



Los Angeles 100% Renewable Energy Equity Strategies

Steering Committee Meeting #16

March 15, 2023

Summary¹

Schedule and Location

Wednesday, March 15, 2023, 10:00 a.m. to 12:00 p.m.

Conducted virtually.

Virtual Meeting #16 Attendees

Steering Committee Members

Climate Emergency Mobilization Office (CEMO), Marta Segura
Climate Emergency Mobilization Office (CEMO), Rebekah Guerra (alternate)
Climate Resolve, Jonathan Parfrey
Community Build Inc., Robert Sausedo
DWP-NC MOU Oversight Committee, Tony Wilkinson
DWP-NC MOU Oversight Committee, Jack Humphreville (alternate)
Enterprise Community Partners, Michael Claproth (alternate)
Enterprise Community Partners, Mariah Lima-Kuderer (alternate)
Esperanza Community Housing, Nancy Ibrahim
Los Angeles Alliance for a New Economy (LAANE), Angela Bai (alternate)
Los Angeles Alliance for a New Economy (LAANE), Diana Umana (alternate)
Los Angeles Alliance for a New Economy (LAANE), Lauren Ahkiam (alternate)
Pacific Asian Consortium in Employment (PACE), Susan Apeles (alternate)
Pacoima Beautiful, Veronica Padilla
Pacoima Beautiful, Annakaren Ramirez (alternate)
RePower LA, Roselyn Tovar
RePower LA, Olivia Walker (alternate)
South Los Angeles Alliance of Neighborhood Councils, Thryeris Mason
South Los Angeles Transit Empowerment Zone (SLATE-Z), Stephanie Ramirez
South Los Angeles Transit Empowerment Zone (SLATE-Z), Ruth Morales (alternate)
Strategic Concepts in Organizing and Policy Education (SCOPE), Agustín Cabrera
Strategic Concepts in Organizing and Policy Education (SCOPE), Tiffany Wong (alternate)

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



LADWP Staff

Amanda Ly
Andrew Kwok
Ashkan Nassiri
Carol Tucker
Dawn Cotterell
Denis Obiang
Iris Castillo
Jay Lim
Joe Koh
Jorge Centeno
Mukund Nair
Nermina Rucic-O'Neill
Ramon Gamez
Richard Trujeque
Sean Lim
Simon Zewdu
Steve Baule

Project Team

Ashreeta Prasanna, National Renewable Energy Laboratory (NREL)
Danny Zimny-Schmitt, NREL
Eda Giray, NREL
Katelyn Stenger, NREL
Megan Day, NREL
Nicole Rosner, NREL
Patricia Romero-Lankao, NREL
Scott Haase, NREL
Sonja Berdahl, NREL
Daniel Coffee, UCLA
Greg Pierce, UCLA
Rachel Sheinberg, UCLA
Christian Mendez, Kearns & West
Jasmine King, Kearns & West
Joan Isaacson, Kearns & West
Robin Gilliam, Kearns & West



Welcome Remarks

Joan Isaacson, facilitator from Kearns & West, welcomed members to the sixteenth Los Angeles 100% Renewable Energy Equity Strategies (LA100 Equity Strategies) Steering Committee meeting. She introduced Simon Zewdu, Director of the Transmission Planning, Regulatory, and Innovation Division, to provide opening remarks.

Simon Zewdu welcomed Steering Committee members and thanked them for attending, noting the milestone of the sixteenth meeting. He reminded members that two meetings will be held in March to make up for the missed meeting in December 2022, as the project team has important information to share. Simon Zewdu thanked the Steering Committee, UCLA researchers, and NREL for their continued support and work on LA100 Equity Strategies.

Meeting Purpose and Agenda Overview

Joan Isaacson reviewed the meeting agenda (see slide 3 in Appendix). She noted that NREL would give the second report on the community listening sessions, followed by a presentation of preliminary results and equity strategies for housing weatherization and community solar and access. UCLA would also present its affordability analysis. Joan Isaacson explained that the presentation sent before the meeting includes additional slides on the research and methodology that would not be presented during the meeting due to time limitations. Because of the amount of information to be shared, she asked Steering Committee members to pose their questions using the chat during the presentations. She then stated that the project team had developed a post-meeting questionnaire for Steering Committee members to provide additional feedback, and that more information can be requested via email. Joan Isaacson reminded members of the Steering Committee guide for productive meetings.

Community Listening Sessions Update

Patricia Romero-Lankao, LA100 Equity Strategies Technical Lead from NREL, provided the second of two reports on the community listening sessions, noting that today NREL would be sharing the findings on health, safety, and resilience; and jobs and workforce development. She said the presentation would cover the community listening sessions' goals, analytical approach, and key preliminary findings with an opportunity at the end for Steering Committee members to ask questions.

Goals and Analytical Approach

Patricia Romero-Lankao stated that the primary goals of the community listening sessions included examining 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 described where the listening sessions took place and the community-based organizations (CBOs) that partnered with NREL and LADWP (see slide 10 in Appendix).

Next, Patricia Romero-Lankao reviewed the just transitions analytical approach presented at the February meeting. Today, the focus of key preliminary findings would be on health, safety, and resilience; and jobs and workforce development. Additionally, she explained that NREL would briefly touch on the intersection of the thematic areas covered at the February Steering Committee meeting



(affordability and burdens and access/actual use). Two questions were posed to the Steering Committee, one on process and one on recognition (see slide 13 in Appendix):

- How can we operationalize the justice and equity principles laid out by Angelenos in the process?
- Are we forgetting any “causal factors” of current energy inequities?

Key Preliminary Findings - Health, Safety, and Resilience

Patricia Romero-Lankao emphasized the importance of aligning priorities across city agencies. With that in mind, community members identified top-down decision-making and neighborhood disinvestment as key factors of concern (see slide 15 in Appendix). Key impacts on health, safety, and resilience included community health and well-being and a lack of participatory funding. She noted that key actions in the solution space included engaging residents in developing programs and services for community priorities, supporting citizen science that fosters community health and well-being, and investing in programs that build community resilience. Patricia Romero-Lankao shared equity outcomes identified by listening session participants, such as inclusive participatory decision-making and community health, resilience, and well-being.

Nicole Rosner, Community Engagement and Energy Justice Researcher with NREL, stated that engaging residents in developing programs and services targeting community priorities was a key action identified (see slide 16 in Appendix). One participant shared,

Our community has a lot of pollution and a lot of problems, and I know that DWP is making plans to change the energy we receive. Not just solar, not just wind, not just oil, but they're also considering things like green hydrogen and all that.

And I just hope that they are listening very well to what people are telling them: that they are tired of the pollution, they deserve more and want better services [from] DWP.

Another action identified by listening session participants was supporting citizen science that fosters community health and well-being, Nicole Rosner noted (see slide 17 in Appendix). One participant stated,

I run a non-profit in the community and we have a STEM program. We have shared [...] a device that we could teach the kids, called the Air Pie. And it [...] gives us data of what the air quality is. So, we [can have] the kids build it. Get the data to understand what's in the air. Benzene, carbon monoxide, whatever. And we are looking at a pilot program for three years, about maybe 2 million dollars. And [...] put these devices in various locations [...] collect the data. Because of the situation in Wilmington. Since I have been here three generations, half of my family has died from cancer. As young as thirty-four years old. From breast cancer, lung cancer, liver cancer, kidney cancer. With people that don't even drink or smoke. So, I know that the refineries have an issue. The contaminants from the trucks and the containers, from the breaks. They have black soot in our community. ...I would like [to put the device] in the house with a signal [...] saying mild, bad. Where it sets off an alarm and goes into the central air-cooling system that has



filters that go into effect. And those filters will automatically tell you to shut your windows and your doors [...it's] something to help the community members in their homes to at least have some kind of fresh air system.

Nicole Rosner highlighted investments in programs that build community resilience as another key action identified by listening session participants (see slide 18 in Appendix). As one participant noted,

This is one way that DWP can help [...] before [...] there were programs. I was looking at the fire [programs], what to do [in case of a fire]. Before, I remember that they came to high school programs and they would take us to clean the freeways, the streets and things like that. And they gave us an incentive, maybe not a big one. But they would educate us, they gave us an incentive. And we made community. Well, I didn't think it was bad. And I say...one day in the afternoon, a weekend when I'm not doing anything: 'Let me sign up!' In other words, to do something for my community. There are no more of those programs that used to exist.

Jobs and Workforce Development

Patricia Romero-Lankao overviewed key preliminary findings in the area of jobs and workforce development (see slide 19 in Appendix). She stated that in the problem space, listening session participants identified a lack of job opportunities and socioeconomic marginalization as key factors influencing inequity. Participants also identified key impacts such as economic instability and community resilience. In the solution space, listening session participants emphasized expanding programs that provide high-road job opportunities to residents, expanding job programs that provide equitable access to training opportunities, and supporting entrepreneurship programs that foster community resilience and energy efficiency. Lastly, she highlighted several equity outcomes identified by participants, such as self-determination, community resilience, and job training program benefits.

Nicole Rosner highlighted several actions identified by listening session participants. One action included expanding programs that provide high-road job opportunities to residents (see slide 20 in Appendix). As one participant put it,

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].

Another action identified by listening session participants included expanding job programs that provide equitable access to training programs, Nicole Rosner stated (see slide 21 in Appendix). One participant noted,

We human beings have many abilities. And sometimes [...] it [happens] that what perhaps she can do, I cannot do. So, sometimes there are barriers for some people, let's say in technology and all that. And sometimes it is very difficult for them to get a job here in Los Angeles. So, it would be good if there were some [mechanism], I don't know, some organization. That when



these people need help, perhaps for their rent, they can be provided [with support to] find a job. And say, what skills, what can you do. So that [these people] can have a monthly livelihood, to be able to support themselves and their family. And I believe that this way we will be able to get out of the level of poverty in which we find ourselves.

Patricia Romero-Lankao highlighted one identified action, supporting entrepreneurship programs that foster community resilience and energy efficiency (see slide 22 in Appendix). As one participant explained,

I know what I'm doing. I've already started it. Here through this space, because of the actual development with the Resiliency Hub and Climate Resolve and the work I do with ... schools, we started the Mural Workforce Academy. So, we are starting small and building a workforce of young artists, to teach them how to use this [mineral] paint [that keeps building façades cooler]. So, we can ... build it out, get funding maybe [from] LADWP [...] It's to pay artists, ... young folks to learn this technology. Because the technology [has] been there ... for a long time in other countries. Just LA has been behind [...] The idea here is to ditch acrylic paint, ditch this paint that isn't actually addressing the health needs. Because if it decreases ten percent of buildings heat index, from like a hundred to ninety, that means your air conditioning is going to work a lot less. It just means that is going to be saving on energy. We want to be able to do that with the mural workforce, so that's our plan.

Access and Affordability are Paramount

Patricia Romero-Lankao emphasized perspectives from listening session participants that access and affordability are paramount in an equitable transition to 100% clean energy. As she noted, an action listening session participants identified for enhancing access was creating mechanisms for community-guided investments and programs (see slide 23 in Appendix). One participant noted,

The issue around charging stations was already put on the table. They are supposed to be put in neighborhoods that needed them the most. The state went ahead of everyone and offered cars to people without charging stations. So, it's almost as if we are being asked to participate in a circular communication.

But recognizing we have some real issues around what we say we want to do. Electrification, with the governor saying that all vehicles will be electrical, by what, 2030? Can't do that if you don't have the infrastructure. And you can't do that if you don't fix the homes to have the infrastructure.

Patricia Romero-Lankao explained that by ensuring adequate access to electric vehicles, for example, communities must be part of community design to address underlying impacts and causal factors. She concluded by thanking the Steering Committee members and Dawn Cotterell at LADWP for collaborating on this effort.



Major Themes from Steering Committee Member Discussion

- Regarding feedback from listening sessions, it may also be helpful to gather feedback from local organizations engaged in helping communities, especially information they receive on people's understanding of energy equity.
 - Patricia Romero-Lankao: Thanks for your comment. We also included this in our analysis of feedback from CBOs.

Weatherization and Resiliency: Preliminary Results and Strategies

Megan Day, LA100 Equity Strategies Project Manager and NREL Senior Energy Planner, introduced the preliminary results on weatherization and resiliency, noting that community solar access and benefits would be addressed in the next presentation. In terms of current progress, she noted that NREL conducted a statistical analysis of LADWP residential energy efficiency investments. They found that programs representing 97% of the \$360 million investments benefitted non-disadvantaged, mostly White, mostly non-Hispanic, mostly home-owning, and mostly above-median-income communities (see slide 31 in Appendix).

Megan Day presented two maps of census tracts that either receive or don't receive incentives proportional to their population (number of households) and that are dependent on programs that target or don't target low-income households (see slide 32 in Appendix). On the map, the green areas indicate census tracts where the percentage of incentives received was greater than the percentage of households, and the red areas indicate census tracts where the percentage of incentives received was lower than the percentage of households. Programs not targeting low-income households had more incentives received per census tract, while programs targeting low-income households received fewer incentives per census tract.

Access to cooling was also analyzed by households across Los Angeles, Megan Day stated. In NREL's analysis, they found that less than 50% of low-income households use cooling, and more than 30% of extremely low-income households lack access to cooling (see slide 33 in Appendix). For heating, when disaggregated by renter and owner-occupied households, nearly 20% of low- and moderate-income renters lack access to heating or use propane, the highest cost fuel, for heating (see slide 34 in Appendix).

Katelyn Stenger, Weatherization and Decarbonization Researcher at NREL, discussed NREL's analysis of power outages during heat waves in Los Angeles. Using ResStock, a building stock characteristics database, NREL modeled 50,000 dwellings representing the diversity of building types (e.g., single family, multifamily), building technologies, climate zones, incomes, and renter/owner status in Los Angeles. She explained that NREL simulated a power outage during a four-day heat wave with no back-up power (see slide 37 in Appendix). Two key assumptions were that household access to cooling before a heat wave has positive effects on well-being and survival and that insulation of the household or building weatherization can help during a heat wave.

Katelyn Stenger described the seven distinct building weatherization and cooling upgrades that were simulated. NREL measured heat exposure by using a standard effective temperature degree hour with



exposure measured in amount and duration. She noted that 86 degrees is the standard not-to-exceed temperature, as anything above is considered extreme heat, or a dangerous temperature. In terms of housing type and building weatherization, Katelyn Stenger shared two key findings. First, multifamily households are exposed to more dangerous temperatures on average than single-family households in baseline conditions during an outage. Second, pre-cooling before an outage through a heat pump was found to decrease exposure to similar levels in single and multifamily homes (see slide 40 in Appendix).

The weatherization and resiliency research team at NREL also looked at income, tenure (i.e., owner vs. renter), and building weatherization. In the model, 0-80% of area median income is defined as low-income, 80-120% as moderate-income, and over 120% as high-income. NREL's findings showed that low- and moderate-income renters have the highest exposure to dangerous temperatures in an outage and that combining cooling access through a heat pump and robust envelope improvements² decreased exposure to dangerous temperatures (above 86 degrees) to a median of zero across tenure and income levels (see slide 41 in Appendix). Additionally, Katelyn Stenger noted, although multifamily renters started the simulated outage at unsafe temperatures, pre-cooling through a heat pump increased the time until unsafe temperatures to 15 hours.

Weatherization and Resiliency Equity Strategies

Katelyn Stenger overviewed the draft equity strategies for housing weatherization and resilience. Beginning with cooling access, she stated that NREL identified the need to prioritize low- and moderate-income renters with no access to cooling, deploy cooling access and building envelope/insulation improvements for single-family homes without cooling, and modify LADWP's Air Conditioning Optimization Program to include heat pumps. Another strategy is to fund and staff program outreach and technical assistance in partnership with CBOs targeting areas that receive disproportionately fewer incentives, such as South Los Angeles.

Next, Katelyn Stenger highlighted equity strategies related to envelope upgrades, such as prioritizing coordinated deployment of cooling access and envelope upgrades in multifamily, renter-occupied buildings to address those at greatest risk of dangerous heat exposure. This includes funding for renovations and electrical upgrades and prioritizing rent-controlled and affordable housing units where upgrades will not increase rents. Additional strategies include prioritizing heat pump installation in low- and moderate-income households with no cooling or heating, and supporting apprenticeship programs in disadvantaged communities for heating, ventilation, and air conditioning (HVAC) entrepreneurship and educational opportunities.

Major Themes from Steering Committee Member Discussion

- Did the people receiving incentives have to make investments? For example, rooftop solar costs \$25,000-\$30,000. They then benefit from net metering.

² Building envelope improvements include creating an airtight barrier to reduce infiltration through gaps and holes in exterior walls and roofs, upgrading doors and windows to higher performance models, ensuring continuous and sufficient insulation at walls and roofs, and minimizing thermal bridging.



- Thank you for highlighting no rent increases!
- Community solar can be improved to include all of this, including weatherization, heat pumps, and increased compensation to tenants, with a focus on multifamily housing.
- Climate Resolve does a lot of work on resilience in the face of extreme heat. We commend NREL on trying to identify communities most at risk to heat events and finding ways to build resilience in those communities. The low-income and multifamily units as a focus is appreciated. The hope is for this information to get to policymakers to develop incentive programs associated with these results. From experience with apartment owners, a carrot (incentives) is a preferable tool than a stick (penalties).
- The analysis is well done. This is a landmark effort that gets to the core of the problems that low-income communities have, such as the lack of ability to afford what other communities have. These issues are life-threatening for older folks, especially during a power outage in a heat wave.
- Regarding community-guided investments, it is unfair to have subsidies of LADWP going to affluent families. But the cost of power is the ultimate equity metric. Today, if you give someone solar on their roof it could be a benefit, but when everyone has solar, it may not benefit them. It may not be a bad thing for benefits to go to richer communities if it reduces the load on the power system and enables the cost of subsidies to stay low. Consider giving people the choice of these benefits long term.
- Thank you for the presentation. These are great recommendations. It's also important to consider direct install programs vs. rebates. Most low-income people don't have the upfront capital to install upgrades.
 - Nicole Rosner: Thank you for that reminder. Yes, we have included that recommendation from Steering Committee members into our analysis and it will be incorporated into the final report.
 - Megan Day: NREL teams are working interdisciplinarily to identify programs and policies to overcome financial barriers for low-income communities.
- Appreciate and second the comments on direct install programs (re: two comments made in the chat)
- For the community-based housing organizations, who are mission-based and not market-oriented, stable quality housing with tenant protections and reduction of the burden on very low-income tenants is the incentive.
- The focus on multiunit housing and benefits is worth applauding. A question for LADWP, how does this get integrated into programs such as community solar? Have we heard an update on future community solar programs and feedback on lessons learned in the last implementation of community solar? It is important to ensure these analyses are integrated in efforts to use federal funding.
 - Simon Zewdu: Yes, strategies are being considered in LADWP's programs and projects. LADWP is hearing the findings and the goal is to operationalize the findings and improve the footprint regarding housing weatherization to improve Angeleno's lives.
- The cost of gas in the green transition was not supposed to go up for some time, but many have experienced higher gas prices. Consider this phenomenon while measuring metrics and include transitional costs in the models.



- Katelyn Stenger: NREL has forecasted prices into 2035. There are two considerations, fixed cost and cost of consumption. When thinking about feasibility studies, the buildings team is partnering with the utility rates team to determine the feasibility of those with natural gas now transitioning to electricity. This is to ensure they are not stuck with these fixed costs.
- Community solar lowers power costs today, but in the future there is no benefit unless the community solar includes storage in a micro-grid (which improves low-income resilience in an outage).
- Excellent work. This is the culmination of a lot of hard work. When talking about funding, one thing to look at is the Inflation Reduction Act (IRA). There is an opportunity for supporting multifamily renters through this program, as well as programs for disadvantaged communities. It is also necessary to have conversations with industry (heating, ventilation, and air conditioning [HVACs], and energy service companies [ESCOs]) to discuss funding and apprenticeship programs.
 - Simon Zewdu: LADWP is looking at all funding opportunities for both bills signed by the president. LADWP has applied for opportunities and is waiting for results from the Department of Energy. There are also opportunities to apply through open enrollment every year. LADWP will continue to submit applications and papers to secure federal funding.
- Industry (with an installation focus) is a missing stakeholder in all of the LA100 advisory input and research. Their perspective would help to judge if funding options are practical.

Community Solar Access & Benefits: Preliminary Results and Strategies

Megan Day overviewed the analyses on solar and storage, noting the focus on community solar. She stated that NREL did an analysis of subscribers to the LADWP shared solar program, which indicates a higher participation and subscribed capacity among non-disadvantaged, non-Hispanic, and above median income communities (see slide 51 in Appendix).

Ashreeta Prasanna, Distributed Energy and Storage Analysis Researcher with NREL, presented the results of the community solar analysis. She stated that the methodology is included in the presentation slides that were shared before the meeting, and to reach out to Dawn Cotterell at LADWP with additional questions. Ashreeta Prasanna reviewed several modeling scenarios across potential community solar sites, explaining that NREL considered two scenarios in addition to the financial models. First, a baseline scenario is financed by subscriptions. Alternatively, the individuals that own solar sites sell through the Feed-in-Tariff program where benefits are passed onto subscribers of the program and LADWP. Under Feed-in-Tariff, benefits primarily go to the project developer or owner of the site.

Second, in the equity scenario, Ashreeta Prasanna described how NREL increased the current maximum community solar subscription of 100 kilowatt-hours (kWh)/month per customer to 500 kWh/month and reduced the cost of the subscription by \$0.03 per kWh for low-income customers. Under the power



purchase agreement financial model, LADWP's power purchase agreement payments for parking canopy sites in disadvantaged community tracts increase from \$0.14 per kWh to \$0.16 per kWh.

Ashreeta Prasanna noted that another consideration for both scenarios and financial models are the Inflation Reduction Act solar investment tax credits. The 20% Investment Tax Credit bonus and 10% bonus credit are both available as part of the Inflation Reduction Act, and these incentives are considered in the financial modeling.

Community Solar Modeling Results

Ashreeta Prasanna stated that NREL identified 1031 megawatts (MW) of economically viable potential on 2,369 government-owned parcels, recreation centers, educational institutions, hospitals, and multifamily parcels. She shared that economically viable sites are those analyzed for economic net worth and that have a positive net present value. Ashreeta Prasanna emphasized the difference between technical potential and the equity scenario as shown on the map (see slide 55 in Appendix). She explained that not all potential sites, shown in red on the map, are economically viable.

Ashreeta Prasanna shared three key findings from the community solar results, beginning with enhancements to LADWP's Shared Solar Program. Allowing low-income customers to subscribe at a lower rate while increasing the maximum subscription allowed from 100 kWh to 500 kWh would increase average savings. These modifications would decrease the net present value by 9% and result in 277 fewer sites with a positive net present value.

Impacts on benefits to community solar subscribers and project developers (e.g., LADWP) in the equity scenario were then described by Ashreeta Prasanna (see slide 56 in Appendix). Under the equity scenario, the community solar developer experienced an average decrease in the net present value by 9% and reductions in profitable project sites by 1%, while low-income community solar subscribers benefitted from a savings of \$440 per year, and community solar subscribers maintained a benefit of \$60 per year.

In terms of potential multifamily community solar, Ashreeta Prasanna highlighted that NREL identified 364 sites with 30 kW or greater capacity in low-income tracts that would be considered economically viable under the equity scenario (see slide 57 in Appendix). Additionally, a large percentage of sites would be profitable to develop because they would qualify for an additional 20% Investment Tax Credit through the Inflation Reduction Act. Findings on community solar and battery storage suggest that community solar-plus-storage projects are not economically attractive compared to standalone solar projects. Ashreeta Prasanna explained this is due to the lack of time-varying compensation value for electricity under the Feed-in-Tariff Program and that there are no additional value streams for resiliency under the Shared Solar Program (see slide 58 in Appendix). She noted that storage could be installed based on land area requirements and size, and there are 645 sites that are considered net present value-positive, but programs don't explicitly provide value for these services.

Lastly, Ashreeta Prasanna presented draft equity strategies on community solar access and benefits (see slides 59-62 in Appendix). First, NREL recommends modifying the Shared Solar Program to increase



access and bill savings for low-income subscribers. Other strategies include providing customers in multifamily buildings the opportunity to have virtual net energy metering from nearby commercial or other privately owned sites through an anchor tenant model and seeking technical and legal assistance to ensure developed community solar projects receive the available Inflation Reduction Act incentives. A further recommendation is to subcontract project development, construction, and work with other city organizations to jointly develop community solar with LADWP ownership. Additionally, NREL suggests providing compensation for community solar-plus-storage that sets credits at the actual value of electricity at the time it is delivered to the grid. Steering Committee members were invited to participate in the post-meeting questionnaire to provide additional input on this topic.

Major Themes from Steering Committee Member Discussion

- What are the original participation goals for the Shared Solar Program and the communities LADWP was targeting?
 - Simon Zewdu: LADWP can provide that information at a later time.
- Here is a helpful video from Deutsche Welle on “How solar energy got so cheap”:
<https://www.youtube.com/watch?v=sUvaYycoWql&t=27s>
- The benefit under option #1 (community solar) goes to the consumer, which is good. However, the benefit is present-day thinking. It depends on an artificial difference of community solar vs. power system rates because under current rates, community solar does not pay its fair share of infrastructure costs.
- What is the discount rate used to determine the net present value?
- Will the previous map be sent out separately? It is hard to zoom into the PDF file.
 - Ashreeta Prasanna: Yes, NREL will include an interactive map As part of final reporting.
- Since Los Angeles is moving into a decade of high inflation, a high discount rate of 6% would be very reasonable, but it could be higher.
- Would these potential multifamily community solar sites have to individually apply for federal incentives?
 - Ashreeta Prasanna: Yes, some credits would be provided by default, but for an additional 20% bonus, the developer would have to show at least 50% of benefits are going to low-income customers, and yes, they would have to apply individually.
 - Megan Day: The developer would apply, and this would likely be LADWP.
 - Do you mean that the owners of the multifamily buildings are part of shared solar?
 - Megan Day: LADWP will not allow for a third party to develop community solar installation. LADWP would develop and apply for the bonus incentive. The Inflation Reduction Act also includes a provision for non-tax paying entities such as a municipal utility or a city to claim that credit as a direct pay. This enables benefits for non-profit agencies.
 - Simon Zewdu: Yes, LADWP will share more clarity on the policy and how the Inflation Reduction Act will determine the impact of the credit.
- California’s extreme heat programs and proposed cuts per Governor’s budget:
<https://sbud.senate.ca.gov/sites/sbud.senate.ca.gov/files/Extreme%20Heat.pdf>



- Could it be made certain that the multifamily buildings already have high-albedo roofs? The bifacial photovoltaics could yield more energy and further protect residents during heat waves.
- There is no net benefit from community solar versus micro-grids, which provide storage and local area resilience during outages.
- Is the definition of low-income 200% of Federal Poverty Level or 80% of area median income?
- The current Shared Solar Program is available to multifamily residential customers.
- The original participation goals for community solar did include low-income ratepayers, in recollection.
 - Simon Zewdu: LADWP will share information at a later time.
- It is a surprise that there are recommendations that Los Angeles Unified School District sites be used. What work is being done to incorporate Los Angeles Unified School District under strategies in the discussion?
- If the community solar was developed by local property owners (financing option #2), the benefits would go to the apartment owners. That would be no benefit to low-income tenants.
- Can you share more about how the current shared solar offer rate is calculated?
 - Megan Day: NREL will share more information at a later time.

Affordability

Greg Pierce, Co-Director of the Luskin Center for Innovation introduced the affordability analysis done by the UCLA Luskin Center with a focus on energy affordability metrics and policy options. Greg Pierce noted that UCLA has more information and context on draft findings and metrics and that each metric has a 10–15-page analysis that will be shared at a later time. The research process relied on a combination of LADWP administrative staff interviews, LADWP data shared through the Energy Atlas, publicly available information and secondary documents, and an analysis of metric adoption and policy performance in other service areas (see slide 68 in Appendix).

Rachel Sheinberg, UCLA School of Law, presented quantitative results of the affordability research. First, she recapped the regulatory environment and reiterated that LADWP must consider a variety of laws and regulations when setting electricity rates (see slides 69-70 in Appendix). Rachel Sheinberg emphasized that most rate changes would require a successful citywide ballot initiative to be implemented.

In quantifying current discount programs, Rachel Sheinberg introduced overarching research questions on revenue, discount percentage, and alternatives (see slide 72 in Appendix). She noted that the data used in the analysis came from LADWP customer energy use data from 2018-2021, energy rates from 2018-2021, the 5-year American Community Survey on housing and income, and LADWP power system financial statements.

In terms of revenue, Rachel Sheinberg explained that the bills from customers on discounted rates represent a small portion of residential and total power system revenue (see slide 74 in Appendix). She then reviewed findings on how programs are subsidized. Both commercial and residential customers finance the discount programs through a small adder called the electric subsidy adjustment, one of



several adjustment billing factors. Increasing or changing this adder would likely require a ballot initiative due to Proposition 26.

Discount Programs

Rachel Sheinberg next reviewed a table of discount programs' aggregate costs (see slide 76 in Appendix). She highlighted the analysis of customer savings where the Lifeline discount showed an overall discount rate of 42% while EZ-Save showed an overall discount rate of 16.9% (see slide 77 in Appendix). UCLA analyzed how LADWP's EZ-Save program compared to other utilities' discounts (see slide 78 in Appendix), noting that the table shows a percentage, so the actual amount depends on electricity costs in that area. Rachel Sheinberg stated that the EZ-Save program provided an average monthly bill discount of 17-18%.

Next, Rachel Sheinberg reviewed a baseline revenue impact example to highlight percentage bill discounts for EZ-Save. Based on historical usage, UCLA estimated the additional subsidy for providing discounts of 30, 40, and 50% (see slide 79 in Appendix). She noted that these are estimates and that the average additional costs for other residents would be around \$0.30 per month.

Rachel Sheinberg presented a discount structure alternative example, such as a Percentage of Income Payment Plan where customers pay up to a certain percentage of their income towards their electricity bill. She stated that for most programs, energy bills are capped at between 3% and 10% of income. Next steps for the study include summarizing precedents from other state programs in a final report (e.g., percentage discounts, percentage of income payment plan), mapping average energy burden by census tract, and identifying specific advantages and disadvantages of program and rate structures for LADWP's implementation context (e.g., regulatory hurdles, revenue, and subsidy impacts).

Metrics

Greg Pierce reviewed energy affordability metrics. He noted that UCLA focused on four metrics based on Steering Committee recommendations: bill discount, crisis relief, thermal comfort, and energy insecurity (see slide 82 in Appendix). First, he reviewed bill discount metrics, noting that UCLA is recommending enrollment as the primary metric with a target of 80% (see slide 83 in Appendix). The secondary recommendation is an adjustment on eligibility to be broadened outside of the federal poverty level.

Greg Pierce then reviewed the crisis relief metric, stating that metrics are tied to policies, and pivot around a moratorium on shutoffs for enrolled discount customers (see slides 84-85 in Appendix). He shared that UCLA is focusing on recommendations around shutoff limitations for those not covered under the moratorium. These recommendations include a target annual disconnection rate of <1% of uncovered residential customers. He then stated that UCLA doesn't recommend specific metrics around bill debt levels.

Thermal comfort metrics were reviewed next, with Greg Pierce focusing on indoor temperature standards (see slide 86 in Appendix). He shared that the target outcomes are tied to the affordability of power supply. Greg Pierce stated that UCLA recommends the adoption of two metrics: self-reported comfort and self-reported thermostat temperature. He recommended against metrics around externally



measured indoor temperature and the energy equity gap. A discussion on indoor temperature metrics needs to be a City of Los Angeles and statewide discussion, Greg Pierce emphasized.

Lastly, Greg Pierce reviewed the energy insecurity metrics (see slide 87 in Appendix). He noted that these are important and adoptable in the future, but existing measurement methods are not feasible. Adoption of these metrics is less important than other recommendations, but energy insecurity metrics should be on the agenda at a later time.

Policy Options

Greg Pierce next overviewed the policy options that UCLA analyzed (see slide 88 in Appendix). He noted the challenges of analysis given LADWP's recent policy changes, such as streamlining enrollment in discount programs, introducing Comprehensive Affordable Multifamily Retrofits, and making other changes to low-income, multifamily housing, and shutoff programs.

Greg Pierce first reviewed findings on the discount programs (see slides 90-91 in Appendix). He stated that current discount program enrollment is low but improving and that benefits and eligibility are lower than neighboring investment-owned utilities. Although LADWP has two big programs, he explained that UCLA's recommendations focus on EZ-Save with priorities for maximizing enrollment and penetration to at least 80%. Near-term priorities include evaluating enrollment, adjusting benefit magnitude, and tailoring eligibility to local conditions. Greg Pierce then noted the long-term priorities of exploring augmentations to EZ-Save and potentially streamlining the program with Lifeline.

Next, Greg Pierce shared findings on debt management and crisis relief, stating that the pre-COVID-19 shutoff and debt situation are instructive but not guiding in nature (see slides 92-93 in Appendix). He noted two other findings, that limitations on shutoff protections are not plausibly justified by revenue recovery and that LADWP has recently instituted one of the more progressive permanent, although still partial, shutoff moratoria in the country. He then reviewed several priorities for crisis relief, including boosting discount program enrollment, evaluating the fiscal impact of the permanent moratoria, and developing customer behavioral guardrails. Greg Pierce also noted that near-term priorities focus on ensuring protection via program enrollment and setting strict metrics for uncovered residential and small business customers. Medium-term priorities include determining the feasibility of a dedicated debt relief program within legal parameters.

Structural energy efficiency findings were then reviewed (see slides 94-95 in Appendix). Greg Pierce explained that because efforts through the IRA and the Low Income Home Energy Assistance Program may be limited under LADWP's purview, LADWP should focus on building up the CAMR program. The Comprehensive Affordable Multifamily Retrofits program needs to be scaled up, but it is new with only three projects under development. Greg Pierce shared recommended goals for the Comprehensive Affordable Multifamily Retrofits program to be expanded to 3,000 units in 5 years. Lastly, he noted several near-term and long-term priorities for structural efficiency. Recommendations for near-term priorities focus on monitoring and evaluation and ensuring a healthy project pipeline for applications and enrollment as well as gathering post-project data. Longer-term priorities focus on addressing performance gaps and scaling up. This includes measuring success in real-world affordability terms,



boosting program performance through administrative tweaks, and harnessing outside funds to support significant program expansion.

Greg Pierce then reviewed community solar findings (see slides 96-98 in Appendix), indicating UCLA's focus on the Shared Solar Program and virtual net energy metering. The findings suggest that multifamily residential community solar is the area of greatest potential and that existing offerings are currently limited in broader impact on affordability due to scale or design. Greg Pierce highlighted community solar priorities, including scaling up the virtual net energy metering pilot and evaluation of Comprehensive Affordable Multifamily Retrofits, implementing administrative revisions to promote wider access, and evaluating pre-post-project affordability benefits for low-income tenants. Greg Pierce then shared a summary of key draft recommendations by metrics and policies (see slide 99 in Appendix).

In terms of next steps, Greg Pierce stated that NREL will present next month on longer-term rate and on-bill strategies and share a final draft report with LADWP in early April. Ongoing strategy implementation and evaluation will extend beyond May 2023. He then invited members to provide input on three discussion questions:

- Do you agree with the combination of metrics proposed?
- Do you agree with the specific policies emphasized for development and further enhancement?
- What commitments and accountability mechanisms do you want to see from LADWP to ensure implementation?

Major Themes from Steering Committee Member Discussion

- Can the slide decks and the full studies from Luskin Center be shared with the Steering Committee members?
 - Joan Isaacson: Yes, the UCLA slides are included in the slides sent yesterday. The NREL and UCLA teams worked hard to complete the slides so that they could be sent early.
- Would the ballot initiative be local or statewide?
 - Rachel Sheinberg: The ballot initiative would be citywide. The ballot initiative would have to be put out to change how the electric subsidy adjustment is calculated. Under Proposition 26, this is considered a tax. City residents must provide approvals for these changes.
 - Greg Pierce: Proposition 26 or 218 reform itself is also possible through a statewide referendum.
- The State of California needs its own equivalent because state legislators have focused only on mandating green energy, ignoring the impact of its costs on consumers. It is presumed that, as leaders, LADWP and the City of Los Angeles would be doing their own Proposition 26/218 ballot measure. They will either do that or wait for the state to act, which would result in a longer delivery date for LA100.
- It is understood that other adjustment factors have previously been capped/uncapped without a ballot initiative. Would that be an option for the electric subsidy adjustment?
- This is amazing and compelling, Rachel Sheinberg and Professor Greg Pierce!



- That is good news. The \$0.30 to \$2.00 per kWh add-on for low-income subsidy is a reasonable amount. The concern is that the real costs of doing LA100 plus the distribution system upgrades will be much more than what UCLA is using to estimate subsidy needs.
 - Rachel Sheinberg: Yes, absolutely. These are baseline estimates, depending on rate changes in the future. Next month, Thomas Bowen is going to be presenting on rates and rate impacts long term. That being said, the goal of presenting these numbers is just to set the context for rates right now.
 - Greg Piece: Yes, this speaks to the need for iterative adjustments due to uncertainty around rates in the future.
- Would percentage of income payment plans require Proposition 26/218 ballot initiatives as well?
 - Rachel Sheinberg: Yes, most likely, they would require a ballot initiative. UCLA is looking at states that use federal LIHEAP funds to subsidize PIPP programs (e.g., Illinois), but something like this would require some statutory and policy changes as well, likely at the state level.
 - Any change in how costs are spread over classes of customers would be considered a "tax" under Proposition 26/218. That would include either (a) increasing the low-income subsidy amount, or (b) changing how the subsidy costs are covered by other ratepayers.
 - In those cases, is the utility the applicant to Low Income Home Energy Assistance Program on behalf of customers?
 - Rachel Sheinberg: The way that it works in most Illinois utilities is that the customer applies to Low Income Home Energy Assistance Program for the percentage of income payment plan program, but then Low Income Home Energy Assistance Program funds go directly to the utility to cover the difference between the full bill and what the customer pays (up to a certain cap).
 - Would it be helpful to have the initiative sponsored and organized by non-governmental (citizen) entities? Thereby lowering the threshold of voters approving the new policy to 50% +1 vs. 66.3%? Has the team evaluated this reality?
 - Rachel Sheinberg: This is a good point. This is absolutely something that UCLA will discuss in the next steps.
 - Just having non-governmental organization supporters would help. The "LADWP Reform" was a lost ballot measure, which included labor flexibilities that would have helped the LA100 rollout, because of opposition by the Coalition of City Unions.
- Regarding affordability options, how much will they cost and what is the impact on rates?
- When was the LADWP reform ballot measure?
 - It was under LADWP General Manager Marcie Edwards. Mayor Garcetti supported it but would not speak in favor in public after the Coalition of City Unions opposed it. It did have the support of LADWP labor partners. The Los Angeles County Federation of Labor voted to stay neutral on the measure.
 - Measure RRR in November 2016 was rejected by 51% of the voters.
- It would be good to see automatic cross-enrollment into EZ-Save/Lifeline and other LADWP programs with SoCalGas and other public assistance programs. Will that be included in this analysis?



- Greg Pierce: UCLA can include it, but we consider this a second-best approach to enhanced enrollment in LADWP discount programs itself. A lot of the time, cross-enrollment across agencies don't work well based on observations.
- Has the team explored infrastructure finance districts (ask Larry Kosmont)?
 - Rachel Sheinberg: Not currently. The UCLA team is interested in more information on this. This hasn't come up in any conversations amongst the Steering Committee yet.
 - Simon Zewdu: LADWP will look into this and get back to the Steering Committee.
- This would be to support enrollment into Lifeline and EZ-Save. Does the "enhanced energy savings assistance program" between SoCalGas and LADWP offer any positive findings?
- An infrastructure finance district would also come in handy for the capital costs of the project. There has been no effort to recycle all of Hyperion wastewater and pump it uphill to the San Fernando Valley aquifer for storage.
- Can follow-up responses be shared with the whole committee?
 - Simon Zewdu: Yes, these responses will be shared with all Steering Committee members.
- A local ground-up initiative could be more persuasive to voters than top-down.

Wrap Up and Next Steps

Joan Isaacson wrapped up by reminding members that the next Steering Committee meetings will take place on March 29, 2023, and April 19, 2023, and will focus on the Energy Atlas, preliminary results and strategies on grid reliability and resilience, and air quality and health. She invited Steering Committee members to provide additional feedback in the post-meeting questionnaire to be sent out after the meeting.

Simon Zewdu concluded the meeting by thanking Steering Committee members for their participation and shared expertise. He thanked the NREL and UCLA researchers for their work on LA100 Equity Strategies, and noted that this study is producing high-level strategies. Simon Zewdu extended gratitude to the CBOs that partnered with LADWP and NREL for the community listening sessions. He then stated that input and perspectives are being captured in the study and findings and underscored the call for long-lasting CBO engagement, noting this will be important in the co-development of strategies. Simon Zewdu concluded by saying that implementation will occur through long-term engagement with CBOs and community members.

LA100 EQUITY STRATEGIES



Appendix

Steering Committee Meeting #16

March 15, 2023

Presentation Slides