

**United States House of Representatives  
Select Committee on the Climate Crisis**

**Hearing on April 20, 2021  
“Making the Case for Climate Action:  
Creating New Jobs and Catalyzing Economic Growth”**

**Questions for the Record**

**Paul Lau  
CEO and General Manager  
Sacramento Municipal Utility District**

**The Honorable Kathy Castor**

- 1. Mr. Lau, I am working on legislation to help upgrade and expand our electric grid. Before becoming the CEO, you were the Sacramento Municipal Utility District (SMUD)’s Chief Grid Strategy and Operations Officer. How would a modernized and expanded electric grid help you meet your corporate goals faster and at lower cost?**

Thank you, Chair Castor. As Committee members know, we are in transition from a one-way grid to a bi-directional grid that facilitates transactions between customers and the utility, and soon transactions between customers. We have seen tremendous benefits from our grid modernization investments on our distribution system – particularly the move to smart meters, which SMUD undertook in 2009 with the aid of a grant from the Department of Energy through the American Recovery and Reinvestment Act (ARRA). Investing in smart systems is increasingly important because it will help us efficiently and cost-effectively integrate distributed energy resources (DER) owned by customers, accelerating carbon reduction while benefiting customers and the utility. Looking forward, we are focused on building our Advanced Distributed Management System (ADMS) and Distributed Energy Resource Management System (DERMS) which will allow us to achieve shared benefits of customer sited distributed energy resources like rooftop solar, battery storage, and electric vehicles. As part of our Zero Carbon Plan, we are very interested in business models that are mutually beneficial for SMUD, customers and carbon reduction, such as building a Virtual Power Plant program, and allowing Vehicle-to-Grid interaction on our system. We believe these customer programs will help contribute to achieving our zero carbon goal and the modern systems which will allow us to interact with our customers and their devices will be key to expanding these programs.

Expanding our large-scale transmission grids could bring reliability and clean energy benefits by providing improved access to areas with favorable wind or solar conditions (or other clean energy sources) and thereby make renewable energy cheaper and more accessible. Since transmission can also bring geographical diversity, it can support improved reliability. Examples

where this could bring benefits include transmission for offshore wind in California or improved long-distance transmission to improve access to wind resources in Wyoming.

- 2. Mr. Lau, I recently introduced the Community Solar Consumer Choice Act of 2021 to help deploy more community solar because residential solar and other distributed energy resources generate clean electricity, increase grid resilience and flexibility, and create jobs. What role do you see residential solar and other distributed energy resources playing in SMUD's plans to eliminate emissions by 2030? How can Congress support more deployment of residential solar and other distributed energy resources?**

Thank you, Chair Castor. SMUD was a pioneer in establishing a community solar program known as SolarShares. We see customer-owned resources playing a significant role in our 2030 Plan. DERs will play a major role not only in decarbonizing, but for maintaining reliability and keeping costs low, by optimizing resources for the customer and the entire grid. We're gearing up to pilot what's called a "virtual power plant" that leverages increased utility control of customer-owned resources to leverage the benefits of these distributed resources across the grid and enhance efficiency to reduce emissions. Further, these resources are even more efficient and useful to the grid when paired with storage. SMUD supports efforts to expand the solar investment tax credit (ITC) to storage projects, (on a stand-alone basis) which makes solar that much more appealing and effective as a tool to reduce emissions during critical peak hours, and to make these credits refundable, direct-pay instruments. Finally, it is important to point out that this investment needs to be made inclusively across all communities, including our under-resourced communities, to maximize benefits and ensure no communities are left behind.

Congress could support increased adoption of residential solar and other distributed energy resources by supporting R&D through tax incentives and research grants for new technologies and business models. Developing and deploying new technology such as virtual power plants, vehicle-to-grid technologies and microgrids is costly and risky for utilities, but in the long run these technologies could prove to be cost-effective game changers once sufficient scale is reached. Federal investment in emerging technologies and to launch and accelerate new industries have been very successful in many areas, including to grow the wind and solar energy sectors.

- 3. Mr. Lau, California has a state-wide building energy benchmarking program for commercial and multi-family buildings. I am working on a bill to establish a national benchmarking policy to encourage disclosure of the energy use and emissions of commercial and multi-family buildings. How does benchmarking help building owners reduce energy costs and cut harmful pollution?**

Thank you, Chair Castor. Benchmarking can provide critical information to consumers who would otherwise not be able to make meaningful comparisons of the relative energy use of buildings. In our service territory, we have customers that are particularly motivated by the environmental impact of their choices as consumers, and will actively work to reduce their carbon footprint. Benchmarking provides key data to inform these customer choices and drive

market solutions to reduce building emissions, such as energy efficiency and electrification measures.

**4. Mr. Lau, you announced that SMUD will completely eliminate carbon emissions by 2030, five years ahead of President Biden’s goal for the nation, and you will do so while accelerating the electrification of transportation and buildings. What kinds of investments could Congress make to help other utilities across the country catch up to SMUD?**

Thank you, Chair Castor. Congress can play a critical role in de-risking and incentivizing large investments. There are lots of examples where SMUD has innovated and invested in clean technology: for example, SMUD has been partnering in local dairies to turn waste into energy through “cow power,” we’re electrifying school buses in historically under-resourced communities, and as I mentioned, vehicle-to-grid and virtual power plants. These are innovations and investments where SMUD can take on the risk without adversely impacting our customers or our financial position. However, many of the emerging technologies that will allow us to ultimately replace all of our natural gas plants with clean carbon-free technology are either too expensive or not available at scale today; these include long-duration energy storage technologies, green hydrogen, and carbon capture and sequestration. We must approach these emerging technologies carefully, so we don’t over commit to one single option too early before the real winners present themselves, potentially getting ourselves into a position where we cannot financially shift dollars to a different leading technology down the road. We don’t have unlimited funding and can’t accept a high degree of risk associated with early investment in emerging large-scale carbon-free resources on behalf of our customers. Our exploration of these emerging resources must be small and of pilot scale during the initial phase, and we hope in partnership with others and potentially with grant funding, as we prove out these new carbon free technologies. That’s where support from the Federal government would be instrumental.

Fortunately, many of the necessary emerging technology investments are already under consideration by Congress: grants, incentives, and technical assistance programs that encourage partnerships and help make the financial case for local and private investment.

The American Jobs Act and CLEAN Future Act provide important avenues to aid in the electrification of transportation and the built environment. Utilities are natural investors and stakeholders in electrification because it is an additional delivery point for our product while addressing carbon emissions in sectors that to this point have done very little in terms of decarbonization over the past 20 years. Utilities can also be local and regional conveners of partnerships with other entities that have an interest in affordable housing, charging infrastructure, and mobility solutions. Beyond electrification, Congress should continue investment in innovation and R&D for cutting-edge technology, both on grid scale and distributed clean technologies; bolster incentives for demonstration and pilot programs for technology that is ready to be commercialized but has not yet been proven; incentivize and ensure opportunities for new technology adoption are inclusive and equitable in implementation; and expand grants and incentives to utilities for clean energy projects to mitigate cost impacts to ratepayers.

**5. Mr. Lau, in your testimony, you discuss SMUD's progress in electrifying and reducing pollution from its vehicle fleet. How will fleet electrification improve health in your community, and what can Congress do to help other communities realize these benefits?**

Thank you, Chair Castor. The partnerships SMUD is developing through the California Mobility Center are helping us realize the direct benefits of emissions reduction and indirect benefits of lowering fleet operating costs, contributing to lower rates for our customers. At SMUD, we have electrified 100% of our light duty vehicle fleet and implemented advanced technologies to reduce idle time and eliminate emissions from our heavier duty fleet. Currently, 13% of our fleet of nearly 1,000 vehicles and construction equipment includes an electric drive or hybrid feature, and we are aiming to increase this percentage as much as is feasible through 2030. As I said during the hearing, our region has some of the poorest air quality in the nation, making these investments critical for not only carbon emissions but other pollutants harmful to public health.

Given that under-resourced communities are often adjacent to major roadways and fleet operation centers, fleet electrification can be very effective in eliminating criteria pollutants such as diesel soot (particulate matter pollution) and other smog-forming chemicals that damage lungs and respiratory function. The fact that under-resourced communities have a disproportionately higher percentage of asthma, lung cancer, and other respiratory ailments makes it imperative that we find technologies such as electrification to help reduce these harmful emissions and help these communities. SMUD is performing a detail analysis of where all the large fleet operations centers are in our service territory and will be using that information to create a blueprint plan on how to support both electric and hydrogen zero emission vehicle technology deployment into those areas. SMUD is already sharing information on this initiative with other California utilities and will start promoting it nationally as the initiative progresses.