

Richard Corey
Executive Officer
California Air Resources Board

RE: Third Public Workshop of the 2022 State Strategy for the State Implementation Plan

Dear Mr. Corey,

Southern California Edison (SCE) appreciates the opportunity to provide comments on the Third Public Workshop of the 2022 State Strategy for the State Implementation Plan (2022 State SIP), held on February 10 by the California Air Resources Board (CARB). SCE offers the following comments for consideration with a focus on Building Decarbonization and Transportation Electrification, aiming to address several of the measures proposed by CARB in the Draft 2022 State Strategy for the State Implementation Plan, released on January 31, 2022.

Building Decarbonization

To achieve the state's ambitious air and climate goals, building electrification must play an immediate and vital role in the state's decarbonization and ambient air quality efforts. Nitrogen oxides (NO_x), carbon monoxide, and other pollutants from fossil fuel combustion negatively impact Californians' health, and 93% of Californians live in ozone non-attainment areas.¹ In California, researchers have estimated that emissions reductions from increased building electrification will also have significant benefits to air quality, including a reduction in fine airborne particulate matter and ozone levels.² The California Energy Commission's (CEC) recently released AB 3232 California Building Decarbonization Assessment (AB 3232 Assessment) concluded that reducing direct emissions in buildings requires a shift toward electric end uses, through efficient electrification of space and water heating (heat pumps), and must be a major component of any decarbonization plan.³

As such, **SCE strongly recommends that CARB establish statewide building electrification heat pump and other electric end-use targets to set the path for achieving decarbonization within this sector.** SCE also supports the proposed action in the Draft 2022 SIP Strategy that "[b]eginning in 2030, 100 percent of new space and water heaters (for either new construction or replacement of burned-out equipment in existing buildings) sold in California would need to meet the zero-emission standard" and recommends CARB consider accelerating the rule to start as early as feasible, taking into consideration necessary complementary incentive funding and affordability for customers, in order to reach the state's 2030 target. Accelerating this proposed measure would support the CEC's recently released Final

¹ California Energy Commission. Exploring Economic Impacts in Long-Term California Energy Scenarios. (June 2018). <https://www.energy.ca.gov/2018publications/CEC-500-2018-013/CEC-500-2018-013.pdf>.

² Zapata, C. B., Yang, C., Yeh, S., Ogden, J., & Kleeman, M. J. Low-carbon energy generates public health savings in California. Atmospheric Chemistry and Physics, pp. 4817-4830. (April 2018). <https://www.atmos-chem-phys.net/18/4817/2018/acp-18-4817-2018.pdf>.

³ California Energy Commission, Final Commission's Report California Building Decarbonization Assessment, p. 14 and 33. (Aug. 2021). <https://efiling.energy.ca.gov/GetDocument.aspx?tn=239311>.

2021 Integrated Energy Policy Report (IEPR) report, which recommends a goal of installing at least 6 million electric heat pumps statewide by 2030.⁴

SCE's analysis indicates that the 2030 heat pump adoption gap statewide,⁵ is 5.3 million heat pumps, after projecting today's programs growing through the decade with the adoption of building codes mandating electric water and space heaters for new construction in the 2025 Title 24.⁶ If the proposed CARB rule is in effect before 2030 and qualifying water and space heaters are all efficient electric heat pumps, then this acceleration would help to significantly close that gap, with the residential heat pump gap and most of the commercial heat pump being likely closed if the rule was effective in 2028, and the entire gap likely closed if effective in 2027.

Accelerated implementation of CARB's proposed 2030 water and space heating rule towards electrification could also realize many other benefits beyond cost-effective greenhouse gas (GHG) emissions reduction and reduced air pollution. When retrofitting gas water and space heating with electric heat pumps, 100% of homes modeled across California climate zones will realize net energy bill savings.⁷ The UCLA Luskin Center for Innovation estimates building electrification in California could support an average of 64,200 – 104,100 additional jobs annually, after accounting for losses in the gas industry.⁸ Elimination of all natural gas consumption in buildings saves \$7 billion statewide and \$5 billion in Southern California Air Basin in health benefits annually statewide, at an equivalent of \$1.20/therm.⁹

Also, given the inherent uncertainty in distribution, pace, and trajectory of expected load demand increases due to the scaling up of electrification, it is imperative to explore a range of realistic building electrification and energy efficiency scenarios that align with the energy resource needs.

Transportation Electrification

According to CARB's Proposed 2020 Mobile Source Strategy, "[m]obile sources including cars, trucks, tractors, and a myriad of other on-road vehicles and off-road equipment, contribute a majority of smog-forming oxides of nitrogen (NOx), the largest portion of greenhouse gas (GHG) emissions, and are a significant source of toxic air contaminants that directly impact community health."¹⁰ Appropriately, the state has significant air and climate goals to help mitigate these impacts, including Governor

⁴ California Energy Commission. 2021 Integrated Energy Policy Report. <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report>

⁵ Application of Southern California Edison Company for Approval of its Building Electrification Programs, Application (A.)21-12-009. (December 20, 2021).

<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M432/K773/432773552.PDF>

⁶ California Energy Commission. Building Energy Efficiency Standards - Title 24.

<https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards>

⁷ Energy and Environmental Economics (E3). Residential Building Electrification in California. Consumer economics, greenhouse gases and grid impacts. (April 2019). https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf

⁸ UCLA Luskin Center for Innovation. California Building Decarbonization Workforce Needs and Recommendations. (November 2019).

https://innovation.luskin.ucla.edu/wpcontent/uploads/2019/11/California_Building_Decarbonization.pdf

⁹ Energy and Environmental Economics (E3) and Advanced Power and Energy Program (APEP) for the University of California, Irvine. Quantifying the Air Quality Impacts of Decarbonization and Distributed Energy Programs in California (January 2022). <https://www.ethree.com/wp-content/uploads/2022/01/CPUC-Air-Quality-Report-FINAL.pdf>

¹⁰ California Air Resources Board. Proposed 2020 Mobile Source Strategy, p. 2. (October 2021).

https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf

Newsom's Executive Order (EO) N-79-20, which orders, among other things, that by 2035 - 100 percent of in-state sales of new passenger vehicles and 100 percent of drayage trucks will be zero emissions, and where feasible 100 percent of medium- and heavy-duty vehicles will be zero-emission by 2045.¹¹

CARB Regulations, such as the Advanced Clean Fleets (ACF) Rule, will help accelerate the transition to zero-emission vehicles and will provide important air quality and public health benefits, especially in reducing local and regional air pollution impacts. This transformation plays an essential role in helping the state achieve its ambitious air and climate goals.

SCE supports the ACF Rule and is planning to electrify its own fleet, of nearly 4,450 on-road vehicles and powered trailers, in phases as vehicle models that can meet the necessary performance requirements become available. Because there will likely be instances in which suitable vehicle models are unavailable to meet the required use cases and duty cycles, SCE recommends that CARB adopt a technology/commercialization review process to assess the expected availability and suitability of various vehicle types, in order to help fleets identify vehicles that are most suitable for transition and to lessen the burden of an exemption process for both the agency and regulated fleets, especially in the early years when the availability of technologies for some use cases may be more uncertain.

To help ensure a successful and orderly transition to zero-emission modes of transportation, it is also important for the ACF Rule to be complemented by adequate and reliable incentives to spur early adoption and stable financial mechanisms to sustain market growth. SCE encourages CARB to consider increasing funding for incentives for programs like the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP).¹²

Because increased utilization of Medium- and Heavy-duty vehicles will create significant growth in transportation-related electricity demand and associated needs for utility infrastructure upgrades and customer-side charging infrastructure, SCE recommends ongoing collaboration between the state regulatory agencies, utilities, and other key stakeholders to help promote alignment of requirements and knowledge sharing for planning purposes. Additionally, utilities and fleets will need to work together to assess impacts and plan to ensure the necessary infrastructure is successfully in place to meet expected compliance timelines. To assist in this process, SCE recommends that CARB collect and share certain fleet data with utilities (i.e., location, fleet size, fuel type, anticipated charging times, and deployment forecasts) to help utilities better understand and plan for the fleet and grid infrastructure investment needs.

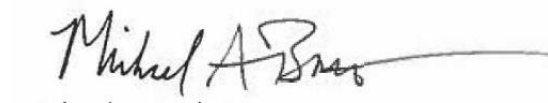
¹¹ State of California, Executive Department. Executive Order N-79-20. (September 23, 2020). <https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf>.

¹² Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project. <https://californiahvip.org/>

Conclusion

SCE thanks CARB for taking into consideration the above comments on the 2022 State Strategy for the State Implementation Plan workshop. Please do not hesitate to contact me at (626) 302-8442 with any questions or concerns you may have. I am available to discuss these matters further at your convenience.

Sincerely,

A handwritten signature in black ink that reads "Michael A. Backstrom". The signature is written in a cursive style with a long horizontal line extending to the right.

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