	Actions/Strategies	Procedural Justice
	Misunderstanding		
	Community Study		
	Food Banks		
	Subsidies and Incentives		
	Grants/ Scholarships/ Internships		
	Utility Debt Relief		
	Consistent Ratepayer Support		
	Barriers to Program Participation and Support		

Grounded Theory Subcategories	Grounded Theory Codes	Grounded Theory Concepts	Review of Literature: Energy Justice Theory Concepts
	Future Programs/Support/Policies Successful Past or Existing Programs/Policies Knowledge/access/use of existing programs/services		
Participation, Outreach and Communications	Building Trust and Confidence Continuity Circular Conversations/ Stakeholder Fatigue Lack of information Bilingual Communication and Engagement Customer Communications and Problem Resolution Face-to-Face/Door-to-Door Social Media and Texting Mailer Community Committee and Mobilization Promotoras Method Participant Motivation and Means Participant Compensation Workshops Intergenerational Engagement Previous Engagement/Input	Actions/Strategies	Procedural Justice
Participant Observations and Reflections			
Alternative Energy Technologies	Solar and Storage Green Hydrogen Electric Vehicles (EVs) Electric Fleets (Heavy Duty) Autonomous Vehicles (AVs)	Causal Factors	Procedural Justice

Grounded Theory Subcategories	Grounded Theory Codes	Grounded Theory Concepts	Review of Literature: Energy Justice Theory Concepts
	Energy Efficient Cooling Technologies		
Socio-demographics of Participants	Parent/ Individual with dependents		Recognition Justice
	Disability		
	Age and Longevity		
	Location		
	Large Household (multifamily, intergenerational)		
Ethical Paradigm			
Ethical Entailments	Quality of Life	Values	Procedural Justice
	Responsibility, Accountability, Transparency		
	Carbon Emission Reduction/Efficiency/Environmentally Friendly		
	Reliable Transportation		
	Self-Determination		
	Dignity		
(In)Equity and Inclusion	Priority Social Groups ^a		Recognition Justice
	People with Disabilities ^a		
	Gender ^a		
	Race ^a		
	Youth ^a		
	Seniors and Retirees ^a		
	Moderate and Low Income ^a		
	Sociospatial Difference ^a		
	Undocumented and Limited Immigration Status ^a		
	Power Dynamics ^a		
	Racism ^a		

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