



March 29, 2017

Hon. Vince Fong  
Assembly Member, 34<sup>th</sup> District  
Room 4144, State Capitol  
Sacramento, California 95814

Dear Assembly Member Fong:

You asked us to answer two questions regarding the potential future effects of having fuels in California's cap-and-trade program.

- How much would gas prices increase under different cap-and-trade allowance price scenarios included in the administration's regulatory analysis documents?
- What would be the additional costs borne by consumers under these allowance price scenarios?

Our responses to your questions, as well as some additional comments, are provided below.

**Allowance Price Scenarios.** We consider post-2020 cap-and-trade allowance prices under two hypothetical scenarios—a relatively low price (known as the auction reserve price, or price floor), and a relatively high one (known as the Allowance Price Containment Reserve [APCR] price, or price ceiling). Figure 1 lists the prices under each of these two scenarios in 2021, 2026, and 2031. These price scenarios are based on regulatory documents that accompanied the Air Resources Board's (ARB) proposal to extend the cap-and-trade program beyond 2020. While the range of allowance prices is wide under these scenarios—spanning from \$27 per allowance to \$81 per allowance in 2031, for example—it is unknown what actual allowance prices will be in the future. They could trade somewhere within that range or at even lower or higher prices under some circumstances. (All dollar amounts in this letter are 2016 dollars.)

Scenario	Year		
	2021	2026	2031
Auction Reserve Price	\$16	\$21	\$27
Allowance Price Containment Reserve Price	70	75	81

**Legislative Analyst's Office**  
California Legislature  
Mac Taylor • Legislative Analyst  
925 L Street, Suite 1000 • Sacramento CA 95814  
(916) 445-4656 • FAX 324-4281

**Gasoline Price Increase.** Figure 2 displays our estimates of the effects of cap-and-trade on retail gasoline prices under each allowance price scenario. (Note that we do not discuss the potential effect on diesel prices in this letter.) Under the auction reserve price scenario, cap-and-trade would raise gas prices by an estimated 15 cents per gallon in 2021, increasing to 24 cents per gallon in 2031. Under the APCR price scenario, cap-and-trade would raise gas prices by an estimated 63 cents per gallon in 2021, increasing to 73 cents per gallon in 2031. To obtain these estimates, we assume that retail gasoline prices would increase by 9 cents per gallon for every \$10 per metric ton of carbon dioxide equivalent that an allowance costs. Importantly, based on our review of research, we assume that the burden of additional fuel costs will fall completely on motorists. We also assume that the program does not affect fuel prices through other channels.

<b>Figure 2</b>			
<b>Gasoline Price Increases Under Two Allowance Price Scenarios</b>			
<i>Per Gallon (In 2016 Dollars)</i>			
Scenario	Year		
	2021	2026	2031
Auction Reserve Price	\$0.15	\$0.19	\$0.24
Allowance Price Containment Reserve Price	0.63	0.67	0.73

**Additional Spending on Gasoline.** Figure 3 displays our estimates of the additional spending on gasoline that would result from the price increases described above. We estimate that the price increases described above would increase the total cost of gasoline by about \$2 billion per year in the auction reserve price scenario and by three to four times that amount in the APCR price scenario. These estimates are particularly uncertain because they depend not only on future allowance prices, but also on future gasoline consumption. ARB’s Scoping Plan projects dramatic reductions in California gasoline consumption over this period based on its modeling of future vehicle fuel economy, use of alternative fuel vehicles, and other factors. Based on those projections, we estimate that gasoline consumption will decrease from about 15 billion gallons in 2015 to about 9 billion gallons in 2031. Our cost estimates are based on these consumption projections. To the extent that consumption was higher or lower than these projections, spending in each price scenario would be correspondingly higher or lower than our estimates.

<b>Figure 3</b>			
<b>Additional Spending on Gasoline Under Two Allowance Price Scenarios</b>			
<i>Statewide Total (2016 Dollars, in Billions)</i>			
Scenario	Year		
	2021	2026	2031
Auction Reserve Price	\$2	\$2	\$2
Allowance Price Containment Reserve Price	8	7	6

***Additional Comments.*** In considering your questions about increased prices under cap-and-trade, we would like to offer a couple of additional comments for your consideration. First, we note that the increased gasoline prices associated with cap-and-trade are an intentional design feature of the program. Increased gasoline prices—as well as increased prices for other products that produce carbon emission in their production or use—would provide a price signal to consumers that would encourage them to reduce their consumption of carbon-intensive fuels in order to meet the policy objective of reducing statewide carbon emissions. Importantly, in relying on this market-based pricing strategy, cap-and-trade should be a more cost-effective approach to meeting this policy goal than most traditional “command-and-control” regulations.

Second, while higher gasoline prices under the cap-and-trade program would impose increased costs on consumers, the revenues generated could be targeted by the Legislature to achieve certain policy goals. Under current legal constraints, these funds need to be targeted towards activities designed to reduce greenhouse gasses (GHGs). However, as we discuss in our recent report, *The 2017-18 Budget: Cap-and-Trade*, if cap-and-trade is extended with a two-thirds vote of the Legislature, it could expand the allowable uses of the revenues to be used for other purposes. This could include, for example, reducing taxes or providing rebates to consumers to offset the costs of cap-and-trade. Such an approach might be of particular interest to the Legislature if allowance prices increase significantly in the future. Importantly, tax cuts or rebates could be implemented in such a way as to reduce the net costs to consumers while maintaining the price signal that helps meet the state’s GHG reduction goal. For illustration purposes, we estimate that the increased costs of gasoline per household in 2026 would be in the range of roughly \$150 to \$550 under the two allowance price scenarios.

Please feel free to contact either Seth Kerstein [(916) 319-8365 or [Seth.Kerstein@lao.ca.gov](mailto:Seth.Kerstein@lao.ca.gov)] or Ross Brown [(916) 319-8345 or [Ross.Brown@lao.ca.gov](mailto:Ross.Brown@lao.ca.gov)] of my staff if you need additional information.

Sincerely,



Mac Taylor  
Legislative Analyst