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Sparking California's Move to Help Meet the State's 2050 GHG Goals

Barriers and pathways to cutting carbon in the electricity sector more cost-effectively

(San Francisco) – California's long-term goal of cutting greenhouse gas (GHG) emissions 80 percent from 1990 levels by the year 2050 will be tougher, less efficient and more expensive without a significant shift toward electrification, a revamp of our electricity pricing structure, an expansion of our carbon trading program and increased market certainty for clean tech investors. These are the conclusions of a new study, *Electricity Pricing and Electrification for Efficient Greenhouse Gas Reductions (www.next10.org),* released today by the nonpartisan, nonprofit group Next 10 and authored by Lee S. Friedman, economist and UC Berkeley Professor of Public Policy.

"The electricity sector now provides about 25 percent of the energy used in our state's economy and that number must grow as we work to build a lower carbon future," said F. Noel Perry, the founder of Next 10. "Creating a more efficient, cleaner electricity sector will put us on the right path to meeting our 2050 goals.

Electricity Pricing and Electrification for Efficient Greenhouse Gas Reductions concludes that unless additional policy action is taken, California's GHG reductions will be lower than they could be and more expensive than necessary. The study concludes that in order to meet the state's 2050 goals, the following should be considered:

- Linking California's carbon market with other jurisdictions that have comparable emission reduction goals and programs, like the linkage expected with Quebec. Such linkages would create new possibilities for reducing GHG emissions and cut the cost of emission reductions.

- Creating more policy certainty around the state's emissions goals for the decade following 2020. This is needed soon to help drive long-term infrastructure investments and research and development efforts aimed at

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developing the state's low carbon future. Given that some studies show existing methods alone are not enough to achieve long-run emission reduction targets, technology innovation is key to meeting the state's longer-term goals. The study concludes that greater policy certainty post 2020 could come in the form of something as simple, for example, as a 2030 target for emissions reductions.

- Electricity providers are currently prohibited from giving any GHG price signal to the 10 million households served by the state's investor-owned utilities. This creates a market distortion that hinders consumers from naturally conserving energy to reduce their energy bills. The study concludes that policymakers should look at these distortions and consider strategies to prevent them. One promising strategy under consideration at the California Public Utilities Commission is to allow the carbon price signal but offset the effects on bills with periodic dividends to electricity customers.

- Transitioning electricity customers to a time-varying rate system that reflects the true cost difference between using electricity during peak and non-peak demand hours.

"When air pollutants are unpriced or underpriced, emitters and consumers tend to perceive emissions as having little or no cost," said author Lee Friedman. "California has already put a price on carbon, and by removing other market distortions and barriers to long-run investment in cleaner infrastructure and development of new technologies, we will reach our goals more efficiently and at a lower overall cost."

The study finds that inefficient electricity pricing policy not only distorts market signals to consumers, it also acts as a substantial barrier to vehicle electrification, as well as the development of smart grid programs and various types of electricity storage facilities that would support the state's renewable generation sources.

Current rate structures make vehicle charging in California six-to-eight times more expensive than it should be, concludes the report. Many residential electricity customers pay in excess of $.30 per kWh at night even though the marginal cost of providing night electricity is much closer to $.05 per kWh.

"This inflated night price is a clear barrier to vehicle electrification, an important strategy for achieving California's emission reduction goals," said Friedman.

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Additional benefits are created through a more efficient market with time-varying rates the study concludes. Such a system encourages electricity customers to curb their electricity consumption during times of high demand. Time-varying rate systems also, the study says, encourage electricity suppliers to adopt technology that makes conservation more automatic and less noticeable for electricity customers. These activities both help prevent shortage situations caused by very hot days, unexpected outages, or shortages that may come due to reliance on intermittent generation sources like wind and solar.

About Next 10

Next 10 is an independent, nonpartisan organization that educates, engages and empowers Californians to improve the state's future. With a focus on the intersection between the economy, the environment, and quality of life, Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state.

About the Author

Lee S. Friedman is an economist and Professor of Public Policy at the Goldman School of Public Policy, University of California at Berkeley. He has undertaken this study in conjunction with the California Council on Science and Technology's project "California's Energy Future to 2050: Policy Issues." Friedman is the author of numerous articles on energy and environmental regulations, and of the book The Microeconomics of Public Policy Analysis. He is a recipient of the David N. Kershaw Award for distinguished public policy research. He has served as an advisor to many governmental agencies, including the Air Resources Board, the California Public Utilities Commission, and the California Energy Commission.

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