



Los Angeles 100% Renewable Energy Equity Strategies

Advisory Committee Meeting #8

April 26, 2023

Summary¹

Schedule and Location

Wednesday, April 26, 2023, 10:00 a.m. to 12:00 p.m.

Conducted virtually

Virtual Meeting #8 Attendees

Advisory Committee Members

Center for Energy Efficiency and Renewable Technologies (CEERT), V. John White
City of Los Angeles, Transit Development, Kari Dederian
Council District 09 – Councilmember Curren Price, Sherilyn Correa
LA Cleantech Incubator, Kylie Teller (alternate)
Los Angeles City Planning Department (LACP), Shana Bonstin (alternate)
Los Angeles Department of Transportation (LADOT), Shirin Sadrpour
Los Angeles World Airport (LAWA), Laura McLennan (alternate)
Neighborhood Council Sustainability Alliance (Advisory Committee), Ernie Hidalgo
Office of Public Accountability (Rate Payer Advocate), Fred Pickel, Camden Collins (alternate)
Office of Los Angeles Mayor Karen Bass, Lizzeth Rosales
Port of Los Angeles (POLA), Carlos C. Baldenegro
Sierra Club, Teresa Cheng

LADWP Staff

Anton Sy
Ashley Negrete
Bernardo Perez
David Rahimian
Dawn Cotterell
Denis Obiang
Iris Castillo
Jay Lim
Mudia Aimiuwu
Pjoy Chua
Steve Baule

¹ This summary is provided as an overview of the meeting and is not meant as an official record or transcript of everything presented or discussed. The summary was prepared to the best of the ability of the notetakers.

LA100 EQUITY STRATEGIES



Project Team

Christina Simeone, National Renewable Energy Laboratory (NREL)

Eda Giray, NREL

Kate Anderson, NREL

Katelyn Stenger, NREL

Megan Day, NREL

Nicole Rosner, NREL

Patricia Romero-Lankao, NREL

Sonja Berdahl, NREL

Cassie Rauser, UCLA

Eric Fournier, UCLA

Greg Pierce, UCLA

Raúl Hinojosa-Ojeda, UCLA

Stephanie Pincetl, UCLA

Yifang Zhu, UCLA

Jack Hughes, Kearns & West

Jasmine King, Kearns & West

Joan Isaacson, Kearns & West

Robin Gilliam, Kearns & West

Joe Koh, LADWP Consultant



Welcome Remarks

Joan Isaacson, facilitator from Kearns & West, welcomed members to the eighth Los Angeles 100% Renewable Energy Equity Strategies (LA100 Equity Strategies) Advisory Committee meeting. She introduced Pjoy Chua, Assistant Director of the Transmission Planning, Regulatory, and Innovation Division at LADWP, to provide opening remarks.

Pjoy Chua welcomed Advisory Committee members to the meeting, noting the eighth Advisory Committee meeting. She stated that LADWP plans to schedule a joint, in-person meeting between the Advisory Committee and Steering Committee members. Pjoy Chua thanked the Advisory Committee members for their participation.

Meeting Purpose and Agenda Overview

Joan Isaacson reviewed the meeting agenda (see slide 3 in Appendix), noting that NREL would provide updates on the preliminary results and equity strategies, and reports from UCLA on affordability, weatherization, solar access, small ethnic business research, air quality, panel upgrades, and jobs and workforce development. LADWP would also share more on the next steps of the LA100 Equity Strategies process. She stated that opportunities for feedback and questions from Advisory Committee members would occur throughout the meeting. Joan Isaacson reviewed the guides for productive meetings and said that members should continue to use the raise hand feature and chat to participate. Lastly, she reminded members of their role to listen to updates, provide feedback, ask questions, and consider partnerships for implementation.

Equity Strategies Process Update

Kate Anderson, LA100 Equity Strategies Project Manager at NREL, provided an update on the LA100 Equity Strategies process (see slide 5 in Appendix). She explained that LA100 Equity Strategies has focused on ensuring all Angelenos can participate in the energy transition equitably. Other challenges, such as legislation constraints on rate affordability, current energy system inequities, and a lack of involvement of communities in decision-making were also noted (see slide 7 in Appendix). Kate Anderson stated that NREL has organized its analysis and findings around the three tenets of energy justice: procedural, recognition, and distributional (see slide 8 in Appendix).

Community Listening Sessions Update

Patricia Romero-Lankao, LA100 Equity Strategies Technical Lead from NREL, began the presentation by thanking all Angelenos for their participation in the community listening sessions. She said the presentation would include NREL's goals and analytical approach, methodology, key takeaways and findings, and an opportunity to ask questions.

Goals and Analytical Approach

Patricia Romero-Lankao stated that the primary goals of the community listening sessions included identifying community-identified priorities and needs, causal factors of energy inequities (i.e., what has



contributed to inequitable outcomes), actions needed to address inequities, and associated equity outcomes. She used a map to show the location of listening sessions and the community-based organizations that partnered with NREL (see slide 11 in Appendix). NREL used a mixed-methods approach to examine communities to identify problems and solutions and then to develop a road map for equity strategy development.

Patricia Romero-Lankao described how the community listening sessions fit into the energy justice tenets through recognition and procedural justice. She explained that the experiences and knowledge shared by participants helps to identify key problems, actions, and desired outcomes of historically excluded communities. This input, Patricia Romero-Lankao noted, is informing the modeling done by NREL technical teams, and NREL developed a just energy transitions analytical approach to guide the process of using community input to inform the modeling.

Patricia Romero-Lankao then described the just energy transitions analytical approach (see slide 12 in Appendix). The analytical approach considers causal factors and impact areas that inform the "problem space," which then determines the actions that inform the "solution space." Each component is influenced by a set of values, or what a person or group considers important in life. She explained that community listening session participants identified equity actions and strategies that resolve potential barriers to achieving just energy outcomes. Actions can involve programs, subsidies, and investments, as well as their design and implementation. She highlighted that these identified actions are the means to achieve more equitable energy outcomes, where energy outcomes are the ultimate changes a policy or program will yield. Essentially, the energy outcomes are foundational to operationalizing energy justice.

Next, Patricia Romero-Lankao overviewed the qualitative data collection methods, which consisted of two rounds of listening sessions across five representative regions in Los Angeles. NREL co-developed the sessions with community-based organization partners, recorded the sessions, and analyzed the data. NREL is currently in the process of sharing preliminary findings with the LA100 Equity Strategies Steering and Advisory Committees. Patricia Romero-Lankao shared key takeaways and findings from the listening sessions where participants cited more social, cultural, and institutional factors as primary barriers and challenges to an equitable energy transition as compared to technological aspects (see slide 14 in Appendix). Suggested solutions from listening session participants are designed to address five priority areas and seven energy equity outcomes. She explained that these findings provide a toolkit and roadmap for LADWP and related government agencies to begin addressing barriers and build on solutions.

Patricia Romero-Lankao previewed the equity strategies, including programs and services co-development, tailored outreach and education, tailored training and high-road jobs, bill management and debt relief, community resilience and citizen science, and improving transparency and continuity, amongst others (see slide 15 in Appendix). She noted that these strategies were derived from the community-identified outcomes shared by participants at the community listening sessions and relate to the tenets of procedural and recognition justice (see slides 16-24 in Appendix).



Key Preliminary Findings

Patricia Romero-Lankao shared several quotes from listening session participants, selected because they represent recurring themes. She noted that one action identified by listening session participants was program and service co-development (see slide 17 in Appendix). The participant shared,

...this is where the technology comes in. For centuries we have been marked by redlining, they know which communities are most in need. And this is where [using] technology to our advantage comes. [To know where] to start, what places [need to] have access, obviously, [to pay for] the cost of a better life. And this [redlining] map was much earlier than technology.

Patricia Romero-Lankao stated that another suggested action was tailored outreach and education (see slide 18 in Appendix). As one participant shared,

One strategy would also be—what we’re doing right now—to provide educational opportunities for more people. To help them reflect on how to avoid destroying our planet. [...] We are part of an environmental health committee, and we are promotoras. So, we go out onto the streets, we hand out flyers. We talk to people, helping them understand. And you know that the promotora model works well because the community knows us. So, they trust us. Here comes the lady who...let's see, tell us. They listen to us. They have the confidence to tell us ‘it’s true, you're right.’

A third action highlighted by Patricia Romero-Lankao included improving city regulations, accountability, and enforcement (see slide 19 in Appendix). A participant stated,

There’s a lot of barriers, especially with old houses, and Boyle Heights has a ton of old houses. Or they have houses that are old that were flipped. Like a friend of mine just bought a house on Lorena, and the flipper just basically hid all the old stuff in there and when he found out that basically it was a fire hazard for him to have these old electrical wires...The regulations just aren’t there and there’s no support for families who can’t afford to fix these things. And it’s not necessarily families’ faults that this is happening, or homeowners’ faults, or renters.

Patricia Romero-Lankao overviewed another proposed equity strategy of affordable and safe upgrades (see slide 22 in Appendix). As one participant put it,

I wonder if there is a plan to remediate some of the infrastructure that currently exists in South LA that is problematic, in terms of known adverse health outcomes...one thing is capacity. Does our infrastructure have the capacity to deal with these things. But...just in terms of—from what I understand from the community—there is a sense of neglect. In terms of the outdated infrastructure that needs remediation...I’m hearing discussions about what are we going to do to fix, improve the infrastructure to make way for new. But how are we going to remediate the old? And I think that's also about building trust in the community...Where is the plan to remediate some of the things that currently are causing damage and have been causing damage for quite some time now?



Patricia Romero-Lankao then reviewed another action listening session participants identified, bill assistance and debt relief (see slide 23 in Appendix). One participant shared,

If the bill was split from...[the] starting of the pandemic, to where you said it's over. If that bill was split between what you owe presently and then you work out a payment plan for people, I think that it would be a win-win, and then these improvements can happen, the bills still get paid, water and power does get their money, the people are satisfied. But I haven't seen it...when the pandemic happened 2.5 years ago, take what that number was to present when you said utility moratorium is over, stop it right there...

Patricia Romero-Lankao summarized the process of community-guided equity strategy development and key findings (see slide 24 in Appendix). She thanked the community-based organizations for partnering with NREL and LADWP and the participants of the listening sessions. A special thanks was given to Dawn Cotterell at LADWP for coordinating the scheduling and participating in all of the sessions.

Major Themes from Advisory Committee Questions and Discussion

- What is the legislation which prevents LADWP from meeting Investor-Owned Utility affordability standards?
 - Stephanie Pincetl [UCLA]: Proposition 26.

Distributional Equity Strategies

Megan Day, Equity Strategies Project Manager and NREL Senior Energy Planner, overviewed the six distributional equity strategy areas. She explained that NREL started with a baseline distributional equity analysis of LADWP residential investments, incentives, and rebates over the past 22 years (between 1999-2021). The NREL analysis found that LADWP solar net energy metering and residential electric vehicle incentive programs disproportionately benefited households in non-disadvantaged, mostly White, non-Hispanic, owner-occupied, affluent neighborhoods, but the Low-Income and Lifeline Programs appropriately provided subsidies to disadvantaged communities (see slide 28 in Appendix).

Affordability Preliminary Results and Draft Strategies

Megan Day presented the affordability preliminary results and draft strategies (see slides 29-31 in Appendix). She explained that NREL modeled rates under different scenarios, including a baseline scenario. The main finding is that continuing the current approach will increase electricity bills and decrease affordability for low-income customers. Ultimately, continuing with a business-as-usual scenario will result in remaining issues of affordability.

Christina Simeone, Affordability Researcher with NREL, stated that the preliminary results don't include residential solar and photovoltaic adoption. Final results that include solar and photovoltaic adoption will likely result in reduced affordability due to additional costs. She noted that income-based fixed charges provide the greatest benefit to low-income customers. NREL has developed several equity strategies, including a California Public Utilities Commission-recommended two-tier rate design with no low-income assistance program that results in no transfer costs. Additional strategies were presented,



such as combining LADWP's existing rate design with low-income assistance approaches modeled after the California Public Utilities Commission California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance (FERA) programs and converting to a two-tier California Public Utilities Commission-recommended rate design with income-based fixed charges (see slide 31 in Appendix).

Housing Weatherization and Resilience to Extreme Events

Katelyn Stenger, Weatherization and Decarbonization Researcher with NREL, presented on housing weatherization during extreme events. She reviewed several key findings, including that more than 30% of extremely low-income households lack access to cooling and about 50% of low-income households do not use cooling (see slide 33 in Appendix). Multi-family renters experience the highest dangerous heat exposure in Los Angeles and while weatherization reduced dangerous heat exposure in single-family homes, it was not as effective in reducing exposure in multi-family homes. Katelyn Stenger also stated that cooling use and access were most effective in eliminating dangerous heat exposure in multi-family homes by enabling residents to experience safe temperatures at the start of a power outage.

In the baseline condition, Katelyn Stenger explained that more than half of low-income households will experience dangerous indoor air temperatures of 95 degrees Fahrenheit at least once a year by 2035 (see slide 34 in Appendix). Adding cooling was found to nearly eliminate dangerous temperature exposure for low-income and all households. Katelyn Stenger shared that households with existing cooling save on utility bills when upgrading to heat pump cooling.

Equity strategies include providing cooling access for households at the greatest risk of dangerous heat exposure (low-income, multi-family renters without cooling), deploying cooling access and building envelope improvements, and shifting to direct installation for low- and moderate-income households (see slide 35 in Appendix). Katelyn Stenger also highlighted prioritizing heat pump installation in low- and moderate-income households with no heating or cooling and prioritizing rent-controlled and affordable housing where upgrades will not increase rents as equity strategies for building weatherization. She noted that electrical panel replacement will be needed to implement these strategies.

Equitable Community Solar Access and Benefits

Megan Day summarized the community solar key findings. She showed a map indicating potential financially viable community solar sites on government-owned land, recreation centers, educational institutions, hospitals, and multi-family parcels with disadvantaged communities shown in grey (see slide 37 in Appendix). In terms of bill savings, establishing a 20% lower shared solar rate and increasing subscription caps to 500 kWh for low-income customers results in average savings of \$480 per year per household. With Inflation Reduction Act credit bonuses, 364 multi-family properties could host economically viable, community solar that supports low-income households.

Equity strategies focused on modifying the LADWP Shared Solar Program to increase access and bill savings for low-income subscribers, providing the opportunity for customers in multi-family buildings to have virtual-net-energy metering from nearby commercial or privately-owned sites, and providing



compensation for community solar with storage (see slide 38 in Appendix). Megan Day explained that the equity strategies included a solar program design that enables low- and moderate-income customers to achieve up to 34% bill savings and noted that offering net-metering to low- and moderate-income customers could result in an average bill savings of \$461 per year (see slide 39 in Appendix).

Equitable Transportation Electrification

Megan Day presented the key findings and strategies for equitable transportation electrification (see slide 42 in Appendix). On key findings, at the baseline, 77% of LADWP residential electric vehicle incentives and rebates went to non-disadvantaged communities. In addition, low-income electric vehicle adoption could be substantially expanded through multi-family and renter access to home and near-home charging. She also noted the finding that for more than 11% of Los Angeles households that do not currently own a vehicle, targeted e-bike, e-scooter, and shared-electric vehicle programs could save costs and time, expanding access to and benefits from transportation electrification. Solutions varied across communities, and NREL produced neighborhood-specific multimodal strategies for affordability, time efficiency, and access to destinations.

She then reviewed the equity strategies, which include establishing a \$25,000 purchase price cap and increasing the low-income used electric vehicle incentive to \$4,000, shifting from delayed rebates to incentives at purchase point, providing at- or near-home charging for renters and multi-family building residents, and exempting low-income residential charging from peak pricing (see slide 43 in Appendix). Additional strategies included adding electric vehicle supply equipment in disadvantaged communities, such as charging deserts and designing community-guided electric vehicle car share, e-bike, and e-scooter programs for transportation disadvantaged communities.

Equitable Distribution Grid Upgrades

Megan Day presented key findings and strategies on distribution grid upgrades (see slides 44-46 in Appendix). Preliminary findings show that the consequences of poor grid reliability do not equally impact all communities and that requirements for customers to pay for service transformer upgrades may limit access to electric vehicles, solar and storage, and home electrification, particularly in disadvantaged communities. Strategies such as undergrounding of electrical equipment, microgrids, and battery storage improve resilience. She reviewed a series of maps (see slide 45 in Appendix) that modeled 2035 grid stress under an equitable electric vehicle and photovoltaic adoption scenario that show areas with low to high stress.

Preliminary equity strategies included incorporating equity while planning for and prioritizing grid infrastructure and investments, proactively upgrading service transformers for larger service when replacing aging equipment, increasing investments in undergrounding lines in disadvantaged communities, supporting energy storage and backup generation assets, and collaborating with community-based organizations on long outage preparedness.



Truck Electrification for Improved Air Quality and Health Outcomes

Megan Day presented key findings and strategies on truck electrification (see slides 47-49 in Appendix). She stated that key findings showed that heavy-duty trucks represent 5% of vehicles yet generate 51% of on-road nitrogen oxides (NOx) emissions and heavy-heavy-duty trucks, such as fire trucks and dump trucks, represent 1% of vehicles and generate 32% of on-road NOx emissions. Additionally, dangerous truck pollution was found to be concentrated along freeways, impacting the health of near-road households. Megan Day noted that the electrification of heavy-heavy-duty trucks provides the most pollution reduction and benefits traffic-impacted disadvantaged communities the most.

Equity strategies for truck electrification focused on prioritization of charging infrastructure and electric vehicle purchasing incentives for heavy-heavy-duty trucks and incentivizing and locating charging infrastructure where heavy-heavy-duty trucks would ideally be charged. Other strategies included revisiting LADWP's Charge Up LA! Program goals (4,000 medium-duty and heavy-duty partial electric vehicles by 2025 and 12,000 by 2030) and collaborating with city agencies to support city-wide heavy-heavy-duty truck fleet electrification and charging infrastructure.

Major Themes from Advisory Committee Questions and Discussion

- Were trains studied?
 - Megan Day: The study was focused on trucks.
- What is the timeline of the study completion?
 - Megan Day: The team is currently looking for feedback from the community and plans to finalize the study by the end of the summer.
- Regarding grid updates and reliability, are there specific neighborhoods or areas that NREL recommends for focusing upgrades, microgrids, etc.?
 - Megan Day: NREL is mapping communities with lower resilience scores. Upcoming mapping will show where grid investments are most needed.
- In terms of transportation, this should be thought of in terms of mobility as opposed to ownership, as emphasizing vehicle ownership misses the point. Biking and transit should be foundational for equity and reducing emissions. There are some mobility models in rural areas (City of Huron) where a community ride-sharing program was developed, and there should be a way to create software for drivers and community members like Uber and Lyft. Mobility is directly tied to commuting to employment and spending time with family.
- How will this equity strategies analysis and map that shows where upgrades are needed feed into the Strategic Long-Term Resource Plan (SLTRP) analysis? The SLTRP says Los Angeles needs to deploy 3000 MW (megawatts). How will these analyses interact with each other?
 - Jay Lim: The SLTRP is mainly a high-level resource-level planning document that identifies the total amount of resources needed, including renewable and distributed energy resources. Currently, there are placeholders for example projects. The SLTRP team will use the outcomes of LA100 Equity Strategies to refine the breakdown of resources needed, which may result in different costs. For example, it may be more expensive to include solar in certain areas, which may impact the distribution of



program types and total programs. LA100 Equity Strategies will be an input to the SLTRP process.

- Does analysis around truck electrification feed into the new LADWP vehicle-to-grid pilot program?
 - Jay Lim: The distributed energy resource program is managing the pilot program, and it has elements of fleet charging.

UCLA Approach and Contributions to the LA100 Equity Strategies

Cassie Rauser, Executive Director of UCLA's Grand Challenge and Project Manager for LA100 Equity Strategies, presented UCLA's approach to LA100 Equity Strategies (see slides 51-53 in Appendix). She noted that UCLA did not contribute to the original framing but partnered with LADWP to offer a unique local experience to groundtruth this work. The UCLA team incorporated its broad range of local expertise and relationships and is engaged in a long-term partnership with LADWP. Cassie Rauser stated that UCLA led the analysis on five main areas, including energy affordability and policy solutions, small ethnic-owned businesses, air quality and public health, jobs and workforce development, and panel upgrade requirements.

Energy Affordability and Policy Solutions Analysis

Greg Pierce, Co-Director of the Luskin Center of Innovation at UCLA, presented findings on the energy affordability and policy solutions analyses (see slides 54-62 in Appendix). He explained that the analysis includes major chapters that cover structural and baseline affordability considerations, energy affordability metrics, and energy affordability policy options. The team synthesized data from a variety of existing sources, literature, and other documents and worked to identify the most impactful rate changes and affordability strategies for implementation. Findings included that most, if not all, of the studied strategies would require a successful city-wide ballot initiative to be implemented. Second, state and federal funding from programs like the Inflation Reduction Act could support affordability programs without being subject to Propositions 26 and 218. Additionally, Greg Pierce noted that expanding enrollment may be the most effective short-term strategy to support low-income residents without constraints.

Actionable metrics and targets for LADWP adoption and accountability moving forward included bill discounts, crisis relief, thermal comfort, and energy insecurity. Greg Pierce shared that UCLA's recommendations included 80% or higher enrollment in existing discount programs, less than 1% of uncovered residential shutoffs, an aggressive numerical target for uncovered small business shutoffs, less than 5% self-reported discomfort, and less than 5% of thermostats over 78 degrees Fahrenheit.

Greg Pierce shared that the UCLA team analyzed policy options focused on debt management and crisis relief, bill discount programs, community solar, and structural energy efficiency (see slides 61-62 in Appendix). For discount programs, UCLA's policy recommendations included enhancing enrollment in two major programs and expanding the benefits and eligibility pool to align more to California Alternate Rates for Energy and Family Electric Rate Assistance. In terms of crisis relief, boosting discount



enrollment and protections for other residential and small business customers were recommended. For structural efficiency, UCLA recommended supporting city-wide efforts to route Inflation Reduction Act and LIHEAP+ (Low Income Home Energy Assistance Program) funds and rapidly scaling and adapting “in-field” impacts of CAMR (Comprehensive Affordable Multifamily Retrofits). Lastly, the community solar recommendation focused on evaluating the “in-field” virtual-net-energy metering pilot for potential expansion.

Ethnic Business Study

Ariana Hernandez, Project Manager with the UCLA Center for Neighborhood Knowledge, presented highlights of the Ethnic Business Study project, including an online survey conducted by UCLA (see slides 63-71 in Appendix). She explained that the survey was done in coordination with community-based organizations, chambers of commerce, and business associations serving minority-business enterprises. Survey respondent characteristics included race and ethnicity, number of employees, industry, and whether the business is a storefront or home-based. She noted that the majority of respondents were in low-wage industries and were largely storefront businesses.

Ariana Hernandez reviewed the major takeaways from the survey. First, nearly three out of four small ethnic-owned businesses experienced negative COVID impacts and faced numerous barriers to accessing government programs and assistance. Almost one-third of small ethnic-owned businesses were found to be energy burdened and struggle to pay their utility bills. Over 50% of ethnic-owned businesses have already been hurt by climate change with nearly 50% expecting negative climate change impacts in the future. Additionally, she noted that only one in 10 ethnic-owned businesses in the City of Los Angeles are aware of and understand the consequences of LADWP’s transition to 100% renewable energy. Key priority needs are payment plans to upgrade equipment, educational materials, and energy-efficient equipment.

In addition to the survey, UCLA conducted two workshops in partnership with LADWP on energy efficiency and the transition to renewable energy. A preliminary finding was that LADWP does not currently have a strategy to analyze business data to better understand its small business customers in terms of energy consumption and program participation. Second, direct outreach to small ethnic-owned businesses, small ethnic business serving organizations, and in-language accessibility are necessary to reach entrepreneurs who are typically excluded from traditional business studies. Lastly, Ariana Hernandez stated that outreach events should include opportunities for two-way interaction where LADWP provides critical information on small-business programs, and ethnic-owned businesses provide recommendations to LADWP on their priorities and needs.

She reviewed several recommendations for LADWP, such as evaluating recent and current small-business energy efficiency programs; developing more targeted policies, programs, and practices to assist small businesses; and partnering with business-serving community-based organizations and other trusted agencies (see slide 71 in Appendix). Other recommendations included examining whether community engagement efforts are equitably reaching disadvantaged communities where small



businesses have high energy burdens and examining legal mechanisms that would enable LADWP to provide monetary assistance to small businesses and ethnic-owned businesses.

Air Quality and Public Health

Yifang Zhu, Professor of Environmental Health Sciences at UCLA, presented the key preliminary results and findings on air quality and public health (see slides 72-78 in Appendix). She explained that the UCLA team investigated the potential environmental and public health benefits of zero-emission vehicles, especially among disadvantaged communities. In addition to the 2017 Base scenario, three scenarios were modeled, including the 2035 Disparity scenario, 2035 Equity scenario, and 2035 Mobile Source Strategy (see slide 73 in Appendix).

She presented two maps that show the disparity in ownership of zero-emission vehicles where non-disadvantaged communities are adopting zero-emission vehicles at a much higher rate than disadvantaged communities (see slide 74 in Appendix), which raises concerns about the equitable benefit of zero-emission vehicle adoption. She emphasized that all communities should benefit from the adoption of zero-emission vehicles because owners of zero-emission vehicles travel across and reduce emissions for all communities.

Yifang Zhu presented several key findings where UCLA researchers found that fine particulate matter (PM2.5) would reduce by 7.4% between 2017 and 2035 (see slide 75 in Appendix). Additionally, nitrogen oxide (NOx) would be reduced, which would cause an increase in ozone by 12%. This temporary increase is due to the non-linear relationship between ozone constituents as Los Angeles transitions to 100% clean energy. Avoided mortality was analyzed by racial and ethnic groups for each of the modeled scenarios (see slide 76 in Appendix). She stated that Hispanic communities saw the greatest reductions in mortality under the 2035 Disparity scenario, followed by White, African American, and “other” groups. Avoided mortalities were fewer under the Mobile Source Strategy scenario. Across each scenario, Yifang Zhu shared the importance of considering ethnicity and race in health assessments.

The UCLA team also analyzed total avoided deaths across the 2035 Disparity scenario and the 2035 Mobile Source Strategy scenario. The results show a total of 330 avoided deaths in both the Disparity and the Mobile Source Strategy scenarios, and that ozone increase is the main driver for areas with negative avoided death values (see slide 77 in Appendix). Yifang Zhu stated that it is necessary to consider both PM2.5 and ozone when assessing the overall impact of zero-emission vehicle adoption strategies on public health.

In summary, Yifang Zhu explained that vehicle electrification reduces PM2.5, which can lead to improved health outcomes for both disadvantaged and non-disadvantaged communities, and that electrifying medium- and heavy-duty trucks will bring more health benefits than electrifying light-duty vehicles. She stated that the use of ethnic and racial-specific exposure-response functions can help reveal greater health benefits, particularly for the Hispanic population, than previously estimated. Lastly, to reduce ozone, it is crucial to further reduce NOx and volatile organic compounds in parallel with PM2.5 and NOx reductions.



Green Jobs and Workforce Development

Raúl Hinojosa-Ojeda, Associate Professor in the UCLA Department of Chicana and Chicano Studies, presented the green jobs and workforce development analysis. He noted that UCLA developed a green jobs calculator to analyze projected green jobs in Los Angeles and look at LADWP jobs and projections. The team also developed an open-source database platform to look for workforce development strategies and pilot strategies throughout the city, as was initially done in the Wilmington Case Study.

The green jobs calculator includes historical trends; direct, indirect, and induced green jobs; regional racial equity interdependence; LA100 scenarios workforce needs; current and future scenarios for equitable employment composition; and required workforce development investments. Raúl Hinojosa-Ojeda noted that the growth of green jobs in the Hispanic community is complementary and beneficial to White and Black workers in both green and non-green jobs. Raúl Hinojosa-Ojeda showed charts indicating where green jobs are present in the City of Los Angeles and who benefits from them (see slide 82 in Appendix).

For LADWP jobs, the analysis looked at the firm level by income, occupation, race, ethnicity, gender, and residency in disadvantaged and non-disadvantaged communities. Raúl Hinojosa-Ojeda reviewed several key findings, including that Hispanic, White, Asian, and Black workers make up the largest shares of employees in the LADWP power sector. Hispanic workers are most represented in construction, followed by White and Black workers. In power generation, White workers are the largest group, followed closely by Hispanic workers, and then Black workers. Most LADWP workers, who are relatively well-paid, do not live in disadvantaged communities. However, Hispanic and Black workers make up the largest share of LADWP employees living in disadvantaged communities and earn the lowest wages of LADWP workers, whether they live in disadvantaged or non-disadvantaged communities. Hispanic and Black workers have more representation in lower-wage occupations and activities yet earn comparable wages in both higher and lower-paid occupations.

Raúl Hinojosa-Ojeda stated that direct green jobs employment effects will concentrate on Hispanics, followed by Asian and Pacific Islander communities, and Whites (see slides 84-85 in Appendix). He then highlighted the Wilmington Case Study, noting that findings have informed a database about the nature of exposure issues, lack of opportunities, and challenges moving forward (see slides 87-89 in Appendix). He shared that community engagement meetings were conducted over six months, beginning in November 2022. Recommendations going forward are to continue to the public access platform, build on the green jobs workforce development pilot for an equitable distribution of labor, and utilize community engagement recommendations (see slide 90 in Appendix).

Panel Upgrades

Eric Fournier, Researcher with the UCLA Center for Sustainable Cities, presented an analysis of panel upgrades. The UCLA team analyzed single-family and multi-family properties to examine how much capacity is needed for the 100% renewable energy transition (see slides 92-93 in Appendix). The need for a panel upgrade to support electrification depends upon the capacity of the existing hardware



relative to the needs of new equipment. For homes with panel capacity rated less than 200 amps, it is unlikely that full electrification can occur without a panel upgrade, Eric Fournier noted. Generally, 200 amps for single-family homes should be sufficient to fully electrify the home, but multi-family homes may require a different level of capacity.

The UCLA team conducted its analysis by examining the as-built service capacity and then identified historically permitted upgrades, inferred antecedent and unpermitted upgrades, and assigned existing service capacity. He reviewed the comparative findings between single-family and multi-family properties (see slide 95 in Appendix). He stated that twice as many single-family properties are electrification-ready in non-disadvantaged communities as compared to disadvantaged communities. For multi-family units, the difference in the number of electrification-ready properties was minimal between non-disadvantaged communities and disadvantaged communities.

Eric Fournier next reviewed the analysis of the number of necessary panel upgrades (see slide 96 in Appendix). For single-family properties, if electrical panel capacity is currently less than 100 amps, an upgrade will likely be needed. Half of single-family properties will likely need an upgrade, he stated. For single-family properties in non-disadvantaged communities, only about one-third of electric panels are estimated to need upgrades. For multi-family properties, the differences between non-disadvantaged communities and disadvantaged communities are minimal, but overall, these properties will need more upgrades than single-family homes (about 67-72%). In general, Eric Fournier stated that few census tracts are considered “electrification-ready.”

Lastly, he overviewed several results, including that load center capacities that can guarantee support of full electrification are greater than or equal to 200 amps for single-family homes and greater than or equal to 150 amps for multi-family units (see slide 97 in Appendix). Additionally, it is possible to partially electrify dwellings with smaller panel sizes, however, this will likely require more intelligent hardware, load splitting, and/or lower voltage appliances. He noted that about 45% of the single-family homes within disadvantaged communities are likely to need panel upgrades to fully electrify. This ratio drops to 25% in non-disadvantaged communities. Upgrading the load centers of these multi-family buildings will be more challenging and expensive than it will be for single-family properties. He concluded by emphasizing that increasing the rate at which these properties are upgraded should be considered an equity strategy priority.

UCLA Next Steps

Greg Pierce noted that the UCLA-NREL-LADWP partnership has established a foundation for future work and an iterative process of co-learning going forward as well as development of strategies for engagement and implementation of LA100 Equity Strategies. The partnership has also established a foundation for translating LA100 Equity Strategies into specific metrics and an accountability framework for LADWP’s equity metrics data initiative, from jobs to energy burden. He also noted continued work on specific topics, such as shut-offs, debt, rates, and leveraging of mapping tools.

Stephanie Pincetl, Executive Director of the Institute of the Environment and Sustainability at UCLA, presented an evidence-based decision-making process for LA100 Equity Strategies implementation (see



slide 101 in Appendix). She noted that it is difficult to achieve equity overnight and this process requires checking and re-checking through agenda setting, analysis and design, strategy development and decision-making, implementation, and evaluation. Stephanie Pincetl highlighted the importance of combining evidence-based decision-making and community engagement in a long-term relationship (see slide 102 in Appendix). She noted that the regulatory infrastructure is changing as well. In summary, she stated that executing commitments to a productive, transparent, and interactive process is necessary for a cleaner, more equitable future.

Next Steps for LADWP

Denis Obiang, Transmission Planning Manager with LADWP, noted that the final briefing for LA100 Equity Strategies will take place around June 2023 with both the Advisory Committee and Steering Committee. He shared that LA100 Equity Strategies is a groundbreaking study that requires a long-term engagement process to ensure the equity strategies are incorporated in the design of City of Los Angeles programs. Additionally, he emphasized the importance of agencies across the City of Los Angeles collaborating to achieve equity in the transition.

Denis Obiang explained first that next steps include operationalizing equity outcomes to develop programs and measure impacts via metrics. Second, the SLTRP will develop a plan for capacity and needs that will include programs for energy efficiency and distributed energy resources and for load management/demand response. The role for LADWP is to see how the equity strategies can be integrated into the next SLTRP. Third, LADWP has designated its Diversity, Equity, and Inclusion office as a lead on the implementation phase, which will include long-lasting and meaningful outreach to discuss results, benefits, how success is measured, and how to adjust programs to achieve equity outcomes. This department will work with all City programs to accomplish this, he stated.

Lastly, Denis Obiang thanked the Advisory Committee members for participating in LA100 Equity Strategies and thanked UCLA and NREL for leading the innovative and scientific approaches. He stated that an equitable transition can be achieved if all entities work together. He concluded by noting that LADWP will present the final results of the study to the LADWP Board of Commissioners in July 2023 and to the city council in Fall 2023.

Major Themes from Advisory Committee Questions and Discussion

- LADWP plans to designate the diversity, equity, and inclusion office to lead the implementation. Are there any other details of how that will look like?
 - Denis Obiang: The office will conduct engagement with the Advisory and Steering Committees and potentially expand community engagement beyond the current membership. After the onboarding of the diversity, equity, and inclusion office management, more details will be shared. Some programs are ready to be rolled out, but LADWP will hold off to ensure programs align with the equity strategies and metrics. The plan is to present proposed programs with the Advisory and Steering Committees to discuss this. In June 2023, LADWP will have a more robust update.



Wrap Up and Next Steps

Joan Isaacson stated that the next Advisory Committee meeting would take place in June 2023 and thanked members for their participation.

LA100 EQUITY STRATEGIES



Appendix

Advisory Committee Meeting #8

April 26, 2023

Presentation Slides