Tiffany Roberts
Director, Policy and Regulatory Affairs

October 22, 2018

Ms. Rajinder Sahota   via e-mail at: **rsahota@arb.ca.gov**
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: WSPA Comments on CARB's Proposed Rulemaking Package on AB398 Implementation – Letter 1 – Price Ceiling/Speed Bumps

Dear Ms. Sahota:

The Western States Petroleum Association (WSPA) is a non-profit trade association which represents companies that explore for, produce, refine, transport, and market petroleum, petroleum products, natural gas and other energy supplies in California and four other western states.

WSPA appreciates this opportunity to provide the below comments on the California Air Resources Board's (CARB) 45-Day AB398 Implementation Package, which includes regulatory follow-up and implementation of AB398 and the development of a cost containment mechanism that includes speed bumps and a price ceiling.

A Well-Designed Price Ceiling and Speed Bumps Provide Effective Safeguards. The state has historically emphasized the importance of having a climate change program that achieves the dual goals of meeting the state's environmental targets while at the same time reduces the potential negative economic impacts of a carbon policy. To that end, AB398 directs CARB to develop a price containment mechanism that includes a price ceiling and two price containment points – speed bumps – which, if reached, would trigger additional allowances to be sold at a to-be-determined price structure.

Speed bumps are intended to help ease any panic in the market in the event of a run-up in prices. In order to protect consumers and the economy, AB398 also intended to set a price ceiling in the program that would keep the price of allowances in check, ensuring the price would not escalate beyond a certain point. Speed bumps are key cost containment points that are meant to stabilize the market, and, if reached, trigger the Independent Emissions Market Advisory Committee (IEMAC) to consider the implications of a rapidly increasing allowance price and how best to respond. Therefore, to be effective, the speed bumps must necessarily be placed at a substantial

distance below the price ceiling substantial enough to provide a sufficient amount of time for the IEMAC and stakeholder review.

A price floor and price ceiling (referred to as a price collar) are important programmatic features which bound the cap-and-trade allowance prices and are designed to ensure that prices do not dip below a set dollar amount and do not exceed an upper limit. These features help provide predictability to government policymakers who are concerned about the potential impact that the program could have on their constituents and businesses who must comply with the regulation. It also discourages allowance hoarding or market manipulation and sets reasonable expectations for carbon investment. Having such a mechanism to guard against market volatility or supply shortages due to unforeseen circumstances is vital for the health and sustainability of California's cap-and-trade program.

CARB's Proposal Fails to Meet Legislative Intent of AB398. CARB is proposing to set the first speed bump at $41.40 (2021), the second speed bump at $53.20 (2021), and the price ceiling at $65.00 (2021). CARB then escalates all these values by 5 percent plus CPI annually.

A cost containment package proposal that begins with the first containment point at more than two times that of the floor price, the second containment point at more than three times that of the floor price, and the ceiling nearly four times that of the price of the floor provides very little in the way of the safeguards intended by AB398. In fact, CARB's proposal to escalate the speed bumps and price ceiling by 5 percent plus CPI annually will lead to an unsustainable program. While CARB references the need to mirror the rate of floor escalation due to concern that the floor and ceiling would converge at some point in the distant future, this is unwarranted because any such convergence would not occur until almost 2050, even with no escalation of the ceiling – well beyond the statutorily-authorized timeline of the program.

CARB's proposal disregards the legislative intent of AB398[1]. CARB has clearly articulated that the design of the cap-and-trade amendments is intended to avoid reaching either the speed bumps or price ceiling. The intent of AB398 is not to have CARB set the speed bumps and price ceiling so high that they are never reached. That would essentially mean they are non-binding. Quotes from CARB's Initial Statement of Reasoning (ISOR)[2] rulemaking documents demonstrate the intention of setting these points so high as to make them non-binding.

- "In the unlikely event cost containment is triggered…" (ISOR p. 39)

- "In establishing the price ceiling, staff does not expect that allowance prices would reach that value, nor that a price ceiling is a feature that should be accessed in the operation of the Program" (ISOR p. 28)

- "Specifically, the prices at which allowances are available to market participants enforce upper bounds on potential allowance values, and do not represent expected long-term compliance costs." (ISOR p. 24)

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[1] https://twitter.com/ChadMayesCA/status/1048610976688263168

[2] https://www.arb.ca.gov/regact/2010/capandtrade10/capisor.pdf

AB398, as codified in Section 38562(c)(2) of the Health and Safety Code, requires the Board, "using the best available science," to consider several factors in setting a price ceiling, including (1) the avoidance of adverse impacts on resident households, businesses, and the state's economy; (2) the 2020 APCR tier prices; (3) the full social cost of carbon (SCC); (4) the auction reserve price; (5) the potential for environmental and economic leakage; and (6) the per-ton cost to achieve the statewide emissions targets.

By enumerating factors that do not necessarily converge on a specific price ceiling level, the statute inherently requires the Board to *optimize* for multiple factors using its discretion after considering the rulemaking record and acting in accordance with other statutory directions. These include Sections 38562(b)(5) and 38564, which direct the Board to, respectively, consider the "cost-effectiveness" of its climate regulations and to "facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs." Doing so necessarily and logically requires that, over time, the Board should select a price ceiling that operates within a band that reflects these enumerated factors.

While the reference in Section 38562(c)(2) to the "auction reserve price" provides a lower end of a range of potential price ceiling levels (i.e., about $15 in 2018), at least one factor suggests a natural upper bound. This is the SCC, which, as defined,[3] reflects the level of climate-related damages. Subject to reasonable trade-offs in competing social objectives (e.g., education, health, safety and other objectives), investment up to the SCC level is arguably justified to the extent it avoids commensurate damages. Investment beyond the SCC level, however, results in costs in excess of avoided damages and thus would result in net social harm.[4] The SCC accordingly represents a natural upper bound for the price ceiling.

As with many models, the SCC models include thousands of data points and projections and exhibit a wide range of uncertainties. Accordingly, both to avoid unintended environmental or economic damage, CARB should use a central-tendency SCC value similar to levels used by other reputable organizations, consistent with the requirement that CARB use the "best available science." Dr. Steven Rose of EPRI has extensively researched the SCC. Dr. Rose recently presented a careful analysis of the range of SCC data, the strengths and weaknesses of the primary SCC models and the resulting central-tendency values. Dr. Rose finds the central-tendency value to be $42 in 2020 (using 2007 dollars). Dr. Robert Stavins of the Harvard Kennedy School also recently analyzed cost-containment design issues under AB398. Dr. Stavins' benchmark SCC value, $79 in 2030 (nominal dollars), is based on the work of the Obama Administration interagency workgroup and is consistent (albeit somewhat higher) with Dr. Rose's analysis.

Other factors may suggest placing the price ceiling at a level lower than the SCC. This would be the case, for example, if CARB were to determine that a lower level were needed to avoid materially harming consumers (i.e., through the imposition of regressive energy costs), driving

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[3] See, e.g., Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866, Interagency Working Group on Social Cost of Carbon, United States Government (February 2010) at 1 ("The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services due to climate change.")

[4] Todd Schatzki and Robert N. Stavins, Key Issues Facing California's GHG Cap-and-Trade System for 2021-2030, July 2018.

economic activity from the state (i.e., the loss of businesses and jobs), or discouraging other states from linking with California's program (which Ontario's recent exit reminds us is an ongoing concern.)

NERA has recently completed analysis of CARB's proposed cost containment package and has concluded that incorporating a price ceiling that increases by 5 percent plus CPI (assumed to be 2 percent) annually creates greater harm to California's economy and household income compared to a price ceiling that escalates at a much lower rate[5].

So, while the SCC offers a reasonable upper-bound price ceiling level, based on evaluation of such other factors, CARB should place the ceiling lower than the SCC-derived upper bound in order to guard against economic harm.

Applying the above methodology to the recent CARB proposal, we remain seriously concerned about the use of an escalator that would increase the price ceiling independent of an annual CPI adjustment. In fact CARB's price ceiling proposal starts in 2021 at a point above the SCC-derived upper bound of net social benefit (i.e., causing net harm) and continues to an increasing degree each year. This would appear to run directly afoul of the statute and would open the proposal to potential legal challenge.

We urge CARB to align the price ceiling/speed bump design with the Section 38562(c)(2) factors in the manner described above and in accordance with other provisions of AB 32. This can be done by either eliminating or significantly reducing the application of the non-CPI escalator. If CARB decides to retain such an escalator, then it must significantly reduce it if it is to avoid economic damage. Aligning the proposal with the central-tendency SCC values also would require adjustment to the price ceiling levels, particularly approaching 2030.

WSPA recommends that speed bumps be placed at 1/3 and 2/3 distance between the projected floor price and ceiling price. This provides for greater cost containment opportunity across the entire price curve.

Proposed Removal of Allowances Is Unnecessary and Adds Programmatic Costs. CARB's proposed regulation contemplates removing allowances from the 2026 to 2030 period and placing them into the second speed bump as a response to the quantitative offset usage limit increasing from 4 percent to 6 percent in 2026. Doing this simply adds cost and uncertainty to the program. Provided AB398's requirement that 50 percent of the offsets used for compliance must meet the Direct Environmental Benefits (DEBs) definition, shifting allowances from the annual auction budget into the second speed bump does little for cost containment. Because of uncertainty in the quantity of projects that will meet the DEBs definition and lack of information on the cost to implement a DEBs project, constraining the annual allowance budget starting in 2026 is premature. WSPA recommends CARB keep the 22.7 million allowances in the 2026 to 2030 allowance budget.

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[5] NERA Economic Consulting, AB 398 - Allowance Ceiling Prices and Speed Bumps, Oct. 2018.

Thank you for your consideration of these critical points. We would welcome the opportunity to further discuss the issues raised here. If you have any questions, please contact me at this office at (916) 325-3088 or email troberts@wspa.org.

Thank you,

Tiffany Roberts,
Director, Policy and Regulatory Affairs
Western States Petroleum Association

cc: Richard Corey – CARB
        Edie Chang – CARB

STUDY: AB 398 - Allowance Ceiling Prices and Speed Bumps
(October 2018 Update)

Purpose of the Study:

Assembly Bill (AB) 398 has two provisions to contain the costs of California's climate change program: it requires the California Air Resources Board (ARB) to establish a firm price (ceiling) on cap-and-trade allowance prices and set two intermediate containment prices (speed bump prices) at which allowances would be available for sale. To help inform regulators in setting the ceiling and speed bump prices, NERA Economic Consulting undertook a study in March 2018 to estimate the economic impacts of four scenarios that differed only in the level of these prices. All scenarios included a suite of the California-specific complementary measures and the cap-and-trade program with a 2030 target of 40% below 1990 level greenhouse gas.[1] This study updates the March 2018 study to analyze the proposed amendments to the California cap on greenhouse gas emissions and market-based compliance mechanisms regulation released on September 4, 2018,[2] and to include a sensitivity scenario on the proposed amendment. The two new scenarios that are the subject of this update are described below and in Tables 2 through 4. This study was funded by the Western States Petroleum Association (WSPA).

The first of the two new scenarios (labelled "$65@5%") reflects the proposed ceiling, speed bump prices, and distribution of pre-2021 reserve allowances in 2021. The proposed floor price and ceiling prices start at $17.8 and $65, respectively, in 2021 and both rise at 5% real.[3] The speed bump prices were set at one-half and three-fourths of the difference between the floor and ceiling prices, with one-third of the containment reserve (APCR) allowances accrued through 2020 being made available at each of these prices. The remaining APCR allowances are assumed available for purchase at the ceiling price. This ceiling price tier also includes 39 million previously unsold allowances.[4] The second scenario analyzed in this update (labelled "$65@1%") assumes a 1% real rise in floor and ceiling prices while all other assumptions remain the same as the first scenario. In regards to the allowance market, the study assumes myopic behavior on the part of consumers and producers to capture market expectations about the uncertainties surrounding California's GHG policy. This study reports results relative to the same reference scenario ("$39" scenario) used in our March study. It finds that the economic costs of California's greenhouse gas policies are lower when the ceiling and speed bump prices rise at the slower rate (see Table 1).

Key Findings and Results:

1. As the rate of increase in ceiling prices increases from 1% to 5% per year, economic impacts to California's economy and households increase. By 2030, the loss in household income is about $120 greater in the "$65@5%" scenario compared to the "$65@1%" scenario (see Table 1).

2. Speed bumps, when placed at one-half and three-fourths of the way from floor to ceiling prices, delay the year in which the ceiling price is reached. A slower rise in the ceiling and speed bump prices mitigates the costs further. Put differently, proposals to set the speed bumps closer to the ceiling or otherwise eliminate the unused allowances would likely lead to a more rapid ascent in allowance prices.

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[1] Proposed amendments for March 22, 2018 hearing.
https://www.arb.ca.gov/regact/2018/capandtradeghg18/capandtradeghg18.htm

[2] Appendix A through E provides details of the proposed amendments released on September 4, 2018.
https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm

[3] All prices are in 2021 dollars unless stated otherwise.
https://www.arb.ca.gov/regact/2018/capandtradeghg18/capandtradeghg18.htm

[4] Appendix C, Table 4, page 20. https://www.arb.ca.gov/regact/2018/capandtrade18/capandtrade18.htm

3. The model finds the price ceiling is reached a few years earlier (around 2028) in the "$65@1%" scenario than in the "$65@5%" scenario, which is around 2031.[5] Although the year in which the allowance price hits the ceiling price is delayed in the "$65@5%" scenario, the California economy will experience higher allowance prices than in the "$65@1%" scenario.

Table 1: Macroeconomic Results for "$65@5%" and "$65@1%" Scenarios Relative to Those in the "$39" Scenario (in 2021$)

Ceiling Price Scenarios ($/MT CO_2):	$39		$65@1%		$65@5%	
Impacts	2025	2030	2025	2030	2025	2030
Allowance Price ($/MT CO_2)	$33	$40	$43	$72	$53	$106
Change in Household Income ($/HH)			-$100	-$210	-$160	-$330
Change in Gross State Product (Billion $s)	N/A		-$3	-$5	-$4	-$6
Change in Job Equivalents ('000 jobs)[6]			-10	-30	-16	-57

[5] AB398 provides for a mechanism whereby *if* the price ceiling is reached, unlimited allowances can be purchased by obligated parties. AB398 directs that the proceeds of the sale of those allowances are to be used to fund additional emission reductions to maintain the environmental integrity of the program. The allowance price is endogenously determined and not equal to the ceiling price until the allowance price reaches this price.

[6] The number of job-equivalents equals total labor income change divided by the average annual income per job. This does not represent a projection of the numbers of workers that may need to change jobs and/or be unemployed, as some or all of the loss in labor income could take the form of lower wages and be spread across workers who remain employed.

Model, Scenarios, and Assumptions

This study employs NERA's proprietary N$_{ew}$ERA modeling system[7] to analyze the three scenarios (see Table 2). All scenarios impose the current program's 2030 GHG emissions target of 40% below 1990 levels and assume the emissions cap continues to decline toward the 2050 target of 80% below 1990 levels. To reflect existing law, all scenarios employ an economy-wide cap-and-trade program[8] and allow for fixed percentages of offsets that vary by year (see Table 3). Additionally, all scenarios employ a low carbon fuel standard (LCFS), a zero-emission vehicle (ZEV) requirement, a doubling of energy efficiency in commercial buildings by 2030, and a 50% renewable portfolio standard (RPS) target (see Table 4).

Table 2: Price Ceiling and Speed Bump Prices for all Scenarios (2021$s)

Scenarios	Price Ceiling (2021$/MT CO$_2$)		Speed Bump Prices (2021$/MT CO$_2$)			
			Speed Bump 1		Speed Bump 2	
	2021	2030	2021	2030	2021	2030
$39 Price Ceiling	$39	$39	$25	$25	$32	$32
$65 Price Ceiling rising at 5%	$65	$101	$41	$64	$53	$83
$65 Price Ceiling rising at 1%	$65	$71	$41	$45	$53	$58

Table 3: Assumptions about Cap-and-Trade Program Common to all Scenarios

GHG Target		Cap-and-Trade	Offsets Allowed (% Obligation)		
2020	2030	All Years	2018-2020	2021-2025	Post 2025
1990 levels	40% below 1990 levels	Economy-wide	8%	4%	6%

Table 4: Complementary Measures Common to all Scenarios

LCFS (Improvement in Carbon Intensity from 2010)		ZEV Requirement (Millions of ZEVs)		Efficiency Standard (Improvement from 2010)	RPS Program Renewables Requirement	
2020	2030	2025	2030	2030	2020	2030
10%	18%	1.5	4.2	Double	33%	50%

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[7] The N$_{ew}$ERA model fully integrates a detailed bottom-up, unit level electricity sector model with a top-down macroeconomic model of the U.S. economy.

[8] In this study, NERA assumes that all revenues from the sale of cap-and-trade allowances and ceiling price allowances are recycled back to households in a lump sum manner, which in general is economically more efficient than a policy to expend the revenues on specific projects. If we were to instead model the current implementation of earmarking revenues for specific projects, we would most likely project larger negative impacts.