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

In the matter of:)	Docket No. 21-IEPR-06
)	
Building Decarbonization and Energy Efficiency)	SMUD Comments Re:
)	Building Decarbonization and Energy Efficiency
)	
)	September 2, 2021
)	

**Comments of SACRAMENTO MUNICIPAL UTILITIES DISTRICT on
Building Decarbonization and Energy Efficiency**

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments to the California Energy Commission (CEC) on the 2021 Integrated Energy Policy Report Building Decarbonization and Energy Efficiency *Commissioner Workshop on Building Decarbonization – Consumers, Financing, and Workforce* (“IEPR Building Decarbonization Workshop”) held on July 12 and 13, 2021.

SMUD strongly supports the state’s decarbonization efforts to reduce greenhouse gas (GHG) emissions by promoting transportation and building electrification and increasing the development of renewable resources. We take a holistic approach to climate change, and we do everything we can to cost-effectively reduce GHG emissions in the region.

In July 2020, our Board of Directors declared a climate emergency and adopted a resolution calling for SMUD to take significant and consequential actions to become carbon neutral (net zero carbon) by 2030. The goal of our 2030 Zero Carbon Plan is to reach zero carbon emissions in our power supply by 2030, while maintaining reliability and affordable rates and providing opportunities for economic mobility for underserved communities.

SMUD will continue exploring solutions to support strategic and equitable building decarbonization, energy efficiency, and other zero-carbon innovations that provide an inclusive economic growth benefit for all our communities. We are pleased to provide the following comments on the IEPR Building Decarbonization workshop.¹ Our comments focus on building electric-readiness and workforce development to support electrification.

Building Electrification Readiness

1. Support is needed for utilities and/or building owners to promote electric readiness.

¹ These comments supersede SMUD’s previous comments filed on July 26, 2021 to 21-IEPR-06.

A barrier to building and vehicle electrification is the electrical infrastructure upgrades needed to switch from gas to electric. SMUD believes additional support will be needed to assist utilities and/or building owners to make their homes and businesses ready to be electrified. It is much more cost effective and efficient for homes to be made electric-ready prior to the need for equipment or appliances to be replaced.

Most of the upfront cost differential in switching from gas to electric is due to the infrastructure needed to make the switch at the building level. To date, the majority of SMUD's electrification has occurred in buildings that already have appropriate panel capacity. However, the issue is not simply a capacity constraint. All buildings with gas appliances will need to have electric circuits installed from the panel to the point of use by the new electric equipment, EV, or appliance. Costs run between \$300 and \$1,200 per circuit, including for the wiring, conduit, breaker, and drywall repairs.

Preparing a home to be electrified is expensive. Panel replacements along with the addition of new circuits for our low-income program costs \$4,725 on average. Some panel and circuit upgrades may cost well over \$9,000 in situations where the panel placement must change, the distribution line is underground, and/or there is substantial vegetation management that must be completed prior to the new panel installation. The cost of electrical infrastructure is a major barrier to electrification. More work needs to be done to ensure utilities and owners can prepare their homes for electrification.

2. Direct install programs reduce the costs of electrification.

SMUD has achieved societal cost savings by using direct installation in low-income single-family homes. For example, based on SMUD's best estimate at this time, the average low-income direct installation cost for a heat pump water heater is \$3,500, whereas for our market rate program, in which SMUD incentivizes \$2,500 and the customer is responsible for hiring a contractor, the average total cost is close to \$3,800. The cost savings may be even greater if the direct-install contractor is able to go door-to-door and convert multiple adjacent homes. SMUD estimates that similar savings may be achieved with respect to heat pump space heating installations (e.g., an estimated \$13,000 for direct install versus approximately \$15,000 for market rate). To date, SMUD's direct installation program has only been offered to low-income customers, but it could be equally beneficial when applied to any home or neighborhood. Direct installation can be cost-competitive for the utility in sufficient volume.

Workforce Opportunities

SMUD is strongly committed to ensuring that our regional efforts related to building decarbonization, energy efficiency, and other zero carbon innovations provide an inclusive economic growth benefit for all our communities. SMUD agrees that workforce development is an important and crucial objective, and we provide the following comments to enhance the Commission's efforts in this area.

1. Building decarbonization will provide opportunities for job creation in underserved communities.

The buildout to support building decarbonization and related infrastructure presents opportunities to generate jobs in underserved communities. Construction companies that rely on a contingent workforce do not provide long-term economic stability to their workers. Construction jobs need to include skills training for residents in our underserved communities to increase long-term employment and earning potential. Historically, residential construction tends to have a lower paid workforce than commercial construction. SMUD recommends that diversity, labor standards, and contractor and worker training be embedded into building electrification policy and funding.

2. Promote awareness, skills training, and access to jobs for residents of underserved communities.

Building decarbonization will result in the creation of thousands of new jobs. The largest decarbonization job growth is expected from the manufacturing, project development and operations, and construction sectors. It is vital that our underserved communities have awareness, skills training, and access to these jobs.

For example, programs like “Earn and Learn” provide much needed training and awareness to ensure that potential workers can take advantage of upcoming job opportunities.² “Earn and Learn” programs (e.g., apprenticeships, paid internships, and project-based learning) combine applied learning in a workplace setting with paid wages, which in turn allow workers to gain work experience and develop skills and competencies.

3. Development of new technologies to support decarbonization efforts will provide additional employment opportunities.

The evolution and development of new technologies to support the state’s building decarbonization goals present a prime opportunity for workforce development. Investments in small businesses located in underserved communities should be part of the equation. This will ensure that participation in the resulting economic growth in commercialization is accessible to everyone.

Conclusion

As California moves toward a zero-carbon future, coordination between utilities and regulators becomes ever more important, and innovation will be vital to ensuring we reach the state’s goals at the lowest levelized cost to consumers.

As always, SMUD appreciates the opportunity to provide these comments and looks forward to continuing collaboration with staff on the development of the 2021 IEPR.

² [DCA ‘Earn and Learn’ - California Department of Consumer Affairs](#)

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