

Statement of Nancy Sutley
Senior Assistant General Manager of External and Regulatory Affairs
Chief Sustainability Officer
Los Angeles Department of Water and Power
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Hearing on “Keeping the Lights On: Strategies for Grid Resilience and Reliability”
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Chair Castor, Ranking Member Graves and Members of the Committee: I am Nancy Sutley, Senior Assistant General Manager of External and Regulatory Affairs and Chief Sustainability Officer at the Los Angeles Department of Water and Power. I am grateful for this opportunity to appear before you at this important hearing, “Keeping the Lights On: Strategies for Grid Resilience and Reliability.”

The Los Angeles Department of Water and Power (LADWP) is the nation’s largest municipally-owned utility, with 10,454 megawatts of electric capacity and serving an average of 435 million gallons of water per day to the more than 4 million residents of Los Angeles, California, its businesses and visitors. For more than 100 years, LADWP has provided the City of Los Angeles with reliable water and power service in a cost-effective and environmentally responsible manner. With a workforce of more than 11,000 employees, LADWP is guided by a five-member Board of Water and Power Commissioners, appointed by the Mayor of Los Angeles and confirmed by the Los Angeles City Council.

LADWP’s power system is a vertically integrated power generation, transmission and distribution system that spans five Western states and delivers electricity to more than 1.5 million residential and business customers. In Fiscal Year 2019-2020, we supplied more than 21,130 gigawatt hours (GWh) to our customers – businesses, industry and government agencies consumed about 62 percent of the electricity, while residents constituted 90 percent of total customers. LADWP’s generation capacity is made up of a diverse mix of energy resources, including 37 percent renewable energy (solar, wind and geothermal) in 2020. LADWP also has about 4000 miles of overhead transmission circuits and over 100 miles of underground transmission circuits and, as its own balancing authority, operates its own transmission grid.

Today’s topic of strategies for grid resilience and reliability is incredibly important to LADWP and Los Angeles. A reliable and resilient electric grid is essential for a strong and vibrant Los Angeles. LADWP’s power reliability continues to beat national norms for both interruption frequency and duration indices, which are reported by most U.S. electric utilities. Through the Power System Reliability Program, we continue to invest significantly in our power infrastructure, replacing aging electrical equipment and upgrading undersized ones.

Impacts of a changing climate affect the reliability and resilience of LADWP’s electric grid. As Los Angeles Mayor Eric Garcetti said when he appeared before this committee last summer, “we now live with the ever-present threat of longer wildfire seasons; with more days of

extreme heat; with prolonged drought conditions”. For example, in July 2018, Los Angeles experienced record-breaking heat, not only in the typically hotter San Fernando Valley, but temperatures in downtown Los Angeles reached 108 degrees. And in the summer of 2020, California experienced its worst heat wave in more than a decade. During that time, LADWP was able to provide surplus power to the California Independent System Operator to support the electrical grid in other parts of California. LADWP has had enough electrical generating capacity to meet its needs on the highest demand days, the Power Supply Reliability Program investments have strengthened the grid, and power system crews work around the clock to keep the power on but sustained heat waves drive soaring demand for electricity and strain on electrical cables and distributing stations. That can lead to power outages. When it does not cool down at night during a heatwave, higher nighttime temperatures can further tax equipment and potentially cause more or longer outages.

Los Angeles’ grid is also threatened by more frequent and intense wildfires. Wildfires pose a significant threat to public safety - directly and also because of their impact on the electrical grid. Over the past several years, California has experienced its largest fire seasons on record and the fire danger is magnified by higher temperatures, high winds, drier conditions and drought. Wildfire can damage the electrical grid –potentially putting power lines out of service for days or weeks. For example, in 2019, the Saddleridge Fire burned in an area with three major transmission corridors that bring electricity into the Los Angeles basin, reducing power imports. Fortunately, temperatures were cool, electrical demand was low but LADWP came within 135 megawatts (MW) of shedding load. Like other California electric utilities, LADWP prepares and implements a wildfire mitigation plan which includes system hardening, vegetation management, operating protocols and maintenance programs.

While we work every day to ensure our electricity grid is reliable, resilient and affordable, LADWP is transforming its electric grid to 100 percent clean energy to support the City of Los Angeles’ decarbonization goals. LADWP’s strategy -- to expand renewable energy, replace coal with clean energy, transform local generation, upgrade transmission, develop energy storage systems, invest in distributed energy resources like rooftop and other local solar, help our customers use electricity more efficiently and support the electrification of vehicles and buildings -- is dramatically reducing our greenhouse gas emissions. By the end of 2019, LADWP reduced its greenhouse gas emissions from electricity generation by approximately 56 percent below our 1990 levels, all while maintaining power rates that are competitive, and generally lower than in other cities in California. Through the remainder of this decade, Los Angeles’ goals include providing an energy mix that is 80 percent renewable and 97 percent carbon--free resources by 2030 on the way to a 100 percent clean energy grid.

To understand the pathways to 100 percent clean energy for LADWP, the National Renewable Energy Laboratory completed its LADWP’s 100 Percent Renewables (LA100) Study in March 2021. <https://www.nrel.gov/analysis/los-angeles-100-percent-renewable-study.html> This in-depth and sophisticated analysis studied various scenarios to achieve a 100 percent renewable energy grid while prioritizing reliability, equity and affordable rates for our customers. NREL’s LA100 study showed multiple paths for LADWP to achieve a 100 percent

renewable and carbon-free grid and by as early as 2035. Following the release of the LA100 Study, Los Angeles Mayor Garcetti and the City Council committed LADWP to achieve 100 percent carbon free energy by 2035. LADWP's zero carbon grid will also enable deep decarbonization and reduction in air pollution, including nitrogen oxides and fine particulate emissions coming from other sectors of the economy through electrification of end-uses such as transportation and buildings, improving the health of Angelenos.

This 2035 carbon-free scenario includes significant rapid increase in the deployment of renewable and zero-carbon resources and shows that wind and solar resources, enabled with energy storage, are fundamental to providing the majority of energy required to meet future load. There is a need to accelerate the construction of new transmission lines and investments in the distribution grid to support the growth in renewable energy and meet increases in energy demand. Customers will play an important role through equitably increasing rooftop solar, energy efficiency and demand management and through the electrification of transportation and buildings. In the Los Angeles basin, firm generation, using renewably derived fuels such as green hydrogen that can come on-line quickly but is likely to be used infrequently, will help maintain electric system reliability.

While we continue to develop the steps to meet the 100 percent carbon free power supply target by 2035, projects that support these goals are moving forward. For example, in December 2021, the Red Cloud Wind project in New Mexico went into service, increasing renewable energy by 6 percent for 2022. We are also launching the Comprehensive Multifamily Retrofit program for deep energy savings for residents living in multifamily units. We are moving forward with a number of needed transmission and distribution grid infrastructure upgrades in the Los Angeles basin. We are also partnering with the Los Angeles Department of Recreation and Parks on a grid resiliency project at the Green Meadows Recreation Center in South Los Angeles, providing solar panels, energy storage and electric vehicle chargers in a disadvantaged community.

Other key projects currently underway include transforming the Intermountain Power Project in Utah, the last remaining coal plant in LADWP's energy portfolio. With our partners in the Intermountain Power Agency, we are building a new state-of-the-art combined-cycle generating system that will use green hydrogen as a fuel source. "IPP Renewed" will be capable of operating with a blend of natural gas and 30 percent green hydrogen when it starts operation in 2025 and 100 percent green hydrogen in the decades to come. It will also feature a seasonal renewable energy storage system using salt caverns for storage of green hydrogen and will utilize the existing high-voltage transmission line to carry renewable energy to the Los Angeles basin.

We are committed to achieving these decarbonization goals in an affordable, equitable and reliable way. There are a number of things that the federal government can do to help us in our efforts towards a reliable, resilient and clean grid in Los Angeles. First, federal funding can help leverage our investments towards a clean energy grid. Federal investments aimed at carbon reduction can accelerate technology development, deployment and help utilities like

LADWP and others decarbonize at scale equitably. For example, LADWP is participating in HyDeal LA, a cooperative effort aimed at delivering green hydrogen at \$1.50/kg by 2030. Other types of federal support, including the Department of Energy Loan Program Office loan authority can help bring innovative projects to market.

Furthermore, the federal government can accelerate renewable energy deployment by supporting the expansion of the nation's transmission grid. LADWP is a large transmission infrastructure owner, with transmission assets that span five western states. We see the need for additional transmission investment, including increasing local transmission capacity to integrate renewables and maintain resiliency. We also know from the LA100 study that high levels of electrification will provide additional electricity sales that will help mitigate rate impacts. Federal investment in electric vehicle charging infrastructure could help us realize those benefits in addition to meeting the needs of the growing electric vehicle market.

Other federal policies can help utilities remain reliable and resilient by supporting efforts to reduce wildfire risk. LADWP has water and power infrastructure that goes through National Forests and Bureau of Land Management lands and we work closely with those agencies to ensure continued and safe operation of those important assets.

Federal renewable and clean energy tax credits incentivize the deployment of those technologies. However, as a public agency, LADWP cannot access those directly. The value of the tax credits may be reflected in, for example, the price in a power purchase agreement but not in projects we may build or own ourselves. Policies that would allow tax-exempt utilities like LADWP to benefit directly from those energy tax incentives can make them fairer and more effective.

Thank you for inviting me to share some thoughts about the critical issue of grid resilience and reliability.