

April 23, 2020

Dear Chair Nichols, Executive Officer Corey, Board Members, and agency staff,

Thanks to the California Air Resource Board for moving forward with your work at this particularly difficult time. Long-term planning is always essential and at risk of being pushed aside by near-term urgencies.

Even in normal times, forward-looking analysis of economy-wide decarbonization policy is challenging. E3's Pathways model is an invaluable tool, and thanks are due to ARB and the state's energy commissions for supporting its development over the years. But while the Pathways model yields sophisticated insights on many crucial policy questions, carbon pricing is outside of its scope. This is important because the 2017 Scoping Plan made cap-and-trade the lynchpin of California's strategy, giving the program the responsibility of closing the gap between the reductions from other policies and the 2030 target.

Energy Innovation's Energy Policy Simulator (EPS) provides integrated analysis of economy-wide carbon pricing and dozens of technology standards and other sector-specific policies – a unique capability so far as we are aware. The EPS is an open-source model, and has been reviewed by experts with the Department of Energy's National Laboratories and top universities. Energy Innovation, through collaboration with organizations such as the World Resources Institute and Mexico's Centro Mario Molina, has applied the EPS in eight nations and two subnational jurisdictions representing [more than half](#) of global greenhouse gas emissions.

The EPS includes features expressly requested by policymakers in the inaugural California Climate Policy Modeling Dialogue, conducted after the first Scoping Plan, which concluded: "Policymakers involved asked for more modeling of . . . individual policies (i.e., rather than generic climate policies) in order to better understand the spatial, temporal, and socio-economic effects of regulations [and] interactive effects between two or more policies" ([Morrison et al. 2015](#), p. 555).

Earlier this year, we released a [downloadable](#) California EPS adaptation, along with our report [Insights from the Policy Simulator](#), which provides documentation and discussion.

Our preliminary findings are twofold:

1. The strategy set forth in the 2017 Scoping Plan appears unlikely to successfully reach the 2030 target, even when we include higher ambition for key policies such as the Renewable Portfolio Standard and Low Carbon Fuel Standard that were added since the plan was completed.

2. Opportunities for policy strengthening exist. The California EPS identifies a package of six extensions to the current framework that hits the 2030 target while delivering economic and social benefits totaling more than \$20 billion through 2030.¹ Model results indicate building and transportation electrification are particularly promising for the potential economic benefits for Californians they offer.

In reply to concerns that the cap-and-trade program's current design creates a significant risk the program will not close the gap between emissions reductions from other policies and the 2030 target, the final statement of reasons for the cap-and-trade rule adjustments carried out in 2018 points to the uncertainty analysis carried out in Appendix E. It also states: "That same uncertainty analysis had to make some assumptions about the ability of the Cap-and-Trade Program to deliver specific quantities of reductions at specific prices," ([FSOR 2018](#), page 30). The problem is that these assumptions had no basis in the research literature.

The 2022 Scoping Plan is likely to be the last formal long-term planning exercise with a chance to make a significant difference in meeting the state's 2030 goal. Given the statutory requirements that Scoping Plan exercises must be completed every five years, the next Scoping Plan would not be required until roughly 2027.

The analysis underpinning the next Scoping Plan will be particularly important, while the current crisis adds to the degree of difficulty. Analysts around the world are working to understand the implications of the COVID-19 pandemic. We will be more effective working together. Our policy model is readily adaptable and we hope to be of assistance.

In closing, we offer our deep appreciation for your work advancing the public interest.

Thank you,



Chris Busch

Research Director, Energy Innovation

¹ Estimated net present value of direct economic benefits plus monetized climate and health benefits, summed to 2030, and discounted at an annual rate of 3 percent.