

# 2022 Power Strategic Long-Term Resource Plan (SLTRP) Roadmap to 100% Carbon Free by 2035

SLTRP Advisory Group Meeting #10
Remaining Sensitivity Results, 2022 SLTRP Key Findings, Risk and Challenges,
August 12, 2022

# Meeting Agenda

Joan Isaacson, Kearns & West



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Email: powerSLTRP@ladwp.com

# **Guides for Productive Virtual Meetings**

Use Chat for input OR Raise Hand to join the conversation

Help to make sure everyone gets equal time to give input

Keep input concise so others have time to participate

Actively listen to others, seek to understand perspectives

Offer ideas to address questions and concerns raised by others

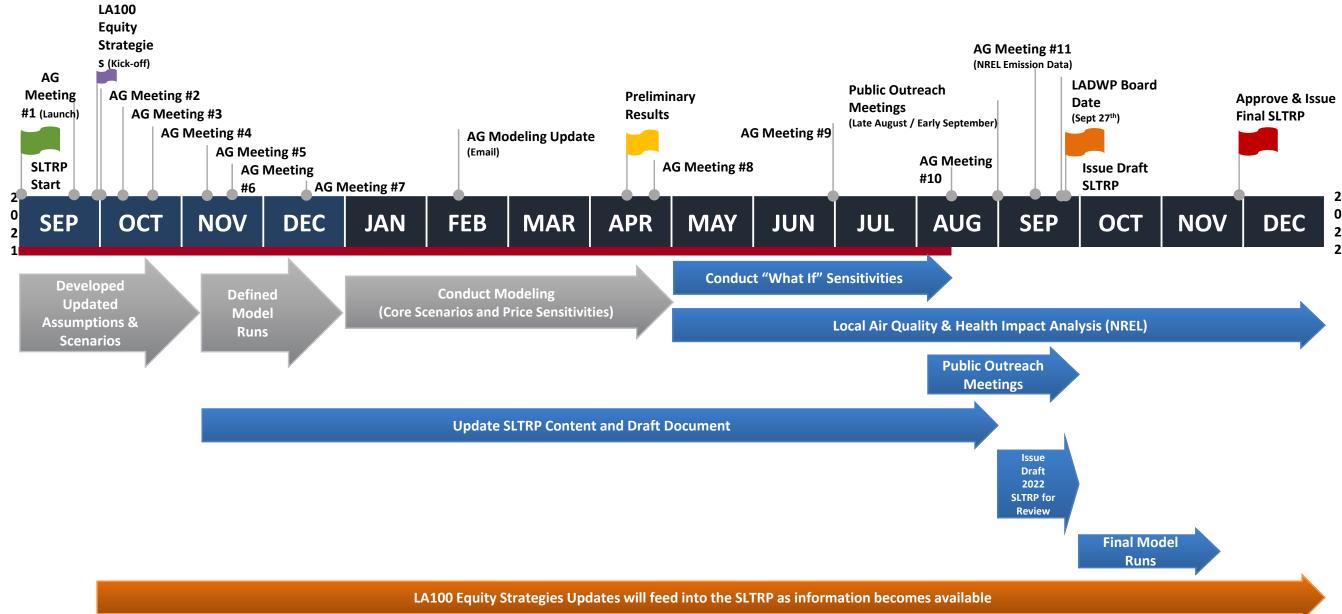
# Advisory Group Role in 2022 SLTRP

The Advisory Group will provide input and feedback based on their expertise, knowledge, and resources of the organizations, institutions, and constituent groups represented by Advisory Group members.

# **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
<ul> <li>#1 September 23</li> <li>Advisory Group Launch</li> <li>LADWP Overview</li> <li>LA100 (Achieving 100% Renewable Energy)</li> <li>2022 SLTRP Orientation</li> <li>Advisory Group Protocols &amp; Operating Principles</li> </ul>	<ul> <li>#4 October 22</li> <li>Customer Focused Programs         <ul> <li>Energy Efficiency &amp; Building -</li> <li>Electrification</li> <li>Transportation Electrification</li> <li>Demand Response</li> </ul> </li> <li>Draft Scenario Matrix</li> </ul>	<ul> <li>#7 December 17</li> <li>LA100 Equity Strategies     Overview</li> <li>Energy Storage     Presentation</li> <li>2022 SLTRP What-If     Sensitivities Discussion</li> <li>Final Scenario Matrix</li> </ul>	February (Email Update)  • Modeling Progress Check-in, • Upcoming Board Meetings	<ul> <li>#9 June 30</li> <li>Preliminary Results on Reliability, resiliency, and Sensitivities</li> </ul>
<ul> <li>#2 September 30</li> <li>LA100 Study Review (NREL) at 9 am</li> <li>LA100 Rates Analysis (OPA) at 10 am</li> <li>LA100 Next Steps (LADWP)</li> <li>LA100 Assumptions (PSRP)</li> <li>Consider Topics for October 22</li> <li>Consideration of Scenario Definition</li> </ul>	<ul> <li>* November 10</li> <li>LA100 "No Combustion" Scenario</li> <li>2022 SLTRP Assumptions</li> <li>Metrics &amp; Evaluation Process</li> <li>Scenario Considerations</li> <li>Refine Scenario Matrix</li> </ul>	November – May  • Internal Modeling  • Analysis of Scenarios	<ul> <li>#8 April 28</li> <li>Preliminary Results on Core Scenarios</li> <li>(Capacity Expansion, LOLP and Production Cost Model)</li> </ul>	#10 August 12 Final Sensitivities SLTRP Key Findings  August  Community Outreach Meetings  Review Draft 2022 SLTRP
<ul> <li>#3 October 08</li> <li>SLTRP Deep Dive</li> <li>SB100 Review (LADWP)</li> <li>100% Carbon-Free by 2035 Requirements (NREL)</li> <li>Green Hydrogen in LA (LADWP)</li> <li>2022 SLTRP Key Considerations and Potential Scenarios</li> </ul>	<ul> <li>#6 November 19</li> <li>Distribution Automation</li> <li>2022 SLTRP Advisory Group Feedback and Refined Draft Scenario Matrix</li> <li>2022 SLTRP What-If Sensitivities Discussion</li> </ul>	Modeling Underway	<b>TBD</b> Potential field trip	#11 September 15 Public Outreach Results NREL Air Quality Modeling  September Submit 2022 SLTRP for approval

# **SLTRP TIMELINE**



# Recap of SLTRP Advisory Group Feedback

Jay Lim, LADWP Manager of Resource Planning







# SLTRP Advisory Group #9 Feedback

#### • Implementation Challenges

- Is there sufficient transmission capacity to implement any of the core SLTRP cases?
- Any scenario will require extensive system upgrades. LADWP is currently finding it challenging to implement current upgrades.
- Is there enough space at the in-basin generation facilities to build the required generation and storage assets?
- Maintaining reliability is a major concern.

#### Costs

- Does the SLTRP take into account cost of upgrading voltage to 34.5 kV?
- Given the low capacity factors of in-basin hydrogen, a cost comparison should be made to keeping these units gas-fired.
- Is curtailment cost accounted for?
- Environmental Justice and Community Health
  - An in-basin fuel cell sensitivity should be performed.
  - Where do health and equity components fit into the SLTRP?

#### Other

- There is a perception that the process is too political.
- There is a desire for more clarity on assumptions and lack of complete results before making a recommendation.

# **SLTRP Risks and Challenges**

David Castro, LA100 Policy and Implementation Supervisor

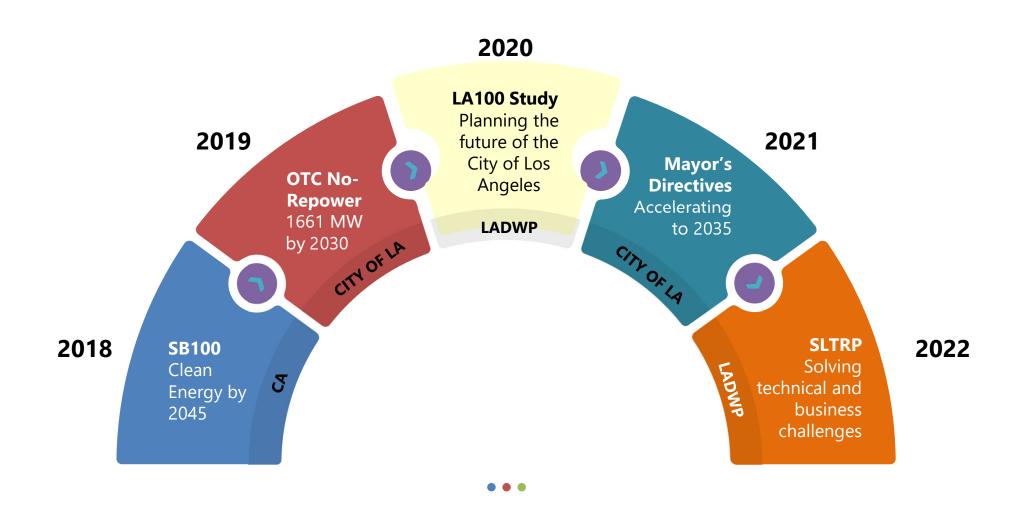




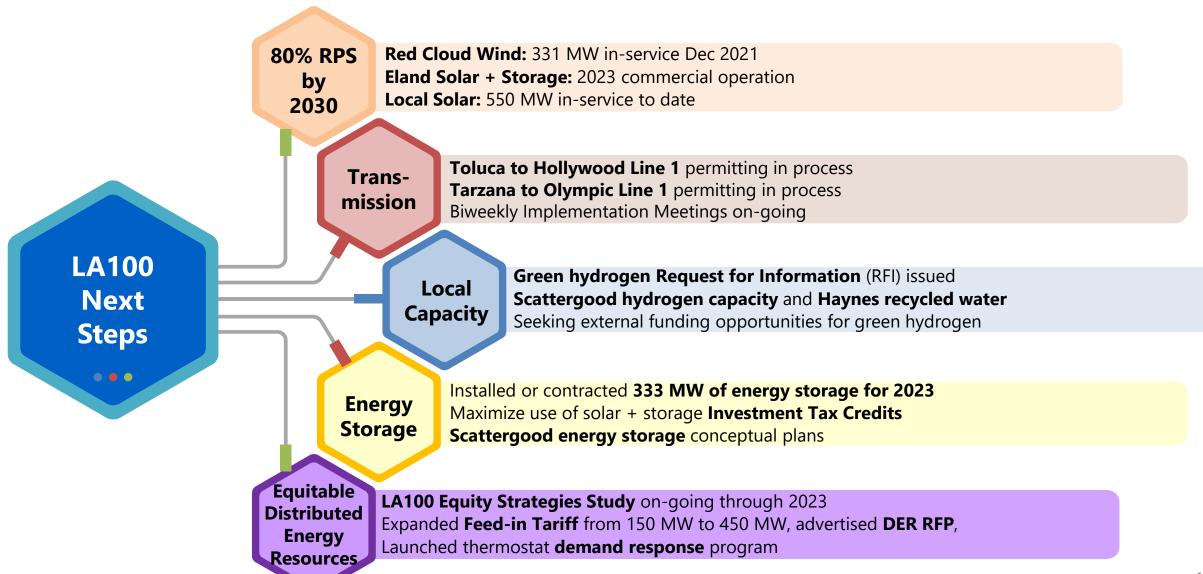


# DRIVING CHANGE

#### THE CLEAN ENERGY FUTURE IS BEING SHAPED THRU ONGOING POLICY



# INITIAL MOMENTUM



# RISK ASSESSMENTS

#### THE SLTRP WILL ADDRESS CHALLENGES AND PATHWAYS FORWARD

#### Emerging Technology Readiness

Research, Development, Opportunity

#### Integrated Human Resource Plan

Building the future workforce

### Implementation & Constructability

Coordination and Project Management

## Supply Chain Assessment

 Understanding access and ensuring availability of resources

#### Procurement Risk Assessment

Financial Health and Investments

## Operations and Maintenance

Expanding the Power System Reliability Program

#### Climate Change

Overbuilding Resources

### Geopolitical Conflicts

Market Conditions and Resources

## Cybersecurity Threats

Handling and mitigating external threats



# Discussion and Q&A



# Part 2 Sensitivities (Load and Transmission)

Zach Brode, Ascend Analytics Robert Hodel, LADWP Integrated Resource Planning Supervisor











- Founded in 2002 with 50 employees in Boulder, Oakland and Bozeman
- Seven integrated software products for operations, portfolio analytics, and planning
- Consulting and custom analytical solutions

#### **Proven and Broadly Adopted**











































#### **Differentiated Value for Enhanced Decision Analysis**

## PowerSimm OPS OPERATIONAL STRATEGY

- Optimal short-term dispatch
- Determine operating strategies from position and financial exposure
- Track realized customer revenue and costs to settled day ahead and real time price
- Optimize financial exposure between day ahead and real time prices

## POWErSimm Portfolio Manager PORTFOLIO MANAGEMENT

- Portfolio management
- Generation asset management
- Hydro and renewable asset modeling
- Retail management & pricing
- Energy purchases and sales
- CFaR, GMaR, EaR

## PowerSimm Planner VALUATION & PLANNING

- Asset valuation
- Resource Planning
- Capacity Expansion Planning
- Reliability Analysis
- Renewable Integration
- Long-term Price Forecasting

## Smart Bidder STORAGE OPTIMIZATION

- Optimal offers to ISO
- Continuous adjust ISO offers
- Forecast probabilities of price spikes
- Renewables plus storage

## BatterySimm Valuation STORAGE VALUATION

- Optimal siting and sizing
- Captures realistic revenues given imperfect foresight
- Battery cycle analysis

#### **Ascend Market Intelligence**

- Power, ancillary, and capacity price forecasts, including subhourly and geographic evolution
- Market reports and analysis
- Hourly and subhourly nodal and hub price simulations

## **Modeling Plan**

ltem	Status		
Model inputs for existing and new resources	Complete		
Scenario build out	Complete		
Model Validation	Complete		
Capacity Expansion Modeling	Complete		
Production Cost Modeling	Complete		
Resource Adequacy	Complete		
Resiliency Study	Complete		
High and Low Load Sensitivities	Preliminary Results Shown Today		
Transmission Sensitivity	Preliminary Results Shown Today		





## **Modeling Scenarios**



## SB100 Reference Case

- 60% RPS by 2030
- 100 Clean by 2045 (based on retail sales)
- Reference level of local solar (1500 MW by 2035)

- Moderate DR (576 MW by 2035)
- Moderate EE (3210 GWh by 2035)
- Moderate Transmission Upgrades

#### Case 1

## **Carbon Free by 2035 – Moderate**

- 80% RPS by 2030 (based on sales)
- 100% carbon free by 2035 (based on generation)
- High level of local solar (2240 MW by 2035)

- Moderate DR (576 MW by 2035)
- High EE (4350 GWh by 2035)
- High Transmission Upgrades

#### Case 2

## Carbon Free by 2035 – Aggressive

- 90% RPS by 2030 (based on sales)
- 100% carbon free by 2035 (based on generation)
- High level of local solar (2240 MW by 2035)

- Moderate DR (576 MW by 2035)
- High EE (4350 GWh by 2035)
- High Transmission Upgrades

#### Case 3

## Carbon Free by 2035 – Aggressive with High DERs

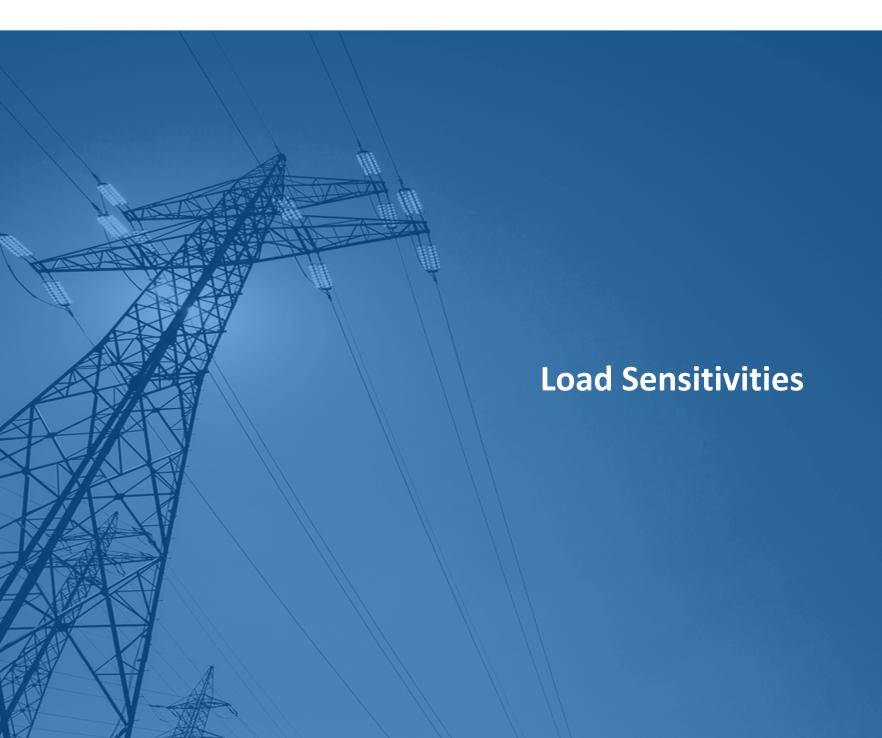
- 90% RPS by 2030 (based on sales)
- 100% carbon free by 2035 (based on generation)
- Highest level of local solar (2400 MW by 2035)

- High DR (633 MW by 2035)
- Highest EE (4770 GWh by 2035)
- High Transmission Upgrades

## **Sensitivities**



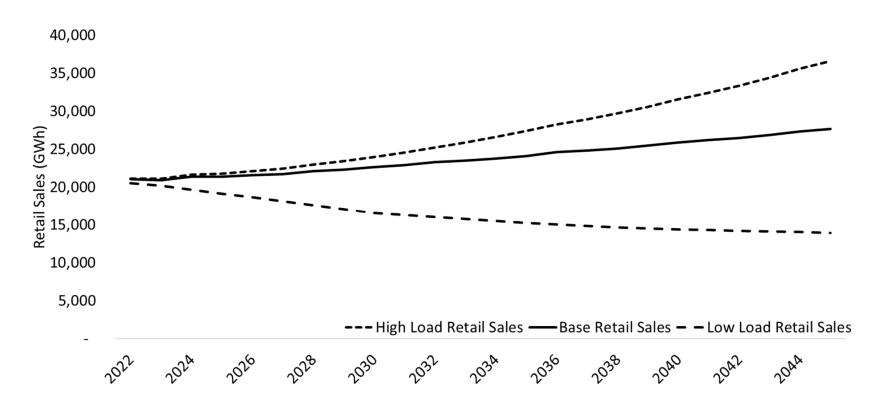
- Sensitivity studies provide understanding on how portfolio costs change with adjustments to load and transmission inputs
  - Load growth may differ from base projections
    - High EE and local solar adoption → Low load growth
    - High EV growth, high building electrification → High load growth
    - Load simulations cover a range of uncertainty based on historical load data
    - Sensitivities explore a wider range of uncertainty based the widest possible future load range
  - Transmission upgrades may not occur as expected
    - Without planned transmission, in-basin resources must provide more energy



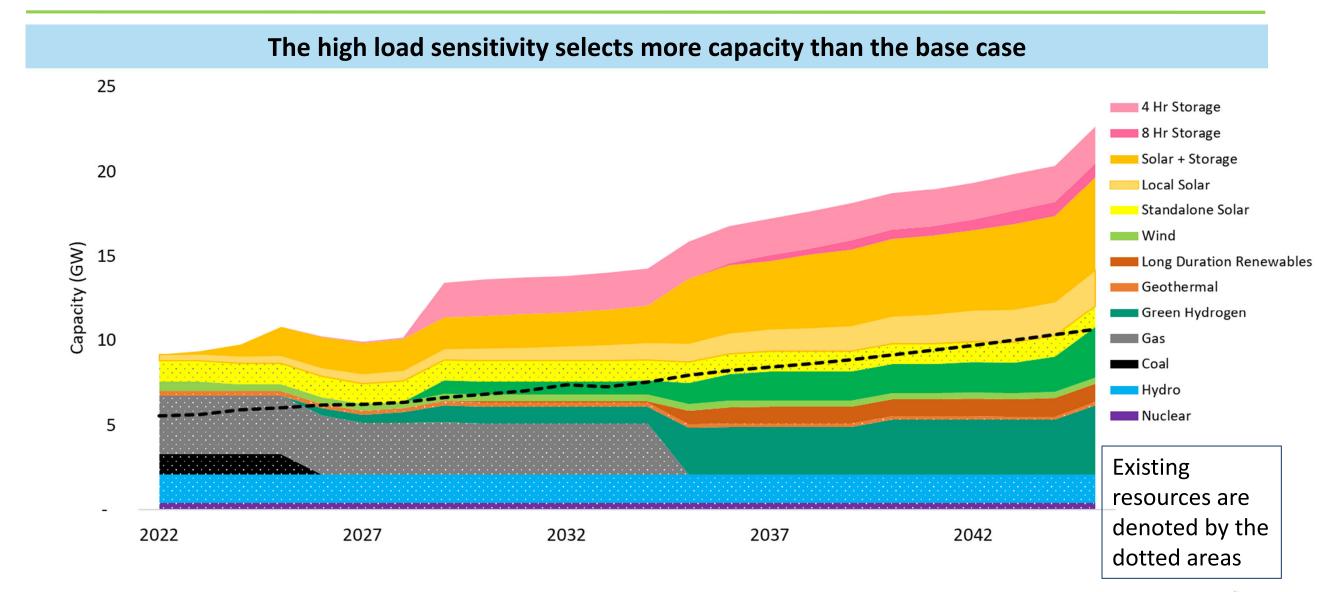


## **Retail Sales Forecast Sensitivities**

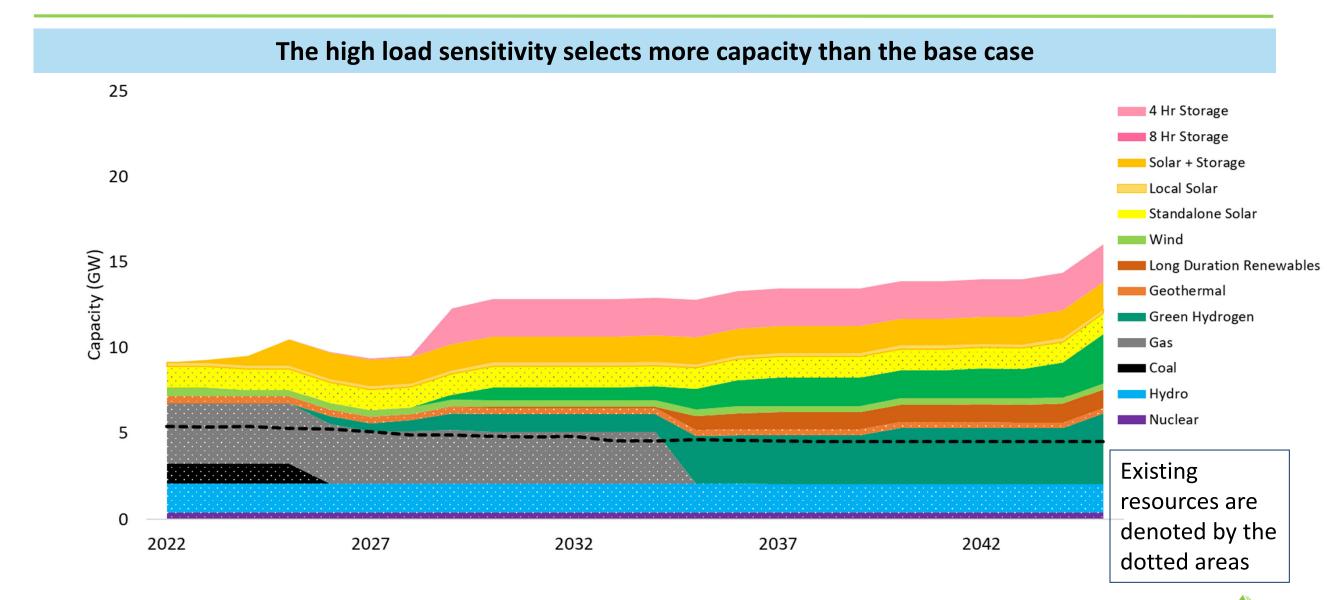
- Case 1 Retail Sales load assumes an annual growth rate of 1.2 %
- Annual growth in the high case averages 2.4 % with high EV/bldg. electrification
- The low case growth is -1.6 % due to much more EE/local solar



## **High Load Sensitivity**

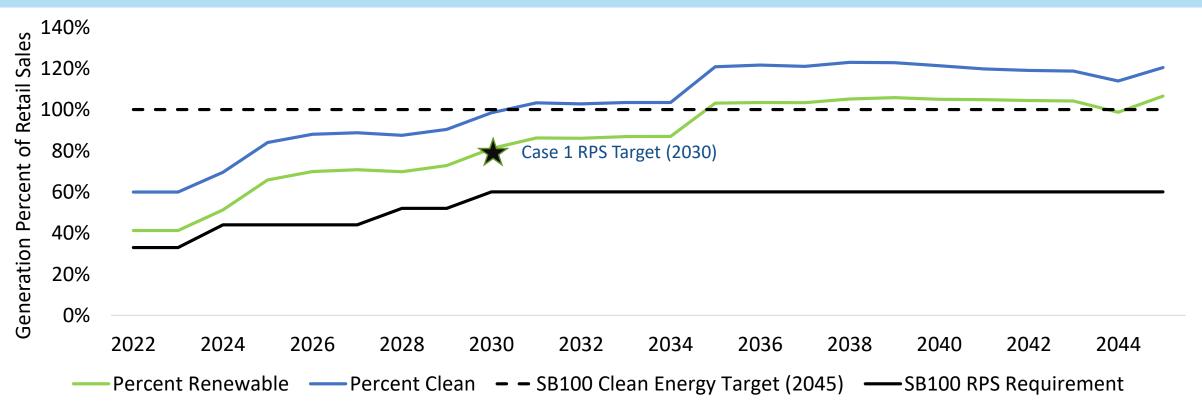


## **High Load Sensitivity**



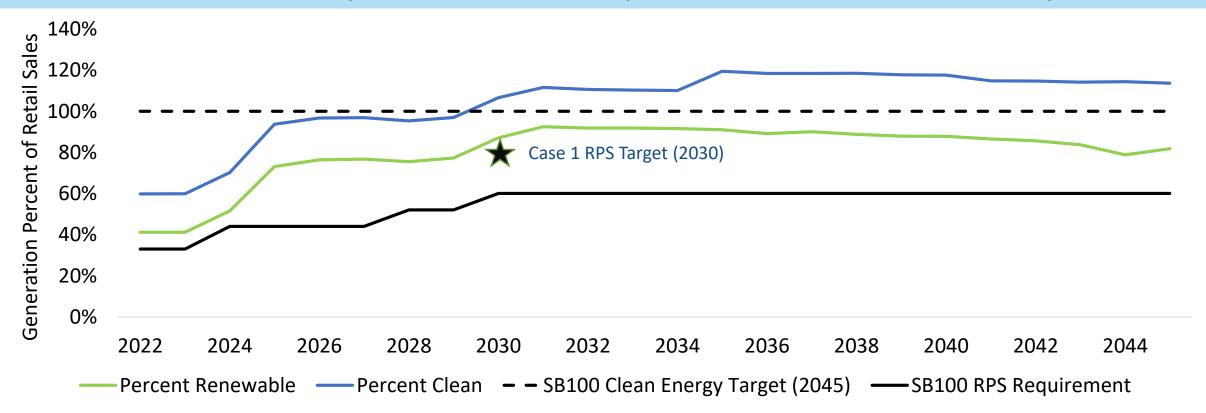
## **High Load Clean Energy and RPS Position**

### The high load sensitivity meets the 80% RPS requirement in 2030 and zero carbon by 2035



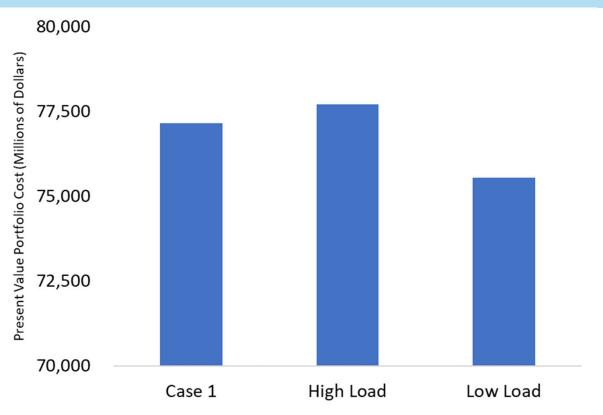
## **Low Load Clean Energy and RPS Position**

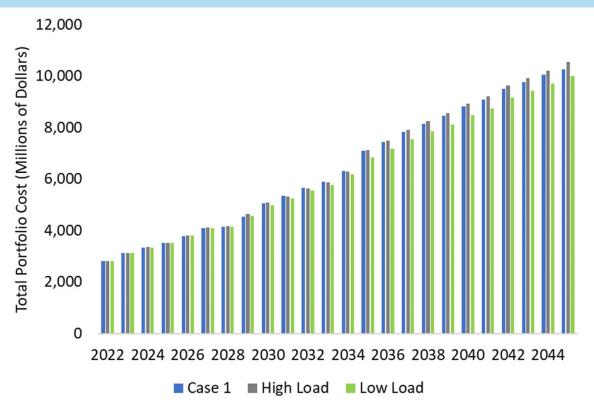
#### The low load sensitivity meets the 80% RPS requirement in 2030 and zero carbon by 2035

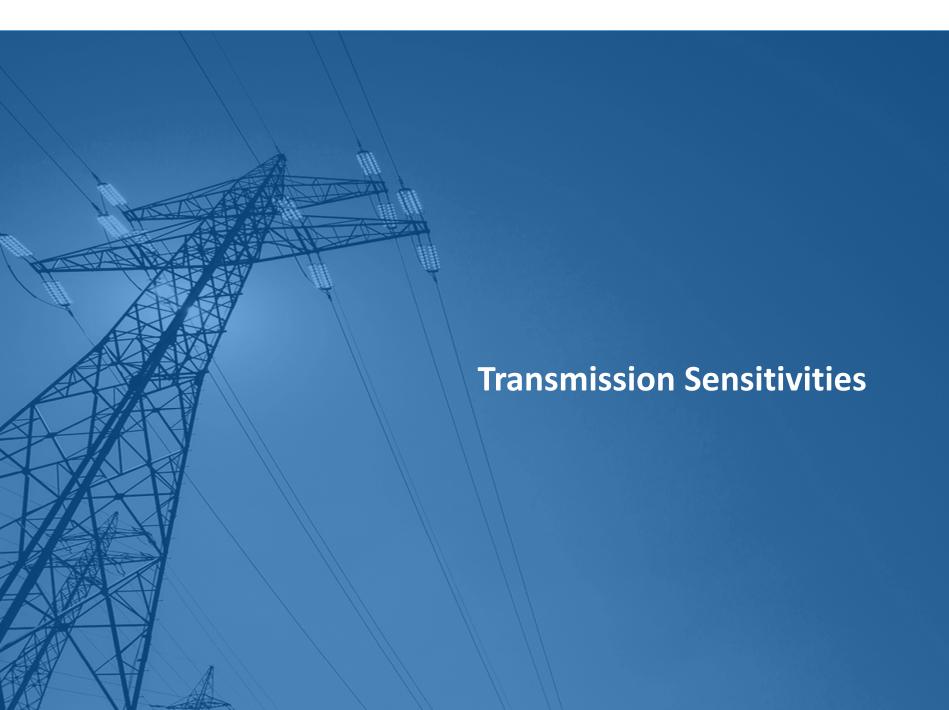


## **Total Portfolio Cost**

# The high load forecast requires additional resources to serve customer load and therefore higher portfolio costs



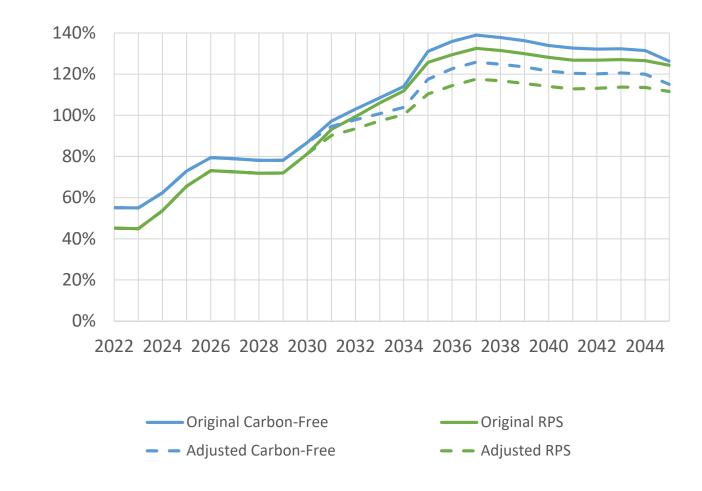






# **Losing Approximately 475 MW of Transmission Import Capability: RPS %**

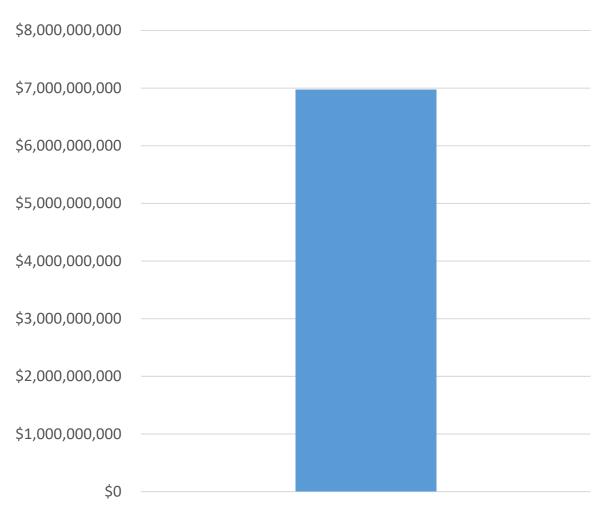
- Additionally, the IRP team studied impact of not completing certain out-of-basin upgrades by 2028, expected to give approximately 475 MW of import capability from out-of-state resources, northeast of L.A.
- The IRP team identified a gradual build of new renewables from 2031-35 that by 2035 reached 475 MW (375 MW of long-duration renewables and 100 MW of wind). We omitted the gradual build through 2035, and omitted full 475 MW thereafter.
- RPS % drops ~15% in 2035, but remains above 100%. Additionally, the carbon-free target is still met.





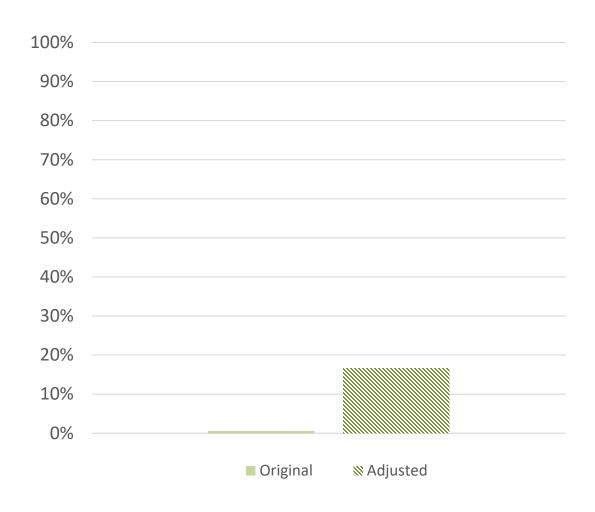
# Losing Approximately 475 MW of Transmission Import Capability: Estimated Costs

- For reliability and meeting load every hour of the day, the lost energy must be replaced. This is likely to occur via inbasin resources that do not need transmission, such as green hydrogen (H2).
- Potential savings: Avoided transmission project costs, avoided renewable contract costs
- Potential costs: Increased green H2 fuel costs
- From 2028-45, the net present value of the additional costs are estimated to be ~\$7 billion



# Losing Approximately 475 MW of Transmission Import Capability: In-Basin Green H2 Utilization

- Originally, the in-basin green H2 resources are expected to operate, on average, ~1% annually under normal system conditions from 2031-45
- In this sensitivity, the in-basin green H2 resources are expected to operate, on average, ~17% annually under normal system conditions from 2031-45
- Use of in-basin green H2 is expected to increase to make up the energy requirements as a result of losing approximately 475 MW of transmission import capability



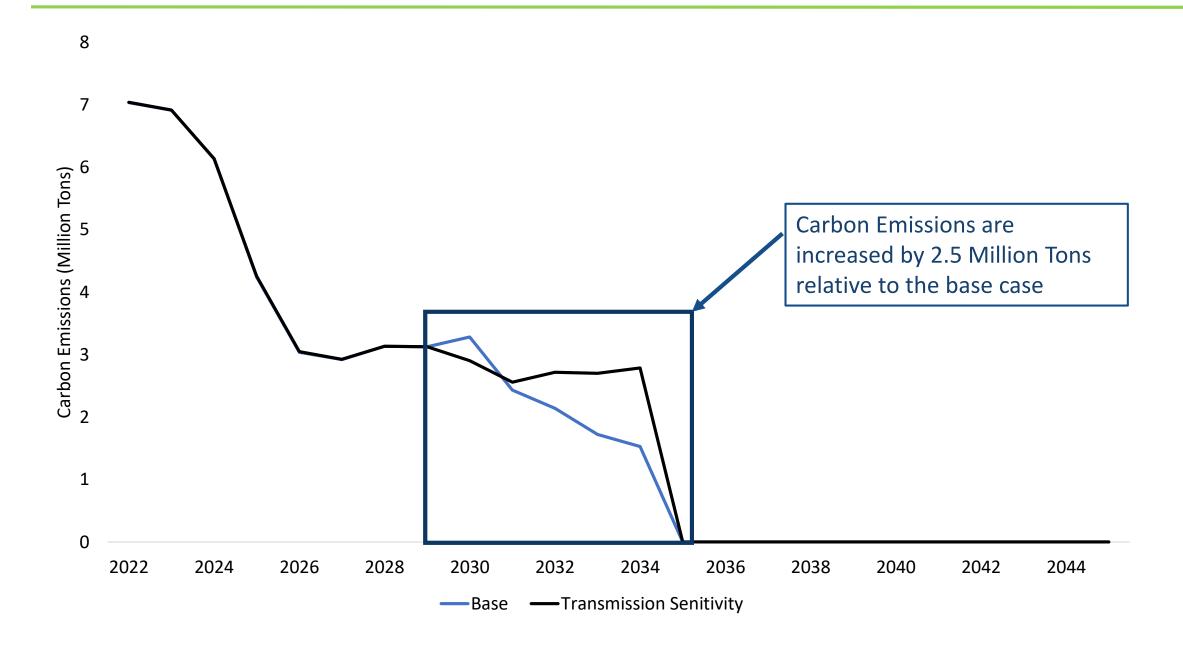


## **Transmission Sensitivity Modeling**

- The goal of the transmission sensitivities is to give an idea of the impact to the DWP system if all transmission upgrades are not completed
- To model the impact of transmission projects, additional in-basing generation was added to ensure DWP had sufficient capacity

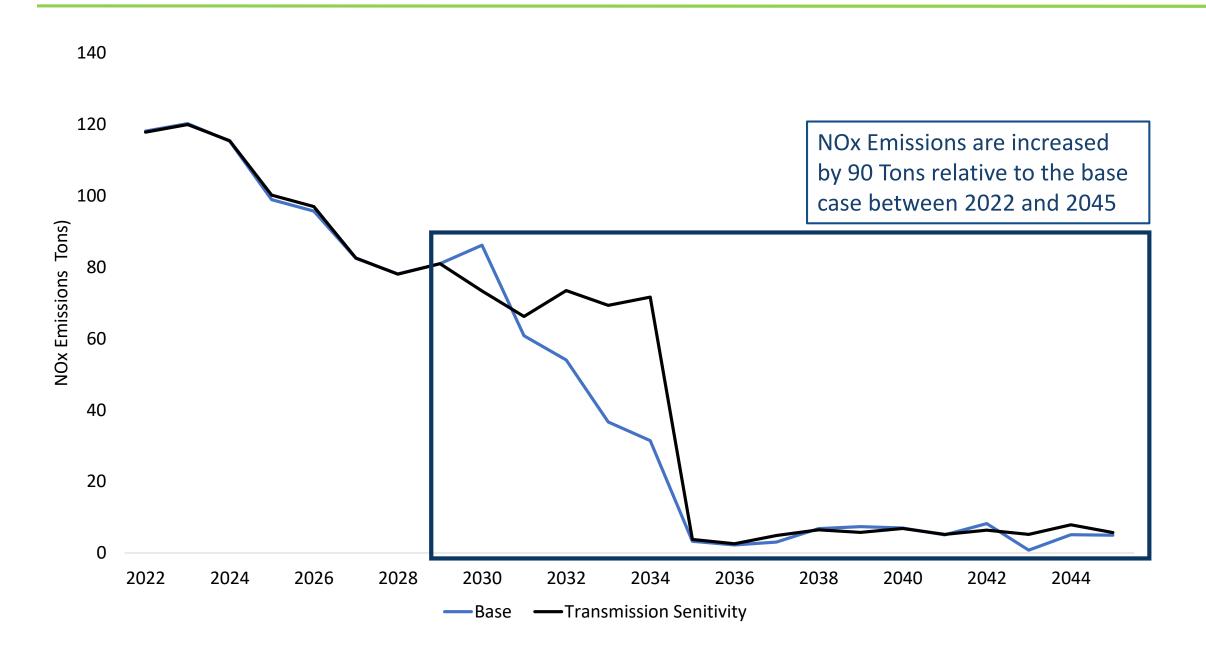
## **Carbon Emissions**





## **In-Basin NOx Emissions**





# Discussion and Q&A



# **SLTRP Key Findings**

Jay Lim, LADWP Manager of Resource Planning



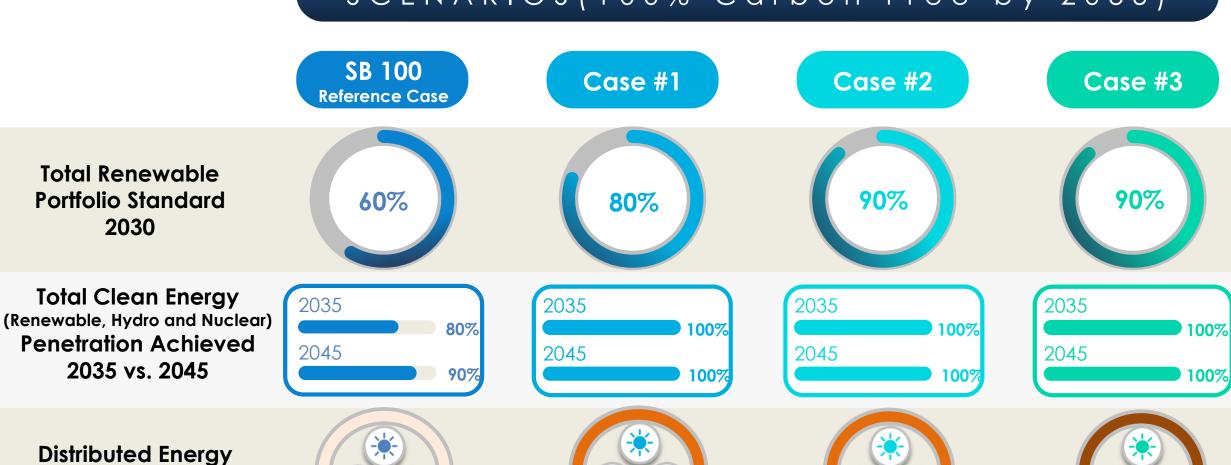




### 2022 STRATEGIC LONG-TERM RESOURCE PLAN (SLTRP) - CORE SCENARIOS



### SCENARIOS (100% Carbon Free by 2035)



Distributed Energy Resource Deployments



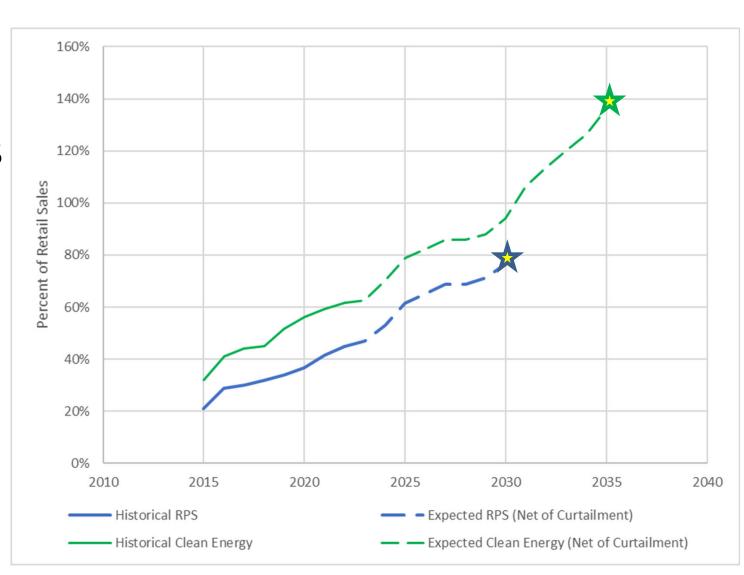






## Historical and Expected RPS and Clean Energy (Draft)

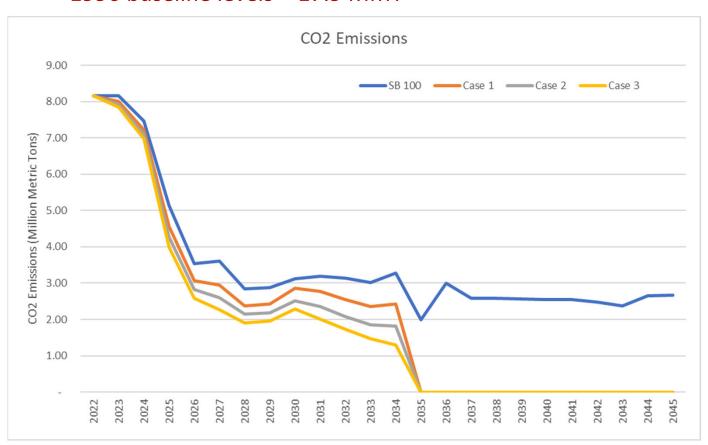
- LADWP is currently at ~43% RPS today and ~62% clean energy
- By 2030, LADWP's goal is to be 80% RPS and 97% clean energy
- SB100 requires 60% RPS by 2030
- Achieving 100% carbon free energy by 2035 will require an overbuild of clean energy resources, approximately 140% of retail sales



## Carbon Emissions (Draft)

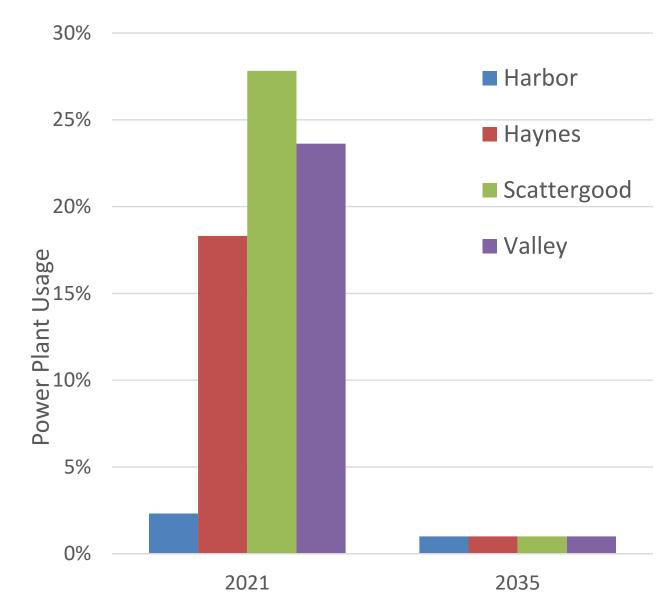
- Like cost, greenhouse gas (GHG)
   emissions were also derived from
   stochastic production cost modeling.
- The Reference Case (SB 100) has the highest emissions.
- The Core Cases (Cases 1-3) all achieve 100% carbon-free energy by January 1, 2035 through a combination of renewables, demand-side management, and the combustion of renewably derived hydrogen.

### 1990 baseline levels = 17.9 MMT



## Forecasted In-Basin Capacity Usage (Draft)

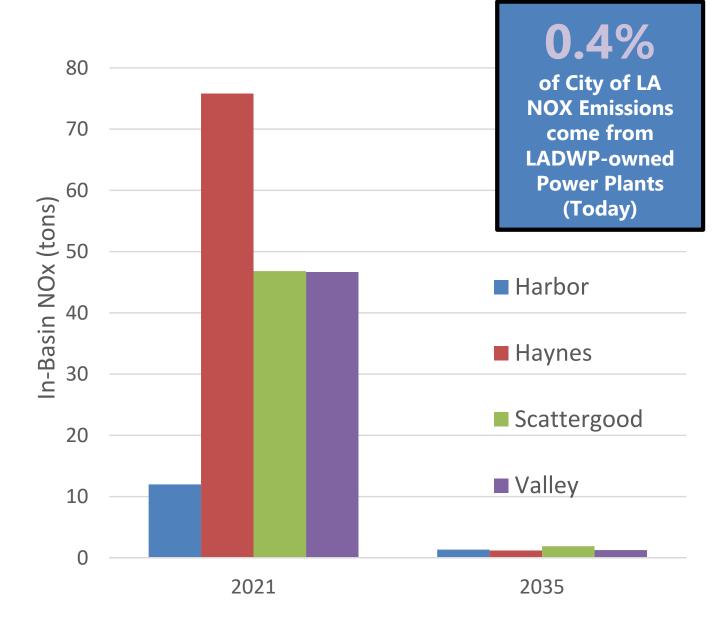
- Although firm, dispatchable generation resources are required to ensure reliability, LADWP's future generating portfolio was designed such that the use of in-basin green hydrogen turbines would be minimized, reducing the impacts of local air pollutants.
- All the in-basin green hydrogen turbines achieve single-digit capacity factors, demonstrating that such units are dispatched exceedingly infrequently and are used primarily as backup during times of low renewable energy output.



Note: 2021 based on actual data and 2035 based on forecasted SLTRP data

## Forecasted In-Basin NOx (Draft)

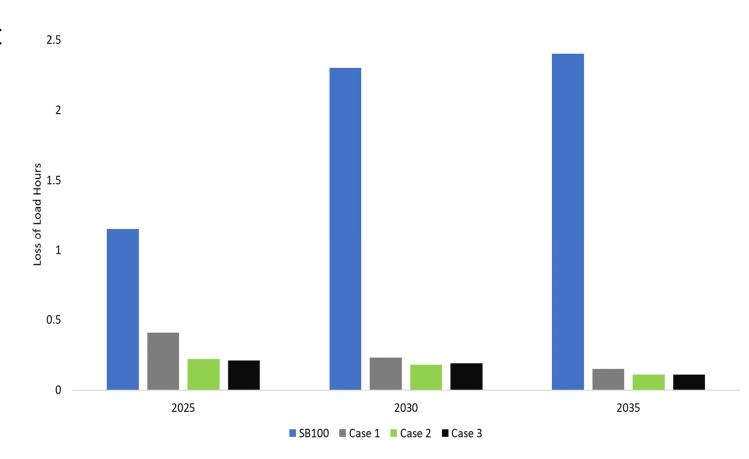
- Today's level of 181 tons of NOx annually declines to single digit NOx levels.
- All new combustion and combined cycle units built in the Los Angeles Basin are required to use the Best Available Control Technology (BACT) to mitigate local air pollutants.
- Low levels of NOx and other local criteria pollutants are thus achieved in-basin.
- The IRP team also examined using fuel cells to eliminate local air pollutants completely.
- Due to the capital costs of fuel cells and the already low quantity of NOx emissions, the cost per ton to remove the last remaining tons of NOx is high.



Note: 2021 based on actual data and 2035 based on forecasted SLTRP data

## Reliability (Draft)

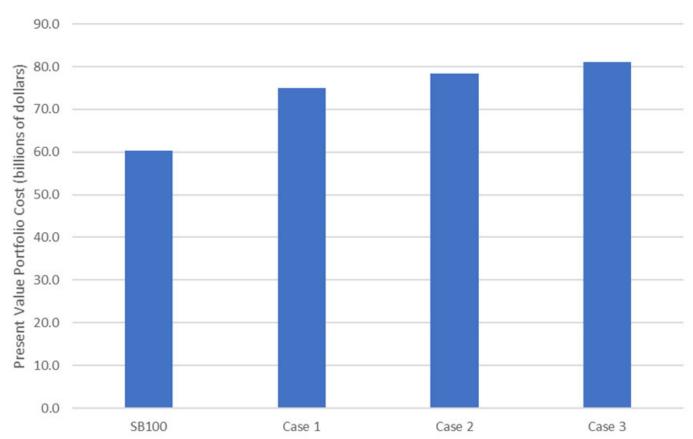
- When an electric utility doesn't have enough generation resources to meet customer during any hour, this is accounted as a "loss of load hour" or LOLH.
- The industry standard is to achieve at or below 2.4 LOLH per year.
- All cases, including the SB 100 case, achieve at or below the industry standard.
- The Core Cases achieve a high degree of reliability, with an LOLH below 0.5.



## Scenario Comparison and Tradeoffs (Draft)

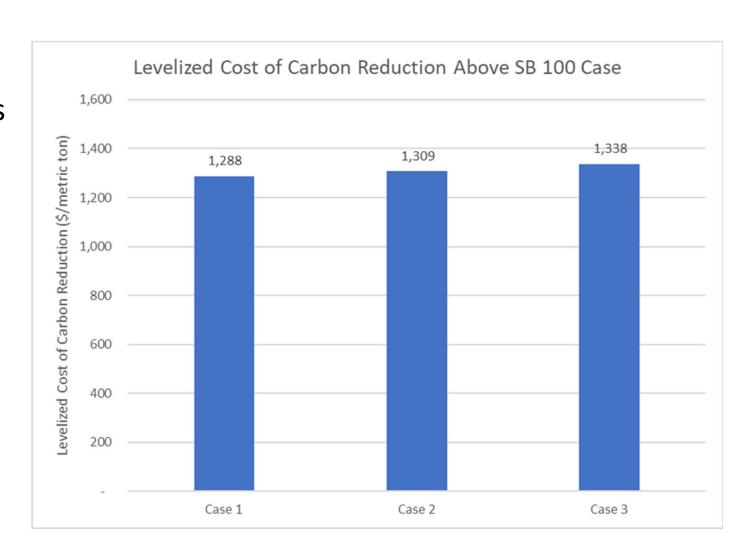
- Portfolio costs are derived from stochastic production cost modeling and are based on the net present value of both fixed and variable costs.
  - Fixed Cost
    - Debt service
    - Capital
    - Fixed O&M
    - Power Purchase Agreements
    - Energy Efficiency
    - Etc.
  - Variable Cost
    - Fuel
    - GHG allowances, NOx credits
    - Variable O&M
    - Etc.





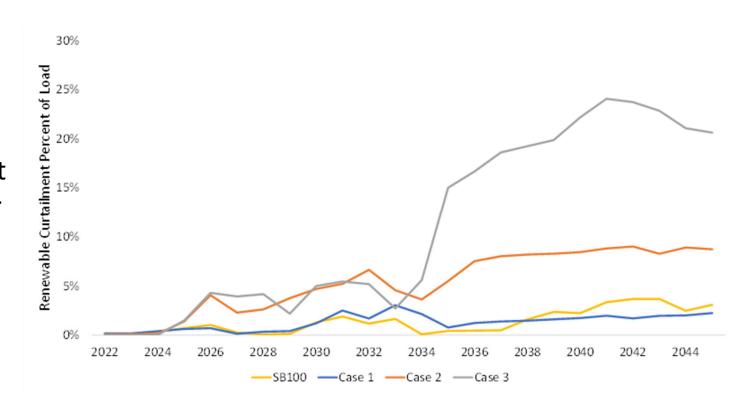
## Incremental Cost per Metric Ton of Carbon Removal (Draft)

- Levelized Cost of Carbon Reduction is a metric used to assess cost effectiveness of clean energy programs
- 2017 SLTRP recommended case included programs that range from an incremental cost of \$12 to \$1,334 per metric ton of carbon removal
- Cap and trade ranges from \$15 to \$100 per metric ton



## Renewable Curtailments (Draft)

- Curtailment of renewable energy primarily occurs in overgeneration situations—when there is more energy being produced than consumed.
- Power purchase agreements (PPAs) for renewable resources typically establish a minimum guaranteed quantity of energy that must be purchased, regardless of whether or not the utility company is able to take delivery of that energy.
- It is therefore advantageous to reduce the quantity of curtailed energy from a renewable energy project, since curtailed energy is energy that has already been paid for but cannot be used.

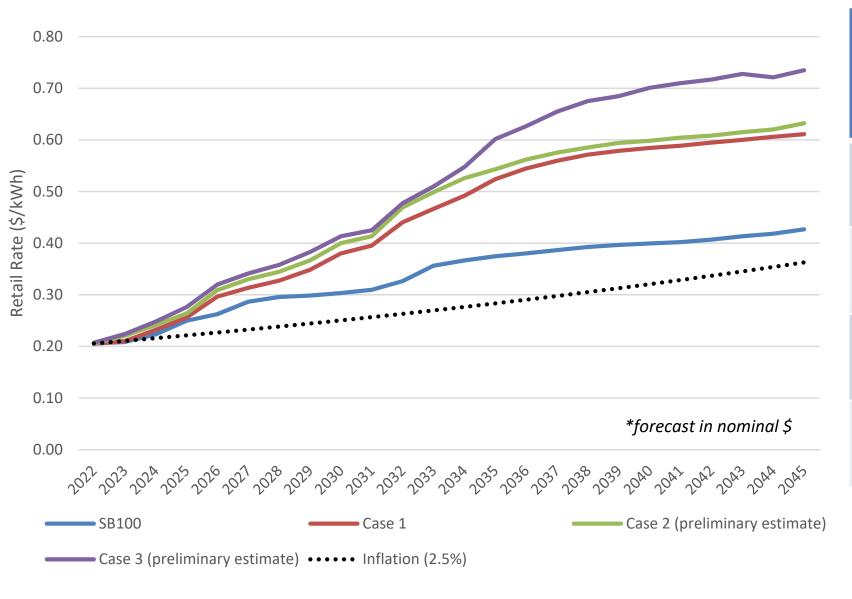


## 2022 SLTRP Rate Drivers (Draft)

Rate Drivers for 100% carbon free by 2035 Cases (updates not included in LA100 Study)	Total Cumulative Cost (2022-2045)
Updated Load Forecast (20% lower in short-term)	Direct impact to rates (\$/kWh)
Power System Reliability Program Revamp	\$22.7 billion
Energy Efficiency Program Cost	\$6.5 billion
Building Electrification Program Cost	\$8.4 billion
Transportation Electrification Program Cost (2022-2030)	\$1.7 billion
IPP Market Purchased Green Hydrogen after 2035	~\$6 billion, depending on operational needs
Strategic Transmission Plan	\$9.9 billion
Staffing for LA100 (2,500 positions)	\$18.1 billion
Total	\$73.3 billion

Department of Energy Funding may potentially reduce some cost elements (e.g. green hydrogen hub)

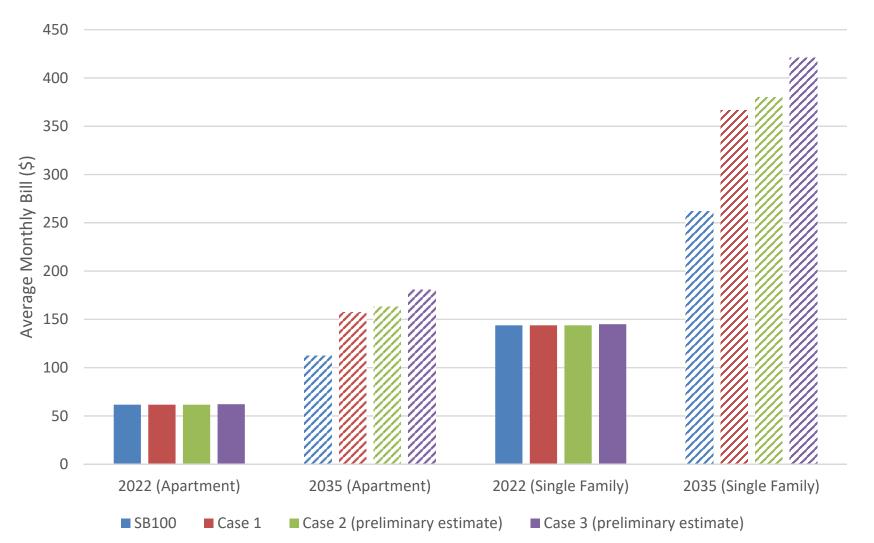
## 2022 SLTRP Rate Comparison (Draft)



2022 SLTRP Scenario	Rate in 2030 and 2035 (cents/kWh)	Est. Avg. Annual Rate Increase (2022-35)	Est. Avg. Annual Rate Increase (2022-45)
SB100	30 (in 2030) 37 (in 2035)	4.78%	3.27%
Case 1	38 (in 2030) 52 (in 2035)	7.52%	4.93%
Case 2	40 (in 2030) 54 (in 2035)	7.83%	5.09%
Case 3	41 (in 2030) 60 (in 2035)	8.60%	5.74%

Note: Rate estimates for Case 2 and 3 are preliminary based on SLTRP modeling data and are subject to change based on detailed rate analysis conducted by Financial Services Organization

## Monthly Bill Impacts (assuming 300 and 700 kWh/month) (Draft)

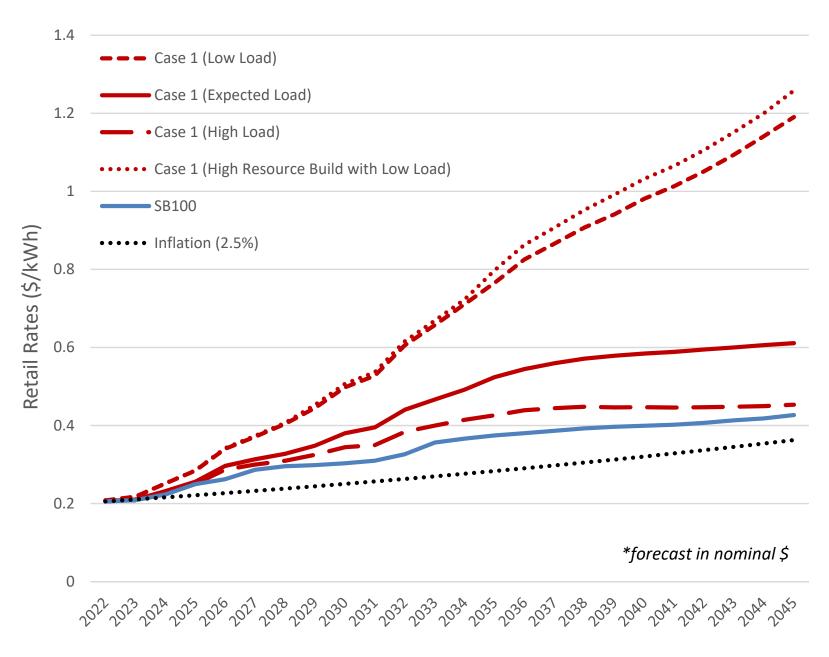


2022 SLTRP Scenario	Average Monthly Customer Bill in 2035 (Apartment)	Average Monthly Customer Bill in 2035 (Single Family)
SB100	\$112 (81% increase)	\$262 (81% increase)
Case 1	\$157 (153% increase)	\$367 (153% increase)
Case 2	\$163 (163% increase)	\$380 (163% increase)
Case 3	\$180 (190% increase)	\$421 (190% increase)

Note: Rate estimates for Case 2 and 3 are preliminary based on SLTRP modeling data and are subject to change based on detailed rate analysis conducted by Financial Services Organization

Average monthly bill in 2022 is \$62/month and \$144/month for apartment and single family home, respectively

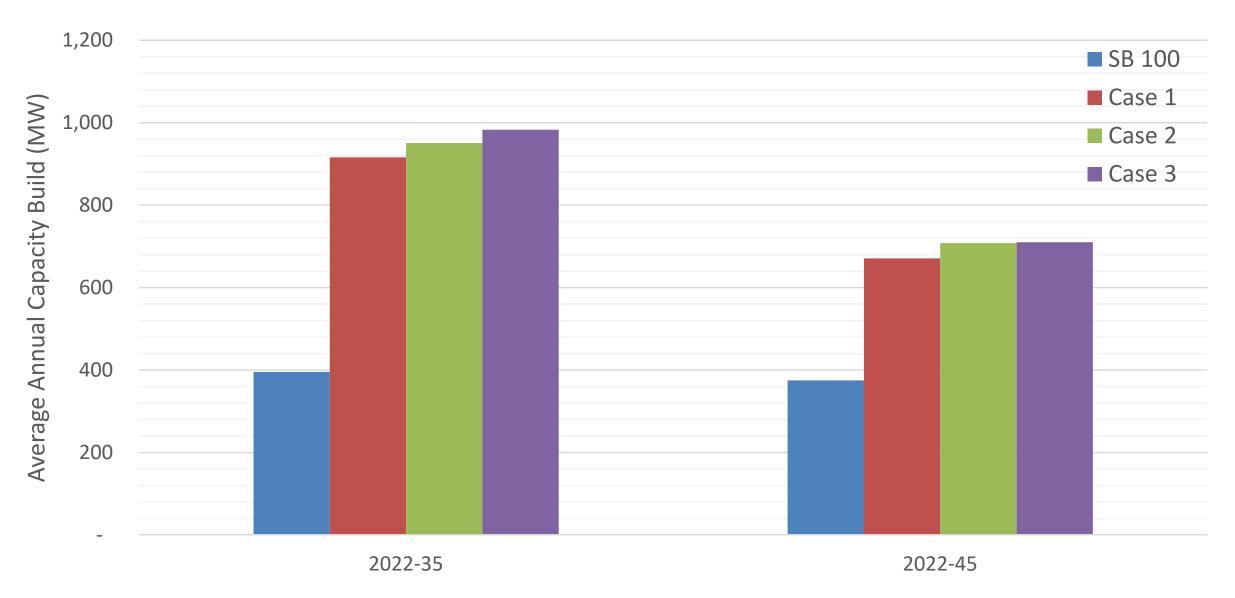
## **2022 SLTRP Load Sensitivities (Draft)**



2022 SLTRP Scenario	Rate in 2030 and 2035 (cents/kWh)	Est. Avg. Annual Rate Increase (2022-35)	Est. Avg. Annual Rate Increase (2022-45)
SB100	30 (in 2030) 37 (in 2035)	4.78%	3.27%
Case 1 (Low Load)	50 (in 2030) 77 (in 2035)	10.61%	7.96%
Case 1 (Expected Load)	38 (in 2030) 52 (in 2035)	7.52%	4.93%
Case 1 (High Load)	34 (in 2030) 43 (in 2035)	5.74%	3.51%
Case 1 (High Resource Build with Low Load)	51 (in 2030) 80 (in 2035)	10.96%	8.23%

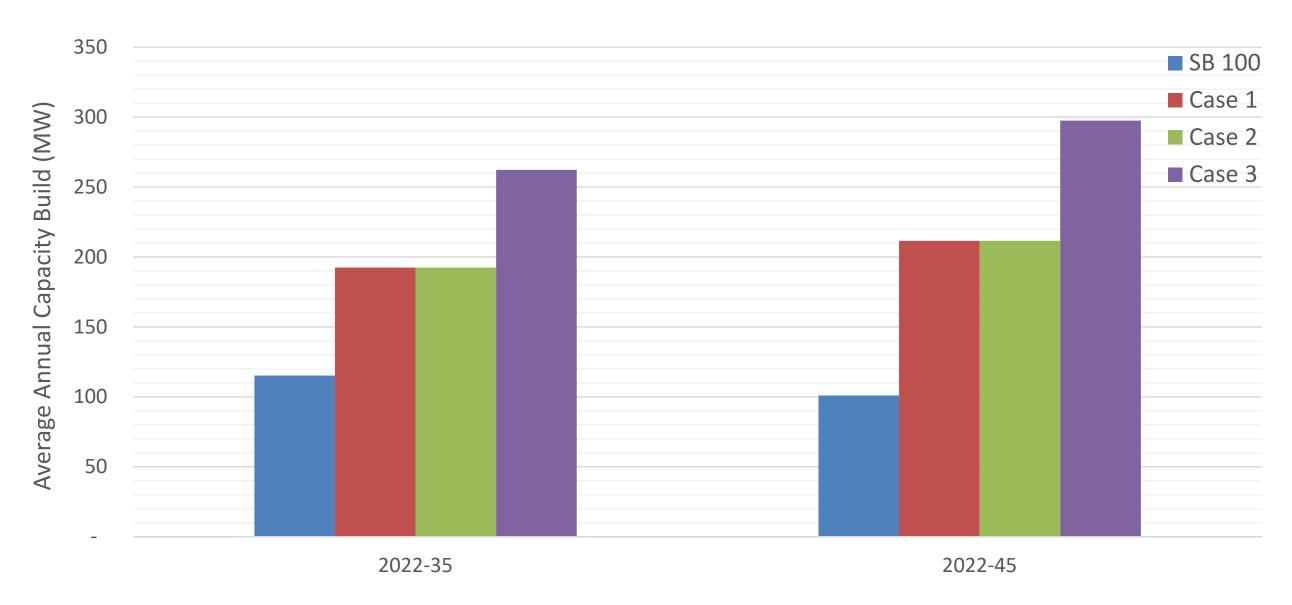
Note: Rate sensitivities are preliminary based on SLTRP modeling data and are subject to change based on detailed rate analysis conducted by Financial Services Organization

## Total Build Rate Comparison (2035 and 2045) – Bulk Power (Draft)



Note: Average build rate for last 4 years was 200 MW/year

## Total Build Rate Comparison (2035 and 2045) - DERs (Draft)



Note: Average build rate for last 4 years was 50 to 75 MW/year

# Discussion and Q&A



## **Community Meetings**

Stephanie Spicer, LADWP Community Affairs Manager







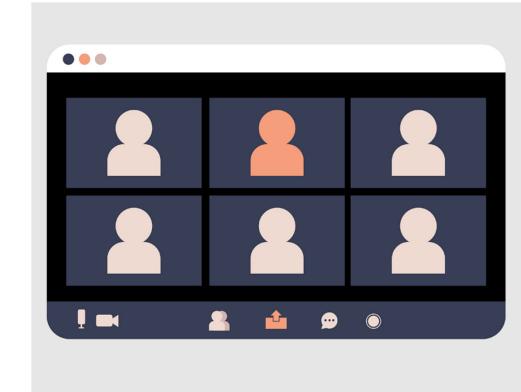
# 2022 SLTRP Public Outreach Meetings

DATES	Meeting Description and Content (Topics to be covered)
August 30, September 1, and 7 @ 6pm	<ul> <li>Power System Overview: LADWP Overview and Recent Accomplishments, LA100 Key Findings and Next Steps, 2022 SLTRP Orientation, Key Considerations</li> <li>2022 SLTRP Preliminary and Sensitivity Results: SLTRP Case Scenarios and Sensitivities, Modeling Framework, Preliminary Results and Tradeoffs, Implementation and Considerations for Risk Factors</li> <li>Q&amp;A and Discussion</li> </ul>

Additional Meeting Series targeted for October 2022 once a 2022 SLTRP Recommended Case is approved

# **Meeting Details**

- August 30, September 1 and 7
   6 pm 7:30 pm
- Virtual Registration Required
- Bilingual Slides/Simultaneous Interpretation
- Facilitated Q&A
- Recorded



## **Outreach Tools**

- Video (Vimeo)
- Website: Outreach Toolkit
- Traditional Media/Press Release
- Social Media, Nextdoor
- Email/E-Newsletters:
   Customer Newsletter & Community Newsletter



### **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.

### Community Meetings: Our Clean Energy Future is Now

Join us to learn more about the paths under consideration for reaching 100% carbon-free energy for L.A. and provide input on the 2022 Power Strategic Long-Term Resource Plan.

Registration Required.

Tues, 8/30 at 6 p.m. Register 
Thurs, 9/1 at 6 p.m. Register 
Wed, 9/7 at 6 p.m. Register 

Wed, 9/7 at 6 p.m. Register 

Thurs, 9/1 at 6 p.m. Register 

Thurs, 8/30 at 6 p.m. Register 

Thurs, 8/30 at 6 p.m. Register 

Thurs, 8/30 at 6 p.m. Register 

Thurs, 9/1 at 6 p.m. Register

More Info

### Energía

Pasado y presente

Hechos y cifras

Etiqueta del Contenido de Energía

Futuro de Energía Limpia

### Plan para recursos energéticos

Documentos

Preguntas frecuentes

Confiabilidad de la energía

Plan de Mitigación de Incendios Forestales

Calidad de la energía

Energía renovable

Provectos

### Plan para recursos energéticos



El futuro energético de Los Ángeles está guiado por el Plan Estratégico de Recursos a Largo Plazo (SLTRP), un documento guía para proporcionar electricidad confiable y sostenible a nuestros clientes con un horizonte de planificación de 25 años, al tiempo que hace la transición a un suministro de energía 100% libre de carbono para 2035. El SLTRP se actualiza periódicamente e incorpora aportaciones de la comunidad a través de un sólido alcance y participación.

### Reuniones Comunitarias: Nuestro Futuro de Energía Limpia Esta Aquí

Acompáñenos para aprender más acerca de los caminos bajo consideración para cumplir con energía 100% sin carbono para Los Angeles y dar su dar comentario en l Plan de Estratégico de Recursos de Energía a Largo Plazo 2022 (SLTRP, por sus siglas en ingles).

Registración requerido. Intérprete simultaneo de inglés a español disponible.

Más Detalles



Meeting Registration



Topic	2022 Power Strategic Long-Term Resource Plan Community Meeting - Aug 30, 2022		
Description	Join us for virtual community meetings to learn more about the paths under consideration for reaching 100% carbon-free energy for L.A. and provide input on the 2022 Power Strategic Long-Term Resource Plan. English-Spanish simultaneous interpretation available for all meetings. Meeting registration is required to participate.		
	Learn more at: ladwp.com/SLTRP  Acompáñenos para reuniones comunitarias virtuales para bajo consideración para alcanzar 100% energía sin carbor comentario en la el Plan de Estratégico de Recursos de Er (SLTRP, por sus siglas en ingles). Intérprete simultaneo de en todas las reuniones. Registración para la(s) reunión(es)  Para más información: ladwp.com/SLTRP	no para Los Ángeles y dar su nergía a Largo Plazo 2022 ingles a español será disponible	
Time	Aug 30, 2022 06:00 PM in Pacific Time (US and Canada)		
First Name*		Last Name	
Email Addres	s*	Confirm Email Address*	

Will you need Spanish interpretation to participate? /

¿Necesitará interpretación en español para participar?

Choose One...

# **Follow Us and Share**



Join us for virtual community meetings to learn more about the paths under consideration for reaching 100% carbon-free energy for L.A. and provide input on the 2022 Power Strategic Long-Term Resource Plan.



6 p.m. - 7:30 p.m.



6 p.m. - 7:30 p.m.



6 p.m. - 7:30 p.m.

English-Spanish simultaneous interpretation available for all meetings.

#### REGISTER at www.ladwp.com/SLTRP

What is the 2022 Power Strategic Long-Term Resource Plan (SLTRP)?

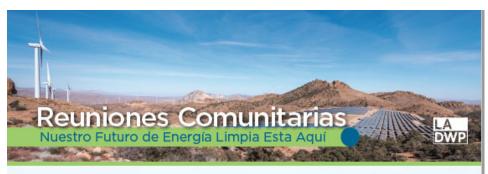
LADWP's Strategic Long-Term Resource Plan (SLTRP) is a comprehensive power system resource plan to meet L.A.'s future energy needs, regulatory mandates and clean energy goals, while maintaining reliable and affordable power for our customers. The 2022 SLTRP will recommend a path that will achieve 100% carbon-free energy for L.A. by 2035, with an outlook through 2045, informed by related planning efforts for transmission and distribution infrastructure, renewable energy resources, human resources, and rate impacts, among other considerations.

Our Clean Energy Future Is Now

Community Meetings: August 30, September 1 & 7

ladwp.com/SLTRP





Acompáñenos para reuniones comunitarias virtuales para aprender más de los caminos bajo consideración para alcanzar 100% energía sin carbono para Los Ángeles y dar su comentario en el Plan de Estratégico de Recursos de Energía a Largo Plazo 2022 (SLTRP, por sus siglas en ingles).

agosto

30

martes

6 p.m. - 7:30 p.m.

septiembre

jueves

6 p.m. - 7:30 p.m.

septlembre

//
miércoles

6 p.m. – 7:30 p.m.

Intérprete simultaneo de ingles a español será disponible en todas las reuniones.

### REGISTRESE en www.ladwp.com/SLTRP

¿Qué es el Plan de Estratégico de Recursos de Energía a Largo Plazo 2022?

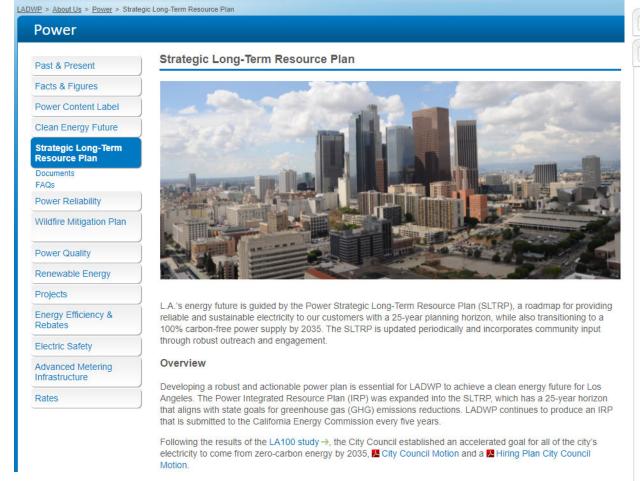
El Plan de Estratégico de Recursos de Energía a Largo Plazo del Departamento de Agua y Energía de Los Ángeles es el plan comprensivo de recursos del sistema de energía para cumplir con las necesidades eléctricos futuros de Los Ángeles, requisitos regulatorios y las metas de energía limpia mientras manteniendo la electricidad fiable y económico para nuestros clientes. El SLTRP de 2022 recomendará un camino que cumplirá con energía 100% sin carbono por 2035, con una perspectiva hasta 2045, informado por otros esfuerzos de planificación relacionados para infraestructura de transmisión y distribución, recursos de energía renovable, recursos humanos, e impactos a tarifas, así como otras consideraciones.

# Discussion and Q&A



## **Communications & Public Affairs**

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



+ Advisory Group

- AG Meetings and Presentations

### Advisory Group Meeting #8 (April 28, 2022)

- SLTRP Agenda Meeting #8
- LSLTRP 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
- Z022 SLTRP Presentation
- LA100 SLTRP NREL Presentation



