

Statement from the Economic Reviewers
December 14, 2017

Over the last year, we have met with and given feedback to the teams involved in the scoping plan modeling process. While we cannot say we are the leading experts in any specific detail of the modeling we can provide the following general impressions about the modeling and its results.

First, the overall conclusion that the scoping plan measures as a whole would have only a modest negative impact on the California economy is a reasonable and intuitive one, provided that the assumptions underlying the modeling are true. California's economy is neither carbon or energy intensive, so increasing the costs of energy and carbon consumption should have only modest impacts, particularly if revenues from some programs like cap and trade are recycled back into the economy.

Second, it is important to recognize that the analysis which describes the scoping plan activities and costs, particularly the PATHWAYS modeling, is highly assumption driven and only as accurate as the assumptions that underpin the analysis. The types of models used to represent scoping plan costs can create richly detailed output, and this detail should not be confused with precision in forecasting the future. In order to better understand the accuracy of these assumptions, there needs to be more careful backward-looking evaluations of the effectiveness and costs of various directed programs. Moreover, the costs modeled in the analysis represent only the physical costs of materials and energy. Examples of costs that are omitted from the model include the "programmatic" costs of implementing regulations so that they are effective; various transaction costs; and the impacts of changes in product quality on consumers.

These aforementioned limitations and caveats imply that, while the scoping plan can provide an impression of a detailed, precise plan, the reality is that there is great uncertainty over the costs and effectiveness of many of the directed measures identified in the scoping plan. The conclusion that these programs will only modestly impact California's economy is predicated on the assumption that costs will not exceed the ranges assumed in the analysis. However, given the uncertainty involved in measures such as these, it is almost certain that the world will *not* look like the PATHWAYS model in 2030 in some sectors. Given this likelihood, we believe that it is important to emphasize policies that are able to flexibly respond to lessons and information that emerges over the next decade.

Finally, it is important to note that the scoping plan modeling did *not* optimize the choice of policies analyzed. The modeling was used to generate ballpark cost estimates of a set of policies identified by other means. Unfortunately, this modeling framework is not well-suited to comparing the costs/benefits of more prescriptive policies versus market-based approaches (e.g. taxes vs. cap-and-trade). We re-iterate the importance of emphasizing more flexible, market-based policies (such as the cap-and-trade program) that can incentivize the deployment of the least costly emissions abatement options.