Western States Petroleum Association

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May 24, 2018

Ms. Rajinder Sahota
California Air Resources Board
1001 I Street
Sacramento, CA 95814

via e-mail at: **rsahota@arb.ca.gov**

Re: WSPA Comments on CARB's April 2018 Workshop on AB398 Follow-up

Dear Ms. Sahota:

The Western States Petroleum Association (WSPA) is a non-profit trade association representing 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 comments on the California Air Resources Board's (CARB) April 2018 workshop which included discussion of the regulatory follow-up and implementation of AB398. The comments below address additional thinking on the Price Ceiling, Placement and Stocking of Speed Bumps, Banking Rules, Post-2020 Cap Adjustment Factor, and Uses of Allowance Value by POUs and Natural Gas Utilities.

Cap-and-Trade Price Ceiling and Carbon Price Not Intended to Be Equivalent - Some stakeholders seem to be confusing the cap-and-trade price ceiling - which is intended to provide a safeguard against market volatility and be a point of last resort - with a carbon price. California's climate program (encompassed in the Scoping Plan) establishes several carbon prices. The design of the Scoping Plan assumes that the complementary measures are relatively more expensive than a market mechanism for pricing carbon in the state. Therefore the cap-and-trade program was included as part of the suite of measures in the Scoping Plan precisely because it provides a means of identifying least cost emission reductions. Proposals that would attempt to use the price ceiling to force cost prohibitive emission reductions disregard the fundamental purpose of the market mechanism.

Recommendation: Propose amendments as directed by AB398 that the two speed bumps and ceiling price provide real cost containment.

World Bank Dashboard Dataset Informs Price Ceiling Considerations -- AB398 requires consideration of the following factors when establishing the price ceiling:

i. Avoid adverse impacts on households, businesses, and the state economy
ii. 2020 tier prices of the current Reserve

iii. Social Cost of Carbon
iv. Auction Reserve Price
v. Potential for environmental and economic leakage
vi. Cost per metric ton of GHG emissions reductions needed to meet statewide emissions targets

We have examined information available from the Word Bank Carbon Pricing Dashboard[1] and find that it is a better source of information than voluntary corporate internal carbon pricing for informing potential leakage risk (criteria #5 for developing a price ceiling) for the following reasons:

- The Dashboard provides actual price information for initiatives throughout the world
- The Dashboard provides information on the scope and coverage of the various initiatives

While prices are not necessarily comparable between carbon pricing initiatives because of differences in the number of sectors covered and allocation methods applied, the information from the dashboard allows for a general understanding of the differences.

The World Bank Dashboard provides information on 47 initiatives that have either been implemented or are scheduled for implementation. Broadly speaking, the initiatives establish a price or value of GHG emissions by either an emissions trading system (ETS), or a carbon tax. Of the emissions covered by the initiatives, about 65% are covered by emission trading systems and 35% by carbon taxes.

Information from 19 jurisdictions that have an ETS is available from the Dashboard. Carbon prices in those jurisdictions range from $0.23/ton to $23.43/ton[2] following a more or less normal distribution with a simple average of $9.39/ton. More than 70% of the emissions covered by these initiatives were at, or below, the price shown for California of $15.09/ton. The largest jurisdictions with prices below California's were the EU-ETS at $6.24 and four Chinese provinces, which have prices ranging from $0.23 to $1.93. Only the Japanese cities of Saitaman and Tokyo, Korea and Alberta had prices higher than California.

It is important to note that while Korea has a higher carbon price, during the first phase of its program, 100% of allowances are freely allocated. Later, up to 97% of allowances will be freely allocated in Phase II, and up to 90% of allowances will be freely allocated in Phase III. As a result, only 3% of allowances will be auctioned in Phase II and only 10% will be auctioned in Phase III.

The Alberta Carbon Competitiveness Incentive Regulation (CCIR) scheme does not tax all emissions. Specifically (per the dashboard), "Operators do not have to pay for GHG emissions up to their baseline emissions intensity level. Only if the baseline emissions intensity level is exceeded, operators must surrender a number of credits, or contribute to the Climate Change and Emissions Management Fund."

[1] http://carbonpricingdashboard.worldbank.org/map_data

[2] All prices are in US$ unless stated otherwise

Statistical Test Can Be Used to Evaluate World Bank Dataset -- Statistically, we examined the entire dataset of carbon prices from the World Bank Carbon Pricing Dashboard utilizing the interquartile range test in order to identify possible outliers.

The interquartile test calculates the average and the first and third quartile for the data set. It then adds 150% of the difference between the first and third quartile to the average and tests that against high values within the set. For this data set, the average price was $23.03/ton, the first quartile price was $4.92/ton, and the third quartile price was $24.83/ton. Thus the maximum value calculated by this test was $23.03 + 150% * (24.83-4.92) or $52.89 per ton. The Norway, Finland, Switzerland, and Lichtenstein with prices ranging from $52/ton to $87/ton carbon taxes are called into question by this test. The range of this test is $0-$52.89.The Swedish carbon tax is far beyond the reasonable maximum as calculated by the test.

Placement of Speed Bumps and Price Ceiling - The design of the speed bump and price ceiling safety mechanism – which entails decisions about the placement of speed bumps and the price ceiling and decisions about the number of allowances to stock each - is critical in order to provide the cost containment safeguards that the Legislature intended as part of AB398. To be most effective, contingent upon adoption of a reasonable ceiling price, the speed bumps should be placed equal distance apart from the auction reserve price and ceiling price at one-third and two-third intervals. This provides a greater means of predictability, reduces potential market volatility, and facilitates additional oversight of the market via the IEMAC's review. If the speed bumps are set too high, they will not be effective at dampening volatility and slowing the market to allow for oversight. CARB's discussion draft idea for the initial price containment point (the first speed bump) at $82 (2021) is problematic because it means that, barring emergency action by the Governor, the program would have no built-in cost containment mechanism that could be triggered prior to reaching $82. Thus no safeguard would be in place before hitting a nearly five time increase in allowance prices relative to the expected auction reserve (floor) price. This leaves the program – and ultimately the state's economy – unnecessarily vulnerable to potential market volatility. If the safety mechanism were to be set at such high levels as CARB's discussion draft suggests, there would effectively be no binding speed bumps or price ceiling. Thus CARB would miss the opportunity to put true safeguards in place that could reduce potential market volatility and ultimately help protect the economy. This would not meet the spirit or objective of AB398.

Recommendation: Place speed bumps at one-third and two-third distance between the auction reserve (floor) price and ceiling price under the condition that a reasonable ceiling price is adopted.

Allowances to Stock Speed Bumps and Price Ceiling - CARB has requested input on the placement of 52.4 million allowances that would have gone into the post-2020 APCR. When CARB adopted the most recent cap-and-trade amendments, it noted in the public record that there would need to be regulatory changes in order to conform to AB398. This is one of those areas that should be changed to better conform to the legislation. Specifically, WSPA finds that it is unnecessary to remove the 52.4 million allowances from the regular auction. That is because AB398 provides a mechanism for stocking the safety mechanism (speed bumps and price ceiling) and therefore that additional volume of 52.4 million is not needed for the safety mechanism. If however, CARB were to decide to pull the 52.4 million from the regular auction budgets, we find that it would be most appropriate to place that additional volume in the first

speed bump. Doing so would increase the size of the first speed bump relative to the second. This is important because it would provide a stronger buffer against market volatility. Designing the safety mechanism this way would provide policymakers more time to evaluate changing market dynamics while limiting the statewide economic impact of rising allowance prices.

CARB also asked for feedback on the potential for shaving 22 million allowances from the 2026-2030 allowance budgets in order to place additional allowances in the safety mechanism (speed bumps and price ceiling). Removing allowances from the annual budgets would artificially tighten the market. This would be particularly burdensome because it would occur at a time when the program is already tightening. Thus this would increase the likelihood that the allowance price would rise to the ceiling more quickly than it would have otherwise. CARB proposed and adopted regulations in the 2016-2017 process which allows 8% offsets but did not propose to reduce allowance budgets in a proportional manner. This concept of removing allowances fundamentally runs counter to the spirit of the safety mechanism that is important for California residents and its economy. Thus WSPA finds this to be punitive to regulated parties and recommends against it.

As we noted above, it would be prudent for the first speed bump to have a greater number of allowances than the second. Therefore WSPA also recommends placing any allowances that go unsold after 24 months (post 2020) into the first speed bump. Furthermore, because the allowance pool is shrinking at a higher rate, we suggest that from 2021 onward, CARB change the percentage of unsold allowances to be released, increasing the percentage proportional to the decrease in the cap.

Recommendation: Eliminate the proposed future allowance draws of 52.4 and 22.7 million. If CARB were to decide to pull the 52.4 million from the regular auction budget, WSPA recommends placing the 52.4 million allowances into the first speed bump. Place any allowances that go unsold after 24 months (post 2020) into the first speed bump. Change the percentage of unsold allowances to be released, increasing the percentage proportional to the decrease in the cap.

Banking - The cap-and-trade program has included provisions for banking because of the recognition that it is an important market feature which encourages early reductions and helps to minimize potential volatility. CARB has stated in recent workshops (e.g., October 2017 and April 2018) that existing rules allow prior or current vintage allowances to be banked for use in any future compliance periods. WSPA continues to support the banking rules as they currently exist. Restricting pre-2021 compliance instruments to that time period and/or reducing the value of pre-2021 compliance instruments when they are used in the post-2020 cap-and-trade program could have negative market implications. For example, it would discourage investment and discourage participation and would create uncertainty for the market (including our linked partners), and could discourage future linkage with California's program. Changes would create uncertainty for market participants and undermine confidence in the market's stability.

Recommendation: Maintain current banking rules.

Cap Adjustment Factor - CARB staff has indicated it will review manufacturing activity-specific data if stakeholders demonstrate that the NAICS 6-digit classification does not represent the activities conducted at the covered industrial facilities. Because the NAICS classification for industrial

gases represents a broad range of activities, in addition to Hydrogen Production, WSPA believes that hydrogen production should be considered for a more favorable cap decline factor. CARB has listed three criteria for sectors subject to more favorable cap decline factors: Over 50 percent total emissions from process emissions, high leakage risk classification, and high emissions intensity defined as 5,000 MTCo2e per million dollars value added.

- *Process Emissions* - Process emissions for hydrogen production are greater than 50% of total emissions. In the 2010 final statement of reasons, CARB did not contest the comments offered by Air Liquide and the Industrial Gases Panel of the American Chemistry Council that hydrogen plants had >50% process emissions. The average emissions intensity for hydrogen production, based on data included in CARB's February 26, 2014 white paper titled, "Proposed Benchmarks for Refineries and Related Industries," is 9.9 tons CO2e per ton of hydrogen production. Process emissions to produce hydrogen are 5.5 tons based on conversion of methane to hydrogen and consistent with Ontario's benchmark for fixed process emissions. Based on this information, process emissions for California hydrogen producers are 55.4% of total emissions.

- *Leakage Risk* - In 2010, CARB established a position that the leakage risk of hydrogen production was the same as petroleum refining. At the time, the leakage risk of petroleum refining was established as medium. Leakage risk, however, is not constant. Large foreign refineries now have the capacity to produce clean California products, increasing the possibility of imports. California's goal of reducing the use of fossil fuels for transportation may increase the importance of exporting fuels produced by California's tightly regulated petroleum refining sector. An analysis of recent trade and production data confirms these trends. Trade intensity at the national and regional levels has increased substantially since staff's ISOR that was published in October 2010 that concluded a medium leakage risk. National trade intensity has increased from an average of 20% in 2003-2008 to an intensity of 26% in 2013-2016, when stationary sources came into the program. Similarly, regional level trade intensity has increased even more dramatically, rising from 13% in 2003-2008 to 19% in 2013-2016. Per CARB criteria, refining and associated hydrogen production should be deemed at high risk of leakage. The detailed data that substantiates this is provided as an Appendix.

- *Emissions Intensity* - WSPA believes that the emissions intensity of hydrogen production is greater than 5,000 MT CO_2e/M$ value added, recognizing that CARB may wish to verify.

Recommendation: Refining and associated hydrogen production should be deemed at high risk of leakage

Allowance Allocation: Uses of Allowance Value by POUs and Natural Gas Utilities - CARB staff has requested feedback on methods to increase clarity of allowed uses and oversight, including quantification methods and purchase of allowances using auction proceeds. Towards

this objective, WSPA supports CARB's July 2016 proposal to allocate allowances for purchased electricity directly to covered entities instead of the Electrical Distribution Utilities (EDU's).

In 2015 the California Public Utilities Commission (CPUC) finalized decision D.14-12-037. This decision established a production based methodology for distributing Investor Owned Utilities' (IOU's) auction revenues to eligible Energy Intensive Trade Exposed (EITE) Entities. For EITE Entities within IOU service areas, the decision provides a methodology utilizing production based benchmarks for purchased electricity that is similar to and compliments CARB's production based allowance allocations. Leakage protection provided by the combination of CARB's allocation and IOU's revenue share are nearly equivalent for entities within a sector regardless of the mix of self-generated and purchased electricity. Because the CPUC decision does not apply to Publically Owned Utilities (POU's), there is no assurance that entities that are partially or totally within POU territory will receive equivalent treatment.

Modification of CARB's benchmark and allocations to include purchased power and removal of these additional direct allocations to covered entities from the allocations otherwise distributed to both POU's and IOU's will accomplish two important objectives. First, it will insure that entities within a sector are treated uniformly regardless of the electrical service area, providing a consistent incentive for improved efficiency. Second, it will relieve the CPUC and the IOU's from the burdensome task of calculating and distributing auction revenue to covered entities.

Recommendation: Adopt amendments to provide direct allocation to industrial entities for their power purchases vs. providing that allocation to the POUs and IOUs.

Thank you for your consideration of these critical points. We would be happy to further discuss any of the information included 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

cc: Richard Corey – CARB
Edie Chang – CARB

Trade Exposure Experience Since CARB 2010 Cap-and-Trade Program Internal Statement of Reasons [1]

ALL FIGURES IN $bln

NATIONAL DATA

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Production 324xxx[2]	587.2	714.5	466.5	590.3	790.8	740.0	802.7	802.2	478.8	407.8
Exports 324xxx[3a]	31.0	58.4	41.5	61.0	100.9	110.3	118.4	116.8	78.0	65.8
Imports 324xxx[3b]	102.3	130.6	75.1	102.2	141.2	135.5	124.4	113.1	67.9	55.2
ACES Trade Share[4]	19.3%	22.4%	21.5%	23.6%	26.0%	28.1%	26.2%	25.1%	26.7%	26.1%
Per ARB App K ("Customs")[5]	19%	22%								
Average 2003-2008 (per ARB)[5]		20%								
Average 2013-2016 (per analysis) - when California Cap &Trade program became effective for stationary sources > 25 kt/yr										*26.0%*

REGIONAL DATA

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Production 324x[2]	79.5	100.6	64.4	71.9	96.5	90.5	83.6	87.0	58.4	45.9
Exports 324x[3a]	2.5	5.8	3.2	4.3	6.2	6.0	6.3	7.1	4.3	3.0
Imports 324x[3b]	9.8	9.2	4.3	8.1	10.6	10.9	10.7	11.2	8.4	6.8
ACES Trade Share[4]	13.8%	13.7%	10.9%	15.5%	15.7%	16.7%	18.0%	18.6%	19.0%	18.6%
Per ARB App K ("Customs")[5]	14%	14%								
Average 2003-2008 (per ARB)[5]		13%								
Average 2013-2016 (per analysis) - when California Cap &Trade program became effective for stationary sources > 25 kt/yr										*18.6%*

NOTES:

1. See Appendix K in PUBLIC HEARING NOTICE AND RELATED MATERIAL, Posted October 28, 2010 at https://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm
2. Production data from query at https:factfinder.census.gov, column "Total Value of Shipments and Receipts for Services". By Calendar Year, for all NAICS codes 324xxx.
3a. Export data from query at https:usatrade.census.gov, column "Domestic Exports Value". For "regional data" is sum of ports of San Francisco, San Diego and Los Angeles. By calendar year for all NAICS codes 3
3b. Import data from query at https:usatrade.census.gov, column "Customs Import Values (Cons)". For "regional data" is sum of ports of San Francisco, San Diego and Los Angeles. By calendar year for all NAICS
4. ACES as defined at K20 in document referenced in Note 1, including definition of data utilized by ARB for "production," exports" and "imports" for equation at K20.
5. Figures reported by ARB in table at K23 in document referenced in Note 1.