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Draft 2023 Integrated Energy Policy Report

Additional submitted attachment is included below.

**BEFORE THE STATE OF CALIFORNIA ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

IN THE MATTER OF:)	Docket No. 23-IEPR-01
)	
<i>2023 Integrated Energy Policy Report (2023 IEPR)</i>)	RE: <i>Notice of Availability and Request for Comments on the Draft 2023 Integrated Energy Policy Report</i>
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**COMMENTS FROM THE LOS ANGELES DEPARTMENT OF WATER AND POWER TO THE CALIFORNIA
ENERGY COMMISSION ON THE DRAFT 2023 INTEGRATED ENERGY POLICY REPORT**

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Dated: December 1, 2023

**BEFORE THE STATE OF CALIFORNIA ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

IN THE MATTER OF:)	Docket No. 23-IEPR-01
)	
<i>2023 Integrated Energy Policy Report</i>)	RE: <i>Notice of Availability and</i>
<i>(2023 IEPR)</i>)	<i>Request for Comments on the</i>
)	<i>Draft 2023 Integrated Energy</i>
)	<i>Policy Report</i>
)	
)	

**COMMENTS FROM THE LOS ANGELES DEPARTMENT OF WATER AND POWER TO THE CALIFORNIA
ENERGY COMMISSION ON THE DRAFT 2023 INTEGRATED ENERGY POLICY REPORT**

Introduction

The Los Angeles Department of Water and Power (LADWP) appreciates the California Energy Commission (Commission) for their ongoing efforts to meet the requirements of Senate Bill 1389 of 2002 (SB 1389) in terms of addressing climate change, resource conservation, and energy reliability. LADWP recognizes the challenges of accelerating the connection of new clean resources to the grid to meet the growing energy demands that are described within the *Draft 2023 Integrated Energy Policy Report (IEPR)*, while minimizing costs for LADWP’s customers.

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 commends the Commission on their various energy assessments and forecasts detailed in the IEPR. The IEPR raises awareness of new and ongoing initiatives that aim to address growing problems the industry is facing in the deployment of clean energy resources and provides insightful recommendations to address the challenges identified in the report. LADWP has reviewed the Draft 2023 IEPR and appreciates the opportunity to submit the following written comments.

Specific Comments

1. LADWP Strongly Supports Targeted Support for Publicly-Owned and Cooperative Utilities

In Chapter 1, “Plugging In - Speeding Deployment and Connection of Clean Resources to the Grid”, there are recommendations to provide “targeted support to publicly-owned and cooperative utilities” (e-Page 44), and “improving and expanding the scope of publicly available tools and datasets” (e-Page 61), which LADWP strongly supports. LADWP recently made its Distribution Capacity Maps¹ publicly available to provide information on where capacity is available to guide developer decisions. The Commission may consider developing a centralized site, involving the local regulatory authorities in its implementation. This would remove the administrative burden on the smaller utilities that often lack the resources to develop and maintain their own tools, and provide a common location for developers to access information across utility service territories.

2. Publicly Owned Utility (POU) Perspective on Rate Impacts

For Chapter 1, “Plugging In - Speeding Deployment and Connection of Clean Resources to the Grid”, sub-heading “Annual Reporting on Actions to Limit Utility Cost and Rate Increases” (e-Page 54), while LADWP does not disagree with this paragraph, it and much of the document largely address issues pertaining to investor-owned utilities (IOUs). LADWP’s Board of Water and Power Commissioners is the rate-approving body for LADWP. The second sentence, which states that rate increases have outpaced inflation since 2021, does not hold true for LADWP. LADWP’s rate structure includes pass-through rates and base rates, with base rates designed to recover fixed costs. LADWP’s last rate action, which was effective in fiscal year (FY) 2016, set base rates through FY 2020. Since FY 2020, base rates have remained at the same levels. Though, at the time, there were plans to proceed with a new rate action, due to the pandemic, the rate action was delayed. LADWP will require a new rate action as it proceeds on a path to attain 100% renewable electricity. Also, while LADWP has increased its vegetation management activities, this has not created the same upward pressure on rates as it has for the IOUs.

3. Accuracy of Data and Recommendations Regarding Renewable Hydrogen²

The following bullets contain comments regarding specific sections or statements mentioned in Chapter 2, “Potential Growth of Clean and Renewable Hydrogen”.

- Subsection “State and Federal Initiatives to Advance Hydrogen” (e-Page 68) contains the following sentence: “On October 13, 2023, the U.S. DOE selected California to receive \$1.2 billion to launch a Clean Hydrogen Hub (H2Hub) in California, one of seven H2Hubs selected

¹ Los Angeles Department of Water and Power: Power Capacity
<https://ladwp-power.maps.arcgis.com/apps/webappviewer/index.html?id=290be9aa52694ef39bf3088940079f62>

² All references to ‘hydrogen’ or ‘renewable hydrogen’ are with respect to hydrogen generated by renewable energy.

nationwide”. This should be revised to “... the U.S. DOE selected California to negotiate an award of up to \$1.2 billion”.

- Subsection “Status of Hydrogen Production” (e-Page 70) contains the following sentence: “California is estimated to produce 1.05 million metric tons (million MT) per year of hydrogen, or about 10.5 percent of the national capacity”. It is not clear if this estimation is based on production today or sometime in the future.
- Subsection “Pathways to Use Clean and Renewable” (e-Page 73) contains the following sentence: “Hydrogen combustion, like traditional fossil fuel combustion, produces nitrogen oxides (NOx) emissions — which lead to formation of the health-damaging pollutants, ozone, and particulate matter — that require integrated controls which combustion system manufacturers include on their products”. It might be better to state “...that require integrated controls and purpose-built hydrogen combustors which combustion system manufacturers...”.
- The text box titled “Proposed Utility Hydrogen Projects” (e-Page 73) contains the following sentence: “NCPA is developing the Lodi Hydrogen Center, which includes electrolyzers powered with renewable energy and using recycled water from the City of Lodi that can produce 8,760 MT per year of clean and renewable hydrogen per day”. It is unclear whether the facility can produce 8,760 MT per day or per year based on the language. If per year, then it would be recommended revising to remove “per day.”
- Subsection “Proposed Utility Hydrogen Projects” (e-Page 74) contains the following sentence: “New electricity generating units (840 megawatts [MW]) that replace coal-fueled units are scheduled to begin commercial operation on a 30 percent hydrogen and 70 percent fossil gas blend in July 2025, transitioning to 100 percent hydrogen by 2045.” These units will be capable of blending up to 30% hydrogen with natural gas. However, the cited 2045 date potentially contradicts the following phrase in the subsequent sentence: “... to meet its overall goal of 100 percent clean electricity by 2035.” In light of the above, LADWP recommends revising the sentence as follows: “New electricity generating units (840 megawatts [MW]) that replace coal-fueled units will be capable of operating on a 30 percent hydrogen and 70 percent fossil gas blend in July 2025, with an eventual goal of transitioning to 100 percent hydrogen, as technology and other factors allow.”
- Additionally, subsection “Proposed Utility Hydrogen Projects” (e-Page 74) references several of LADWP’s generating stations.

Among these references is the following sentence: “LADWP has committed \$800 million to convert Units 1 and 2 (346 MW) at the Scattergood Generating Station – LADWP’s largest gas-fired power plant – to 50 percent renewable hydrogen by 2029 with 100 percent by 2035 to

meet its overall goal of 100 percent clean electricity by 2035.” LADWP has identified several inaccuracies in the sentence and proposes recommendations to address them as follows.

- The first is the reference to Scattergood Generating Station as “...LADWP’s largest gas-fired power plant...”. This is incorrect and should be removed.
- The second is the reference to “convert Units 1 and 2 ... at the Scattergood Generating Station ... to 50 percent renewable hydrogen by 2029 with 100 percent by 2035”. This is misleading as LADWP will not “convert” Units 1 and 2, but instead replace the existing generation capacity of Units 1 and 2 with new, modern units, Units 8 and 9, that will have the capability to utilize renewably-derived renewable hydrogen fuel. Additionally, LADWP anticipates incorporating and increasing hydrogen usage as turbine technology and fuel infrastructure continue to improve with a goal of achieving 100 percent carbon-free fueling as soon as it is technically and practically feasible to do so. Scattergood Generating Station Units 8 and 9 will be capable at a minimum of utilizing a 30% hydrogen fuel mix, by volume, upon commissioning. LADWP recommends that the reference to 100 percent by 2035, be removed. LADWP will require the bidders to the proposed project to provide a schedule and roadmap for upgrading to 100% hydrogen-capable turbines by 2035.
- The third reference is “to meet its overall goal of 100 percent clean electricity by 2035”. LADWP embarked on the Los Angeles 100 Percent Renewable Energy Study (LA100) which identified pathways to achieving 100 percent carbon-free energy resource portfolios and developed plans through the 2022 Power Strategic Long-Term Resource Plan (SLTRP). As the Commission’s granularity with respect to LADWP and its plants is inaccurate, LADWP proposes revising this sentence as follows: “... to meet its overall goal of 100 percent clean electricity.”

Additionally, LADWP’s other three generating stations within the Los Angeles Basin are cited as follows: “LADWP hopes to ultimately convert its Harbor Generating Station (in Wilmington at 206 MW), Haynes (in Long Beach at 517 MW), and Valley (in Sun Valley at 517 MW), all used for meeting peak load demand, to clean and renewable hydrogen operation”.

These capacities listed are not correct and reference to them should be removed as it is not certain how much capacity will be “converted” to hydrogen-fueled generation. Additionally, “convert” should be revised to “decarbonize”.

LADWP proposes revising this sentence as follows: “LADWP hopes to similarly decarbonize its Harbor Generating Station (in Wilmington), Haynes (in Long Beach), and Valley (in Sun Valley), all used for firm capacity to ensure system reliability and resiliency”.

- Subsection “Preliminary Analysis of Using Clean and Renewable Hydrogen in Electric Power Generation” (e-Page 79) contains the following sentence: “Based on a high heating value of 141.88 megajoules per kg of hydrogen, it would take about 1.59 million MT to fully replace fossil

gas estimated to be used in the electric sector in 2045. This scenario can be considered as a high bookend of potential growth of hydrogen in the electric power sector”. The value referenced should instead be the lower heating value. Also, a maximum of 60% efficiency should be applied as combined cycles and the most efficient fuel cells currently operate at approximately 60% efficiency. If both mentioned items are taken into account, then the high bookend would be expected to increase.

- Subsection “Preliminary Analysis of Using Clean and Renewable Hydrogen in Electric Power Generation” (e-Page 80) contains the following sentence: “Because of the lower volumetric energy density of hydrogen relative to fossil gas, plants will likely need modifications to accept the higher flow rate of hydrogen compared to fossil gas unless the power plant output is reduced”. There appears to be a typo as “>” is used twice in this line.
- Subsection “When the Hydrogen Is Needed Will Impact Electrolyzer and Storage Requirements” (e-Page 81) contains the following sentence: “The large volumes of hydrogen considered in these scenarios would require a hydrogen pipeline or sequential deliveries via truck, which may not be a feasible option for power plants”. The language should be revised to express more emphasis on why deliveries via truck are not a feasible option for utility-scale power plants. For example, a single utility-scale gas turbine consuming 100 percent hydrogen will require five liquid hydrogen trucks per hour or 40 gaseous hydrogen trucks per hour.
- In subsection “Future Analyses and Barriers That Need to be Addressed,” (e-Page 82), in regards to the bullet “Emissions and equity considerations”, the latest research suggests that NOx emissions will stay the same or be slightly reduced, using technologies for NOx reduction during and after combustion. This will result in NOx emissions released to the atmosphere to be similar or less than emissions rates observed today for modern gas-fueled units. Similarly, the statement, “Combusting hydrogen can result in greater NOx emissions”, can be misleading, as technology exists to reduce NOx during combustion and after. Recent studies demonstrate that blending doesn’t only maintain NOx emissions levels, but may also reduce NOx, CO, hydrocarbons and other pollutants. Siemen Energy’s demonstration test at Constellation Hillabee, operating at 38% hydrogen, did not increase NOx emissions³.

Conclusion

LADWP recognizes and appreciates the considerable amount of work and research the Commission took to develop and create the Draft 2023 IEPR. Thank you for the opportunity to submit these comments. If you have any questions, please contact me at (213) 367-4631 or Mr. Rockeish Mckenzie at (213) 367-4341.

³ Constellation Sets Industry Record for Blending Hydrogen with Natural Gas to Further Reduce Emissions (2023)
<https://www.constellationenergy.com/newsroom/2023/Constellation-sets-industry-record-for-blending-hydrogen-with-natural-gas-to-further-reduce-emissions.html>

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Respectfully Submitted,

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