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**BEFORE THE ENERGY COMMISSION
OF THE STATE OF CALIFORNIA**

IN THE MATTER OF:) Docket No. 23-SB-100
)
Senate Bill 100 Joint Agency Report) NOTICE OF EXTENSION OF PUBLIC
) COMMENT PERIOD
)
)
) RE: Senate Bill 100 Kickoff
) Workshop

**COMMENTS FROM THE LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) TO THE
CALIFORNIA ENERGY COMMISSION ON THE SENATE BILL 100 KICKOFF WORKSHOP**

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Dated: September 7, 2023

**BEFORE THE ENERGY COMMISSION
OF THE STATE OF CALIFORNIA**

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**COMMENTS FROM THE LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP) TO THE
CALIFORNIA ENERGY COMMISSION ON THE 2025 SENATE BILL 100 KICKOFF WORKSHOP**

LADWP appreciates the California Energy Commission (CEC), California Public Utilities Commission, and California Air Resources Board (together, the “Joint Agencies”) for their ongoing work on Senate Bill 100 (SB 100). LADWP looks forward to collaborating with State Agencies, Balancing Authorities, and Publicly-Owned and Investor-Owned Utilities to determine how best to operate a reliable system that represents actual system operations as part of the upcoming 2025 SB 100 Joint Agency Report.

LADWP is fully committed to working with State Agencies to achieve the goals of SB 100 to equitably and sustainably reduce greenhouse gas (GHG) emissions and maintain reliability and resiliency to the grid while minimizing costs to customers. LADWP appreciates the opportunity to submit the following written comments on the August 22, 2023, kickoff workshop and to provide feedback on the 2025 SB 100 Report.

Introduction

The City of Los Angeles (City of LA) is a municipal corporation and charter city organized under the provisions set forth in the California Constitution. LADWP is a proprietary department of the City of LA, pursuant to the Los Angeles City Charter, whose governing structure includes a Mayor, a fifteen-member City Council, and a five-member Board of Water and Power Commissioners. LADWP is the third largest electric utility in the state, one of five California Balancing Authorities (BAs), and the nation’s largest municipal utility, serving a population of over four million people within a 478 square mile service territory that covers the City of LA and portions of the Owens Valley. LADWP exists to support the growth and vitality of the City of LA, its residents, businesses and the communities we serve, providing safe, reliable and cost-effective water and power in a customer-focused and environmentally responsible manner.

LADWP is the nation's largest municipal power utility, with a net maximum plant capacity of 10,664 megawatts (MW) and a net dependable capacity of 8,058 MW as of August 31, 2022. In fiscal year 2021-22, LADWP supplied more than 21,400 gigawatt-hours of power to approximately 1.6 million electric service customers, including 5,424 in the Owens Valley. LADWP maintains a diverse and vertically integrated power generation, transmission, and distribution system that spans five Western states and delivers reliable, cost-efficient power to more than 4 million people in the City of LA. Furthermore, in 2021, LADWP completed the Los Angeles 100% Renewable Energy Study (LA100) in partnership with the U.S. Department of Energy's National Renewable Energy Laboratory, outlining how LADWP could achieve 100% clean energy. Below are LADWP's specific comments for the Joint Agency's consideration.

Specific Comments

1. Adaptation of Transmission Systems Must Be Contemplated and Studied in All Scenarios

Tailoring the buildout of transmission systems to each of the various proposed SB 100 pathways is essential. This need becomes particularly pronounced if certain supply resource builds require more transmission infrastructure. Pathways with less dispatchable capacity could require more transmission infrastructure to maintain reliability and resiliency, especially during extreme events like wildfires or earthquakes.

2. Adaptation of Distribution Systems to Integrate Electrification Load and Distributed Energy Resources (DERs) Must Be Evaluated Due to Potentially Significant Cost and Impact

It is critical to factor in the extra costs and improvements needed for the SB 100 pathways that put a higher demand on the distribution system, especially in the context of SB 100 modeling. The SB 100 pathways proposed should allow for different distribution setups, costs, and needs. This need becomes even more pronounced when considering the likely increase in DERs across California and the state's ambitious plans for transitioning to electric transportation. This expected transformation suggests that California's utility distribution systems must be enhanced to effectively handle the added load and integration of DERs. This transformation could lead to significant cost differences compared to a conventional business-as-usual approach.

Historical SB 100 studies have inadvertently overlooked the considerable upgrades and associated costs required to rectify distribution system overloads to achieve different modeled pathways. These upgrades are essential to bring the system to a level where it can efficiently handle the ambitious goals of electrifying transportation. In addition, the upgrades are crucial for rapidly reducing California's carbon footprint while keeping electricity rates affordable. Therefore, studies should be done to determine how best to upgrade the distribution system for incorporating DERs to complement the buildout of the transmission for a holistic approach to planning out a reliable system.

3. LADWP Recommends that the CEC Expands its Methodologies Used to Evaluate Hydrogen in Production Cost Models

Incorporating realistic constraints to hydrogen creation, supply, storage, and transmission for power-generation purposes would greatly enhance the value of the SB 100 modeling efforts. This becomes crucial as developing the required infrastructure poses a tangible and significant implementation challenge.

It is also important to recognize that the methodology used to model hydrogen can significantly impact overall modeling results and outcomes. When it comes to modeling hydrogen, it would be insightful to deliberate on the advantages and disadvantages inherent to the different methodologies available to model hydrogen in production cost models. Some of these methodologies include modeling hydrogen as a self-produced fuel resulting from electrolysis powered by renewable energy or modeling hydrogen as a market-purchased fuel, among others.

- **Self-Produced Hydrogen:** self-produced hydrogen might involve substantial initial capital expenditures for electrolyzers and other essential infrastructure, increased costs for renewable energy power purchase agreements (as a result of increased renewable energy procurement to use as feedstock for green hydrogen creation via electrolysis), and other expenditures. However, the subsequent variable cost of hydrogen-fueled generating units could decrease significantly on a dollar-per-megawatt-hour basis once hydrogen production is achieved. This achievement could result in this production cost model frequently dispatching hydrogen-fueled generating units rather than using them as backup generators for intermittent renewables.
- **Market-Purchased Hydrogen:** assuming hydrogen becomes a readily available commodity delivered directly to power-generating units via pipelines, akin to the current setup with natural gas units, the capital expenditures for market-purchased hydrogen will be virtually negligible. However, the potentially high cost of hydrogen fuel would result in a high variable operational cost. Consequently, this would influence the dispatch of hydrogen-fueled units, leading to their limited utilization or them being used primarily for operating reserves.

4. LADWP Recommends that the CEC Consider Implementation Feasibility and Resource Allocation, Such as Workforce and Land-Use Needs and Constraints

When considering the practicality of implementation, the CEC should consider the workforce needs required to build out the clean energy infrastructure suggested by the contemplated SB 100 pathways. Additionally, if California aims to formulate a pragmatic and actionable SB 100 implementation plan, the CEC should also consider metrics such as the number of full-time

equivalents, the duration of permitting processes for projects like transmission infrastructure, and the scheduling of the necessary equipment outages and resulting reliability impacts, among others, if feasible.

After determining statewide workforce needs, the CEC should incorporate labor shortages as a key risk or sensitivity in its feasibility assessments. LADWP is currently experiencing severe workforce shortages; presumably, the rest of California may also see a labor constraint in realizing SB 100 goals. LADWP recently completed its draft Integrated Human Resource Plan, identifying the need to hire thousands of key positions to achieve the City of LA's clean energy goals.

In addition, the CEC should rigorously assess future land use constraints that may limit utility-scale renewables and transmission projects. Given its urban environment, LADWP will rely primarily on importing renewable energy sources outside the City of LA's boundaries. If land becomes increasingly difficult to acquire, utilities must plan their long-term resource plans accordingly.

While some stakeholders advocate for an accelerated pathway that prioritizes rapid implementation, scenarios that account for labor and other resource constraints are also worth considering. Unless California can proactively augment the availability of shrinking resources like labor and land, California utilities will eventually compete for these shrinking resources, greatly increasing the cost of deployment. This broader perspective highlights the critical importance of allocating sufficient resources to meet California's ambitious clean energy objectives.

5. LADWP Recommends that the CEC Consider All Key Barriers to Deployment

LADWP recognizes several barriers to deployment which requires careful evaluation, including cost (affordability and equity), funding uncertainty, supply chain, maintaining reliability, resiliency, and dependable capacity while addressing public concerns, and numerous "non-energy" impacts such as land use, biodiversity, air quality, public health and safety, water, and environmental justice.

Since the COVID-19 pandemic, LADWP has faced significant difficulties in deploying clean energy projects, such as supply chain impacts, high interest rates, and affordability and equity challenges. For example, LADWP's Eland Solar and Energy Storage Project was delayed by one year due to supply chain impacts. High interest rates have also resulted in an upward price trend for clean energy resources. These impacts directly impact the Renewables Portfolio Standard (RPS) that LADWP must meet as part of SB 100 (e.g., 44% RPS procurement by 2024). LADWP's goal is to maintain affordability, equity, and reliability for its customers and would appreciate the flexibility to consider these deployment barriers as part of the 2025 SB 100 Joint Agency Report.

California must maintain reliability during its transition to clean energy. However, it is challenging to source dependable capacity. To maintain local reliability, LADWP is phasing out a portion of its fossil generation for green hydrogen combustion systems. Due to Once Through Cooling (OTC) requirements, LADWP must also retire many of its fossil-based coastal generating units. Uncertainty surrounding future green hydrogen maturity, the deadlines imposed by OTC requirements, and public concerns on both natural gas and hydrogen increase the difficulty in achieving a reliable and carbon-free future power system. The CEC should consider policies for extending existing natural gas systems and further incentivizing green hydrogen to de-risk reliability concerns.

Although the “once in a generation” funds from the Bipartisan Infrastructure Law and Inflation Reduction Act (IRA) aim to lower the cost of implementing SB 100 goals, high uncertainty in the details of funding deployment still remains. California will likely administer many IRA programs, including home energy rebates and the \$27 billion GHG reduction fund. However, how much and to what extent funds will reach cities like Los Angeles is unclear. Given the long lead times in power planning, the CEC should frequently and expeditiously update cities and utilities on future federal program outlays to enable accurate SB 100 resource planning.

Lastly, in the SB 100 Workshop, stakeholders and policymakers frequently commented on the desire to analyze “non-energy” impacts such as land use, biodiversity, air quality, public health and safety, water, and environmental justice. However, most utilities make decisions based on minimizing cost and maintaining reliability. Although these impacts are important, they are not traditional utility decision-making factors. These elements are also complex, time-intensive, and, as the CEC admits, impossible to model. LADWP recommends the CEC provide basic prescriptive guidelines towards “non-energy” impacts to ensure uniform compliance across California and to minimize the burden of additional modeling.

Conclusion

LADWP appreciates the tremendous amount of work and coordination among the Joint Agencies to create the draft SB 100 Report. Thank you for the opportunity to submit these comments. If you have any questions, please contact me at (213) 367-4631 or Mr. Scott Hirashima at (213) 367-0852.

Dated: September 7, 2023

Respectfully Submitted,

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