



LA100 Equity Strategies
Steering Committee Meeting #8
June 15, 2022



Los Angeles Department of Water & Power (LADWP)

Project Leads



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Agenda

Start Time	Item
10:00 a.m.	Welcome
10:05 a.m.	Meeting Purpose and Agenda Overview
10:10 a.m.	LADWP Strategic Long-Term Resource Plan
10:40 a.m.	Q&A
11:00 a.m.	Equity Outcomes and Metrics Breakout Group Discussions <ul style="list-style-type: none">• Truck Electrification Air Quality and Health Impacts• Solar and Storage• Grid Resiliency and Distribution Grid Upgrades
11:55 a.m.	Wrap Up and Next Steps



Our Guide for Productive Meetings



Raise your hand
to join the
conversation
(less chat
entries, more
talking)



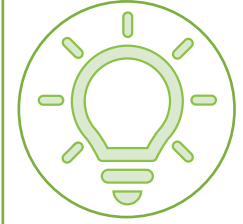
Help to make
sure that
everyone has
equal time to
contribute



Keep input
concise and
focused so that
others have
time to
participate



Actively listen to
others to
understand their
perspectives



Offer ideas to
address others'
questions and
concerns



Steering Committee Roster

Organization	Representative
Alliance of River Communities (ARC)	Vincent Montalvo
City of LA Climate Emergency Mobilization Office (CEMO)	Marta Segura, Rebecca Guerra
Climate Resolve	Jonathan Parfrey, Bryn Lindblad
Community Build, Inc.	Robert Sausedo
DWP-NC MOU Oversight Committee	Tony Wilkinson, Jack Humphreville
Enterprise Community Partners	Jimar Wilson, Michael Claproth
Esperanza Community Housing Corporation	Nancy Halpern Ibrahim
Los Angeles Alliance for a New Economy (LAANE)	Kameron Hurt, Estuardo Mazariegos
Move LA	Denny Zane, Eli Lipmen
Pacific Asian Consortium in Employment (PACE)	Celia Andrade, Susan Apeles
Pacoima Beautiful	Veronica Padilla Campos, Melisa Walk
RePower LA	Michele Hasson, Roselyn Tovar
The South Los Angeles Transit Empowerment Zone (SLATE-Z)	Zahirah Mann, April Sandifer
South LA Alliance of Neighborhood Councils	Thryeris Mason
Strategic Concepts in Organizing and Policy Education (SCOPE)	Agustín Cabrera, Tiffany Wong



Including Future Agenda Items

Tentative Schedule

This Meeting

- Strategic Long-Term Resource Plan
- Guidance on equity outcomes/metrics
 - Truck electrification air quality and health impacts
 - Local solar and storage for resilience
 - Grid resiliency and distribution upgrades

July 20, 2022

- Feedback on strategies/metrics for:
 - Buildings
 - Electric vehicle (light duty) electrification and charging
 - Rates and affordability
- Affordability Analysis

Future Meetings

- Equity metrics
 - How are we measuring success?
 - Energy justice metrics and guardrails.
 - How are we using equity metrics?
- Future Technical Topics
 - Where is offshore wind power? Why isn't it part of the future mix?
 - Better real-time information about peak energy use rates to nudge behavior / save money on energy bills.
 - Hydrogen.
- Co-Develop Equity Strategies.

LADWP's Strategic Long-Term Resource Plan

Roadmap to an Equitable Carbon-Free Future



LA100

ACHIEVING 100% RENEWABLE ENERGY IN LOS ANGELES



LA100 Study

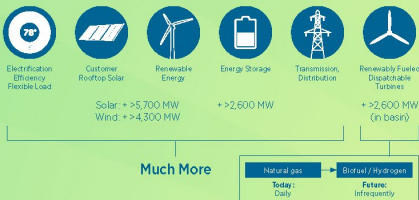
Completed

Unprecedented analysis ID'd multiple paths to achieve 100% target

Considers reliability, equity, sustainability and affordability

- Confirmed 100% by 2035 achievable
- Community & stakeholder input

Common Investments Across All Scenarios



LA100 Equity Strategies

Fall 2021-23

Community-driven, objective to achieve equity

Robust community engagement

Areas of Focus

- Improve air quality
- Solar access
- Energy Efficiency
- Affordable rates
- Demand management
- Debt relief
- EV charging access



2022 SLTRP

Fall 2021-2022 | 2035 & 2045 Targets

Our comprehensive integrated power plan

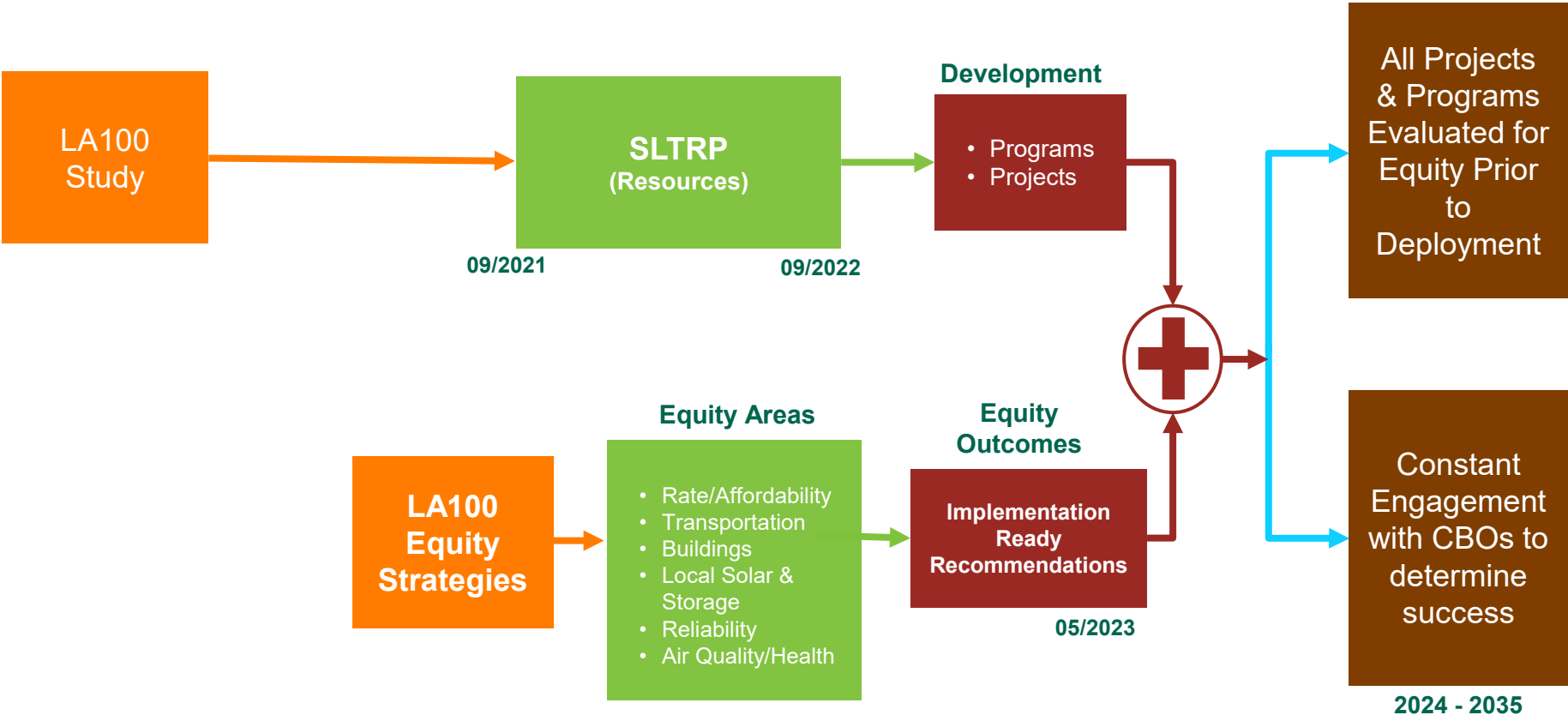
Recommends path forward to achieve our goals

- Integrates findings of LA100
- Community & stakeholder input
- Prioritizes reliability, resiliency, equity, affordability, sustainability

Considerations

- Workforce
- Building, Operating & Maintaining
- Cost to customers
- Supply Chain Risk
- Implementation and Feasibility

Interdependency between SLTRP and Equity Study



LA100

ACHIEVING 100% RENEWABLE ENERGY IN LOS ANGELES

Identified pathways to get to 100% renewable & carbon-free energy, along with job creation, environmental benefits, equity implications, and costs & rate impacts.

Based on LA100 findings, Mayor and City Council set accelerated targets and requirements for developing the 2022 SLTRP

- **City Council Motion (No. 21-0352):**
 - New target to achieve 100% carbon free by 2035 (with equitable and minimal adverse impact on ratepayers) with interim goals of 80% renewables and 97% carbon free by 2030.
 - Prioritize equity in SLTRP for EJ communities. Ensure no increase in emissions at EJ communities.
 - Report on “no-regrets” projects, accelerated pathway, and “shovel-ready” projects.
 - Report on community engagement strategies.
 - Six-month report card to ECCEJR, including challenges and barriers.

LA100 Study Caveats for SLTRP

- Scenarios to achieve 100% by 2035 assume ability to quickly scale up hydrogen infrastructure.
- Major new and expanded transmission are among the most uncertain inputs to modeling the pathways to 100% renewable energy.
- The evolution of the power system outside of LADWP could impact LADWP's opportunities.
- The potential role of the customer has not been fully explored.
- Climate change could impact the ability of LADWP to maintain resource adequacy.
- The study did not fully assess the feasibility of the accelerated deployment; in particular, the study does not evaluate the availability of manufacturing supply chains and labor forces or detailed construction schedules for the resources identified in each scenario.

Overview: What is LADWP's SLTRP?

The Power Strategic Long-Term Resource Plan (SLTRP) is a roadmap to meet our future energy needs, comply with regulatory mandates, meet reliability requirements, and reduce emissions in a cost-effective manner.

Goals:

- Develop a recommended scenario that guides our near-term actions and future energy planning through 2045.
- Provide a recommended path to achieve 100% carbon free by 2035.

SLTRP Framework

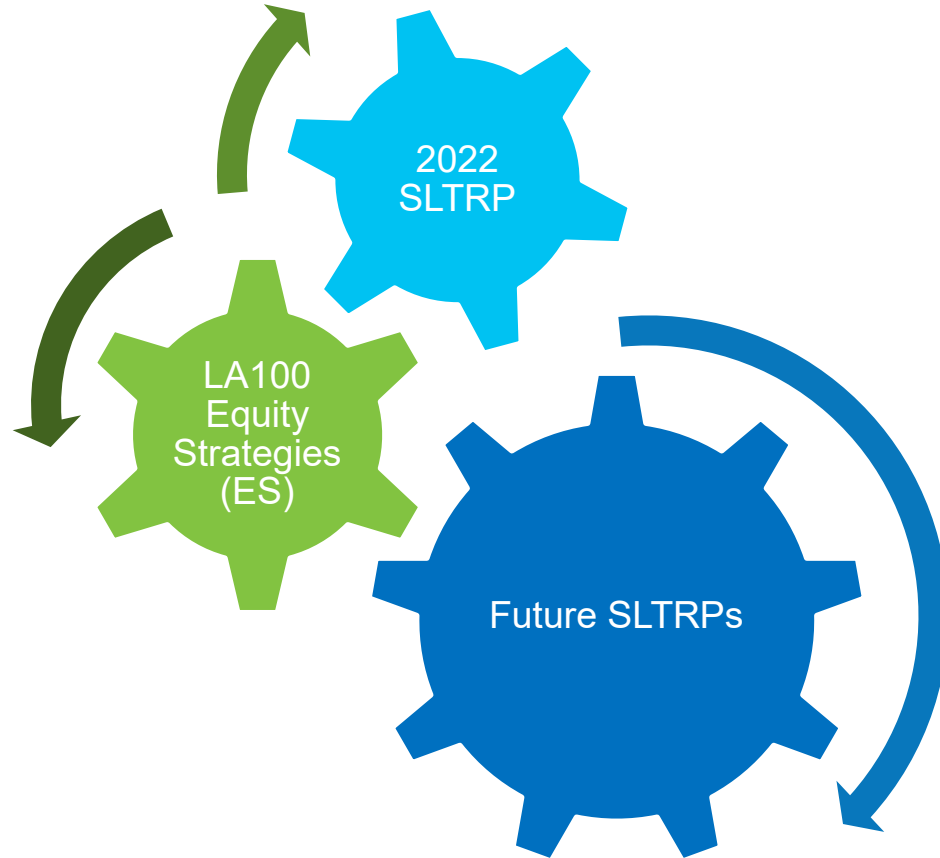
Guided by an Advisory Group of stakeholders from community, businesses, local government, homeowners and customers

Updated annually with major stakeholder engagement every 2 years

Paused after 2017 while LA100 Study was underway

Resuming annual updates with the 2022 SLTRP

Iterative Planning Cycle



2022 SLTRP Advisory Group and Stakeholders

Stakeholder Category	Organization(s)
Academia	CSUN, UCLA, USC
Business and Workforce	AWEA, CESA, Cal SEIA, CEERT, Center for Sustainable Energy, Central City Assoc, IBEW – Local 18, LABC, LA Chamber, VICA
City Government	CLA, City Attorney, Council Districts, Rate Payer Advocate, Mayor’s Office
Neighborhood Council	DWP Advocacy Committee, DWP MOU Oversight Committee, Neighborhood Council Sustainability Alliance
Environmental Community	CBE, Earth Justice, Environment California Research and Policy Center, EDF, Food and Water Watch, NRDC, LAANE, Sierra Club
Premier Accounts and Key Customers	LAUSD, LAWA, Metro, POLA, Valero Wilmington Refinery
Utilities	Southern California Gas, SCPPA

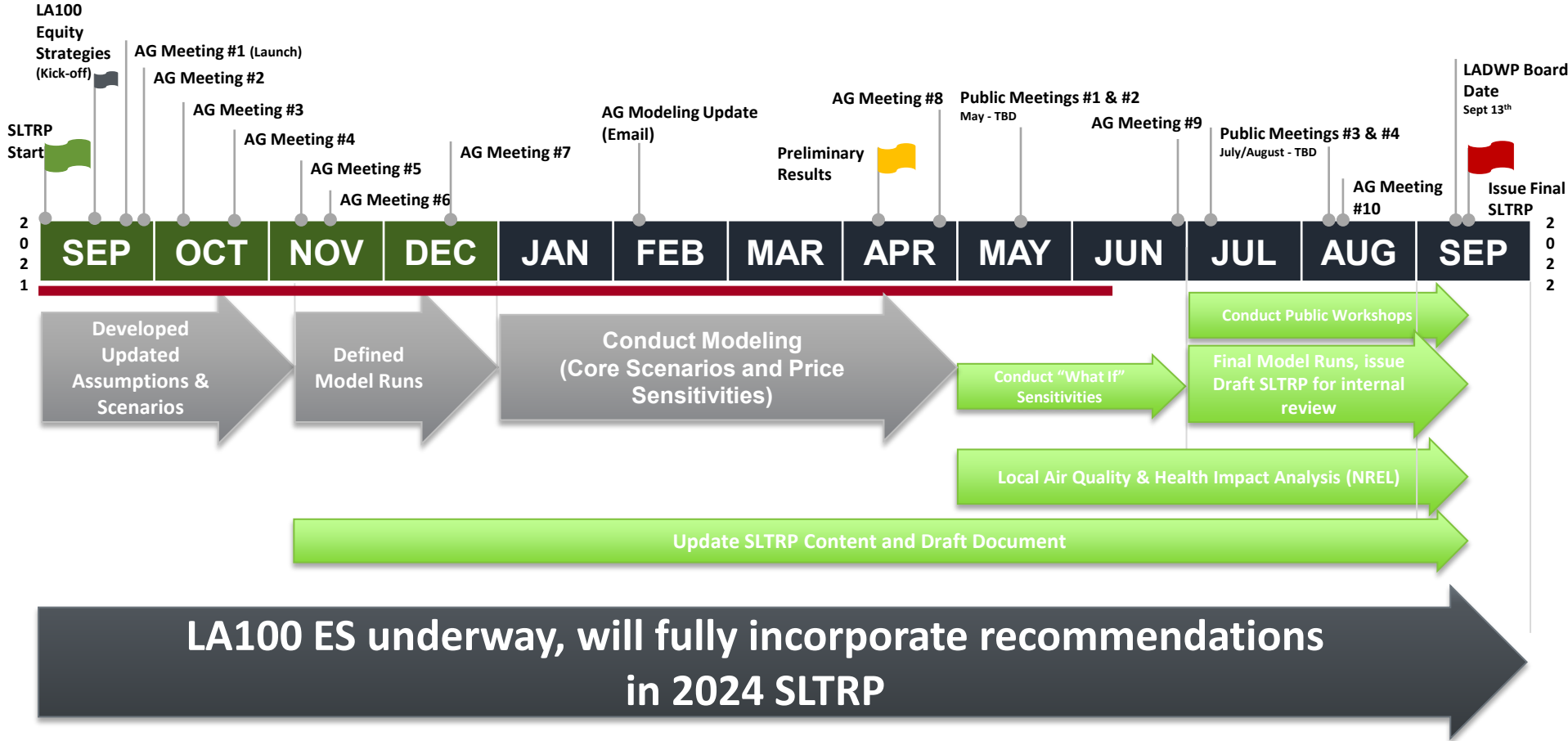
Total

Internal Stakeholder Groups	Input Provided for SLTRP
Financial Services Organization	Load Forecast and Sensitivities, Capital Costs, Rate Impacts, System Losses
Power External Energy Division	Fuel Price Forecast and Sensitivities, Hoover and Small Hydro, IPP Cost and Assumptions
Power Engineering and Technical Services	Power System Reliability Program Re-vamp
Power Transmission Planning, Reg. & Innovation	LA100 Equity Strategies, Regulatory Compliance, 10-year Transmission Plan
Power Resource Planning, Dev. & Programs	Candidate Resources, Distributed Solar, Distributed Energy Storage, Demand Response, In-Basin Capacity Needs
Environmental Affairs	Greenhouse Gas Price Forecast
Efficiency Solutions	Energy Efficiency and Building Electrification
Others	National Renewable Energy Laboratory, Community Affairs

Advisory Group Meeting Plan

Phase 1 Q3 2021 Launch & Laying Foundation	Phase 2 Q3 2021 Scenario Development	Phase 3 Q4 2021 Modeling	Phase 4 Q1-2 2022 Results	Phase 5 Q2-3 2022 Outreach
<p>#1 September 23</p> <ul style="list-style-type: none"> Advisory Group Launch LADWP Overview LA100 (Achieving 100% Renewable Energy) 2022 SLTRP Orientation Advisory Group Protocols & Operating Principles 	<p>#4 October 22</p> <ul style="list-style-type: none"> Customer Focused Programs <ul style="list-style-type: none"> Energy Efficiency & Building - Electrification Transportation Electrification Demand Response Draft Scenario Matrix 	<p>#7 December 17</p> <ul style="list-style-type: none"> LA100 Equity Strategies Overview Energy Storage Presentation 2022 SLTRP What-If Sensitivities Discussion Final Scenario Matrix 	<p>February (Email Update)</p> <ul style="list-style-type: none"> Modeling Progress Check-in, Upcoming Board Meetings 	<p>#9 June 30</p> <ul style="list-style-type: none"> Preliminary Results on What-if Sensitivities <p>May – August TBD Community Outreach Meetings</p>
<p>#2 September 30</p> <ul style="list-style-type: none"> LA100 Study Review (NREL) at 9 am LA100 Rates Analysis (OPA) at 10 am LA100 Next Steps (LADWP) LA100 Assumptions (PSRP) Consider Topics for October 22 Consideration of Scenario Definition 	<p>#5 November 10</p> <ul style="list-style-type: none"> LA100 “No Combustion” Scenario 2022 SLTRP Assumptions Metrics & Evaluation Process Scenario Considerations Refine Scenario Matrix 	<p>November – May</p> <ul style="list-style-type: none"> Internal Modeling Analysis of Scenarios 	<p>#8 April 28</p> <ul style="list-style-type: none"> Preliminary Results on Core Scenarios (Capacity Expansion, LOLP and Production Cost Model) 	<p>#10 August 11 Public Outreach Results</p> <p>August Review Draft 2022 SLTRP</p>
<p>#3 October 08</p> <ul style="list-style-type: none"> SLTRP Deep Dive SB100 Review (LADWP) 100% Carbon-Free by 2035 Requirements (NREL) Green Hydrogen in LA (LADWP) 2022 SLTRP Key Considerations and Potential Scenarios 	<p>#6 November 19</p> <ul style="list-style-type: none"> Distribution Automation 2022 SLTRP Advisory Group Feedback and Refined Draft Scenario Matrix 2022 SLTRP What-If Sensitivities Discussion 	<p>Modeling Underway</p>	<p>TBD Potential field trip</p>	<p>September Submit Final 2022 SLTRP for approval</p>

2022 SLTRP Timeline



2022 SLTRP Key Elements (Planning)

Public Engagement:

Advisory Group input

Equity Strategies engagement

Community & stakeholder outreach

Planning Considerations:

Future resource mix

Legislative and Regulatory Mandates

Resource Adequacy

Greenhouse Gas Emissions

Program Revenue Requirements

Rate Impacts

Minimizing Usage of Valley

Resiliency

2022 SLTRP Key Considerations (Implementation)

- How long do projects take to build?
 - California Environmental Quality Act (CEQA) timeline
- How much power do we need for local neighborhoods?
- Understanding emerging technologies and maturity (e.g. green hydrogen, energy storage)
- Deadlines for retiring ocean-cooled generating units (Scattergood, Haynes & Harbor)

Incorporating SLTRP Advisory Group Feedback

AG Feedback from First 7 Meetings	LADWP's Response
Model only 100% Carbon Free by 2035 scenarios	✓ All scenarios will model 100% Carbon Free by 2035 in compliance with Council motion
Include a "No Combustion" scenario and long-duration energy storage	✓ "What-If" sensitivities added
Understand capital expenditures and cost, customer cost to electrify	✓ SLTRP will evaluate cost and rates, and estimate bill impacts
Model emerging technologies and develop a process to evaluate	✓ Developing a process for reviewing and assessing new technologies
Explore "low load" sensitivities and impact to rates	✓ Will model a "low load" sensitivity and related bill impacts
Ensure environmental justice and study local air quality impacts	✓ Partnering with NREL to conduct Local Air Quality and Health Impacts analysis for SLTRP

SLTRP Refinements Over the LA100 Study

Strategy	LA100 Study Assumptions	SLTRP Updated Assumptions	Impact to Customers
Power System Reliability Program	All existing distribution overloads would be address by LADWP before any LA100 investments are made	Incorporated \$60B from 2022-2045 to address existing and future overloads due to electrification	Prepare LADWP's grid for transportation and building electrification, resulting in economy wide emissions reductions
Electric Vehicle Charging Shapes	<u>Moderate Load Scenarios:</u> Unmanaged EV charging, 2020-45 <u>High Load Scenarios:</u> Managed EV charging, 2020-45	<u>SLTRP Scenarios:</u> Morphing from unmanaged to managed EV charging, 2022-2045	Optimizes renewables and customer cost, creates incentives for EV customers, improves reliability and emissions reductions
Net Energy for Load (Sales)	NEL of 28,500 GWh in 2020	20% lower than LA100 in short-term but increases to LA100 level by 2045 (moderate load)	Short-term pressure on rates due to reduced energy sales and program revenue recovery
Peak Load (Capacity Needs)	Increased future peak loads for moderate and high load	Expected peak load is in between LA100's moderate and high load	Need for capacity remains the same

2022 STRATEGIC LONG-TERM RESOURCE PLAN (SLTRP) – CORE SCENARIOS



SCENARIOS (100% Carbon Free by 2035)

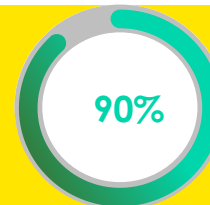
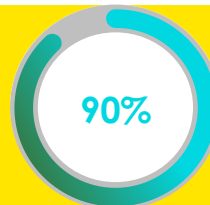
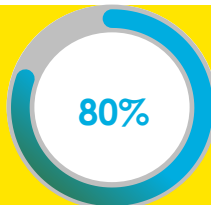
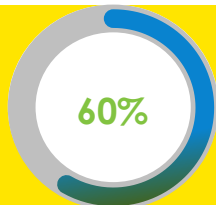
SB 100
Reference Case

Case #1

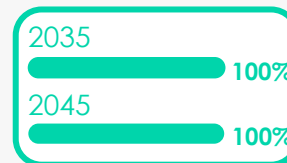
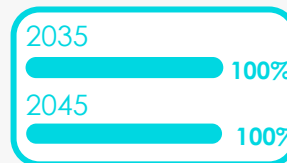
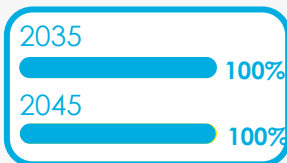
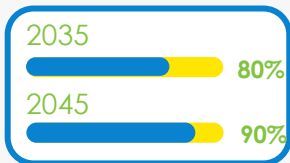
Case #2

Case #3

Total Renewable Portfolio Standard 2030



Total Clean Energy (Renewable, Hydro and Nuclear) Penetration Achieved 2035 vs. 2045



Distributed Energy Resource Deployments



Reference Levels



High Levels



High Levels



Highest Levels

C
L
E
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E
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2022 SLTRP Overview - Sensitivities

Commodity Prices	Examples	Price Sensitivity	Scenario to Apply
Fuel Prices*	Natural Gas, Green Hydrogen, etc.	High/low sensitivities	SB100, Case 2, Tentative Recommended Case
GHG Prices*	GHG Allowance Prices	High/low sensitivities	SB100, Case 2, Tentative Recommended Case
Renewables and Energy Storage Prices*	Solar, Wind, Geothermal, Li-Ion, flow, etc.	High/low sensitivities	SB100, Case 2, Tentative Recommended Case

*bookend scenarios to evaluate price sensitivities by matching low and high commodity prices:

- **Low Bookend:** Low natural gas prices, low hydrogen prices, low GHG prices, low renewable and energy storage prices
- **High Bookend:** High natural gas prices, high hydrogen prices, high GHG prices, high renewable and energy storage prices

Implementation Risk	Description	"What-if" Sensitivities	Scenario to Apply
Emerging Technologies	No In-Basin Combustion Alternatives	Long duration capacity (e.g. Hydrogen Fuel Cells)	Case 1, Case 2, Case 3
Demand Side Resources	Demand Response	Reaching only half of the 576/633 MW of DR by 2035	Case 1, Case 2, Case 3
Transmission	Transmission Upgrades (over 10 projects by 2030)	More difficult in-basin upgrades not completed by 2030	Tentative Recommended Case
Load	Transportation/Building Electrification	Low Load and High Load	Tentative Recommended Case

SLTRP Outcomes

Outcomes of 2022 SLTRP

- High-level roadmap to 100% carbon free by 2035, driven by LADWP with stakeholder input
- Focus on big buckets of resources (large-scale renewables and energy storage, small-scale local solar and storage, EE and demand response, etc.)
- Modeling scenarios to determine best path to meet our mandates based on the guiding principles
- Integrates total Power System costs, infrastructure, resource planning, etc.



A wide-angle photograph of a large-scale solar panel installation on a flat roof. The panels are arranged in long, parallel rows, supported by metal racking. The sky is a clear, bright blue with a few wispy clouds. In the background, a range of green hills is visible under the same sky. A semi-transparent teal banner is overlaid across the middle of the image, containing white text.

SLTRP Examples that relate to LA100 Equity Strategies

Reducing Use of Valley Generating Station

- LADWP to dramatically reduce utilization of Valley Generating Station:
 - The combination of **80% renewables** by 2030, **Haynes recycled water cooling**, and **Scattergood capacity** reduces Valley usage
 - Valley usage to be reduced from 30% to 5% thereby reducing adverse impacts on the local community
- Utilize significant space at Valley Generating Station for future clean energy projects

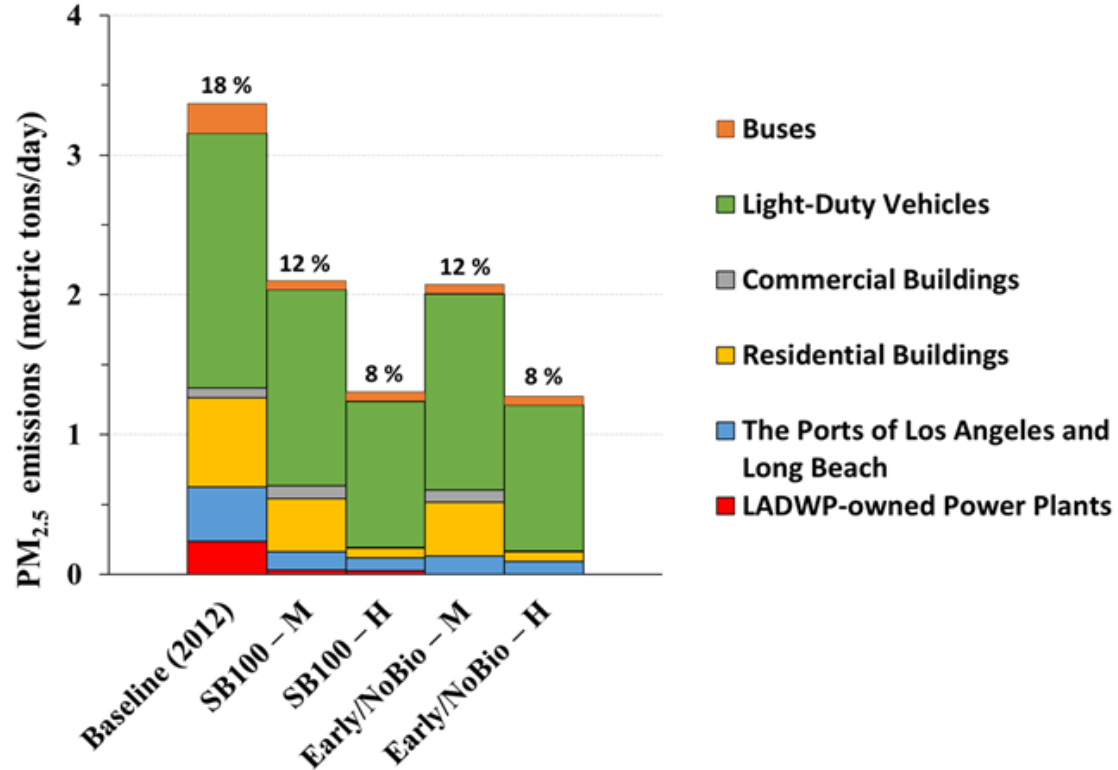


Electrification Drives Air Quality and Health Benefits

a)



b)



Deploying Distributed Energy Resources Equitably

- We need: 1,000 MW of local solar, 500 MW of demand response, double energy efficiency, and support 580,000 electric vehicles by 2030.
- Progress:
 - LA100 Equity Strategies study through 2023
 - Expanded FiT from 150 MW to 450 MW
 - Launched FiT+ allowing energy storage
 - Launched VNEM Pilot Program
 - Expanded Power Savers (residential DR program)
 - More DER proposals under negotiations



Key Takeaways on the 2022 SLTRP

- SLTRP is a living document; updated each year with stakeholder engagement every 2 years.
- 2022 SLTRP will identify the buckets for achieving goals. Within these buckets, LADWP will incorporate the LA100 ES findings.
- Expect to fully incorporate LA100 ES recommendations in 2024 SLTRP update.
- LA100 ES recommendations will inform future programs designs and bulk power development.

Communications & Public Affairs


- Website: ladwp.com/sltrp
- Email address: powerSLTRP@ladwp.com

LADWP > About Us > Power > Strategic Long-Term Resource Plan

Power

- Past & Present
- Facts & Figures
- Power Content Label
- Clean Energy Future
- Strategic Long-Term Resource Plan**
- Documents
- FAQs
- Power Reliability
- Wildfire Mitigation Plan
- Power Quality
- Renewable Energy
- Projects
- Energy Efficiency & Rebates
- Electric Safety
- Advanced Metering Infrastructure
- Rates

Strategic Long-Term Resource Plan



L.A.'s energy future is guided by the Power Strategic Long-Term Resource Plan (SLTRP), a roadmap for providing reliable and sustainable electricity to our customers with a 25-year planning horizon, while also transitioning to a 100% carbon-free power supply by 2035. The SLTRP is updated periodically and incorporates community input through robust outreach and engagement.

Overview

Developing a robust and actionable power plan is essential for LADWP to achieve a clean energy future for Los Angeles. The Power Integrated Resource Plan (IRP) was expanded into the SLTRP, which has a 25-year horizon that aligns with state goals for greenhouse gas (GHG) emissions reductions. LADWP continues to produce an IRP that is submitted to the California Energy Commission every five years.

Following the results of the [LA100 study](#) →, the City Council established an accelerated goal for all of the city's electricity to come from zero-carbon energy by 2035, [City Council Motion](#) and a [Hiring Plan City Council Motion](#).

+ Advisory Group

- AG Meetings and Presentations

Advisory Group Meeting #8 (April 28, 2022)

- [SLTRP Agenda Meeting #8](#)
- [SLTRP Presentation Meeting #8](#)

Advisory Group Meeting #7 (December 17, 2021)

- [SLTRP Meeting Summary AG #7](#)
- [SLTRP Agenda Meeting #7](#)
- [SLTRP Presentation Meeting #7](#)
- [SLTRP Energy Storage Update](#)
- [SLTRP LA100 Equity Strategies Overview](#)

Advisory Group Meeting #6 (November 17, 2021)

- [SLTRP Meeting Summary AG #6](#)
- [SLTRP Agenda Meeting #6](#)
- [LA100 Next Steps Scenario Matrix](#)
- [SLTRP Presentation Meeting #6](#)
- [SLTRP Distribution Automation Meeting #6](#)

Advisory Group Meeting #5 (November 10, 2021)

- [SLTRP Meeting Summary AG #5](#)
- [SLTRP Meeting #5 Agenda](#)
- [2022 SLTRP Presentation](#)
- [LA100 SLTRP NREL Presentation](#)

Q&A



Equity Outcomes and Metrics Discussion

- Truck Electrification Air Quality and Health Impacts
- Local Solar and Storage
- Grid Resiliency and Distribution Upgrades



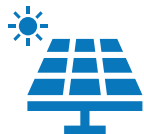
Modeling, Analysis, & Strategy Development

Equity Outcomes & Metrics

The goal of today's discussions is to hear feedback on **how we should measure success** in just distribution of:



Truck electrification air quality and health impacts



Solar and storage benefits



Grid resiliency and distribution grid upgrades

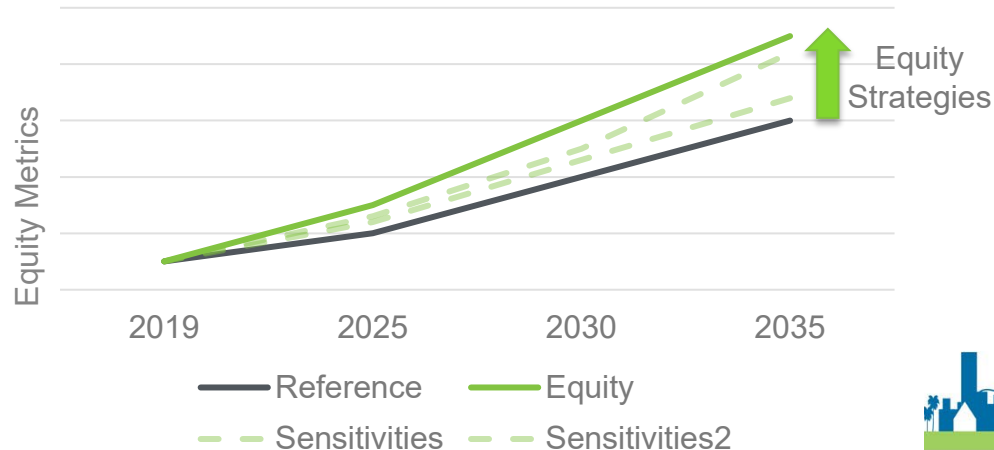


Modeling, Analysis, & Strategy Development

Shared:
**100% clean
electricity by
2035 with high
electrification
and efficiency**

LA100 Equity Strategies **common scenarios:**

- **Reference:** LA100 (100% by 2035 with High electrification) without equity considerations
- **Equity strategies:** Achieve LA100 in ways that improve energy justice
- Some topics will explore variations (sensitivities) to explore which strategies achieve greater equity



Breakout Groups



Breakout Groups

Group	1	2	3
Steering Committee Member	Alliance of River Communities (ARC)	City of LA Climate Emergency Mobilization Office (CEMO)	Pacoima Beautiful
	The South Los Angeles Transit Empowerment Zone (SLATE-Z)	Move LA	Climate Resolve
	Strategic Concepts in Organizing and Policy Education (SCOPE)	RePower LA	Enterprise Community Partners
	Pacific Asian Consortium in Employment (PACE)	South LA Alliance of Neighborhood Councils	Esperanza Community Housing Corporation
	DWP-NC MOU Oversight Committee	Community Build, Inc.	Los Angeles Alliance for a New Economy (LAANE)



Truck Electrification Air Quality and Health Impacts

How do we measure success?

Should air quality and health benefits from truck electrification be targeted to:

- A. Disadvantaged communities (DACs) defined by CalEnviroScreen
- B. Neighborhoods with the poorest air quality
- C. Neighborhoods with high rates of asthma or other health vulnerabilities
- D. Neighborhoods with the highest potential for air quality improvements from truck electrification regardless of neighborhood characteristics (likely associated with high truck traffic areas)
- E. Or another metric?



Local Solar & Storage

How do we measure success?

- Should equity in solar and storage be measured in terms of:
 - **Utility bill savings** from access to either rooftop PV or shared/community solar?
 - **Ownership** of rooftop solar and solar + storage systems?
- Should we focus on:
 - Customers in multifamily and renter-occupied buildings?
 - Low- and moderate-income households in all census tracts?
- **What approaches should be prioritized to expand equitable access** to solar and storage benefits (when 64% of Angelenos are renters)?
 - Customer ownership of rooftop PV/storage
 - Shared/community solar participation
 - On-bill financing (meter-based) leveraging utility buying power/credit
 - Utility or third-party ownership with monthly rental payments/pay-as-you-save?
 - Direct installs vs. rebates
 - Technical assistance



Grid Resiliency and Distribution Grid Upgrades

How do we measure success?

- **What does equity look like for the distribution grid?** What are key outcomes for the following and how can we best measure/compare options?
 - Equitable ability to charge EVs and install rooftop solar/storage
 - Grid reliability (day-to-day power without interruptions)
 - Electric resilience (access to electricity services during emergency outages)
- **What are equitable electric service priorities during an emergency outage, disaster, etc.?**
 - Resilience hub-type opportunities (e.g., community centers) for cooling, vehicle and phone charging, and potentially water purification?
 - In-home options?
 - Microgrids?



Wrap Up and Next Steps



Going Forward

Tentative

Steering Committee Meetings

July 20, 2022
Virtual

- Breakout Group Feedback on strategies and metrics
- Affordability and jobs

August 17, 2022
Virtual

- Equity strategies and metrics synthesis from June/July SC feedback

Subsequent Meetings

- **Third Wednesday of each month, 10:00 a.m. – 12:00 p.m. PT**
- **Virtual** for near-term



What would you like to discuss in upcoming meetings?
Drop your agenda suggestions in the chat!

