

**Western States Petroleum Association**

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**Catherine Reheis-Boyd**

President

November 28, 2016

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 ARB’s informal draft concepts for AB 197 Implementation, Proposed Post-2020 Assistance Factors and Market Data Disclosure**

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 Air Resources Board’s (ARB) informal draft concepts for further changes to the proposed Cap-and-Trade regulation amendments to address: 1) AB 197 implementation; 2) post-2020 assistance factors; and 3) market data disclosures, discussed during ARB’s October 21, 2016 public workshop.

In addition to the following comments on the above noted policy issues, WSPA recommends that ARB take several specific actions consistent with its stated policy positions and statutory obligations. These recommendations are summarized here by topic area for ease of reference.

1. **AB 197 Implementation Concepts**
   * **“Cost Burden” Allocation** –The staff presentation suggests greater reliance on on-site emissions reductions in lieu of Cap-and-Trade as a rationale for reducing allocation, disregarding recommendations from ARB’s Executive Officer to the contrary. ARB should abandon this concept.
   * **Offsets –** If ARB were to reduce the current 8% offset use limit, it would undermine program cost containment.WSPA recommends that ARB accelerate its current timetable for adoption of sector-based offsets and couple this action with an expansion of the current use limit from 8% to 16% in the post-2020 timeframe as a means of balancing the additional cost pressure that will result from ARB’s proposed increase in the cap decline rate.
   * **Allowance Price Containment Reserve** - ARB should quantify the potential impact of its current APCR proposals and the concept of retiring unsold pre-2021 APCR allowances on market liquidity and program costs. ARB should also allow more transparent public discussion of these issues through a full 45-day public notice and comment period. Pending this review, ARB should continue to return unsold allowances to auction.
   * **Scope of the Current Cap-and-Trade Rulemaking** – The AB 197 concepts are not sufficiently related to ARB’s current proposals and therefore should not be included in 15-day changes to the current rulemaking.
2. **Allowance Allocation Concepts and Issues**:
   * **Limitations of Foundational Research** - The leakage risk studies conducted by UC Berkeley and Resources for the Future (RFF) contain data irregularities and methodological uncertainties acknowledged by the study authors. They should not be used as the basis for ARB’s post-2020 allocation policy decisions.
   * **Use of Sector-Specific Data** – ARB’s conceptual assistance factor adjustment for refining is at odds with readily available refining-specific data. ARB should use Energy Information Administration data to determine the actual percentage of refinery energy produced onsite.
   * **Non-Manufacturing Sectors** - ARB should not attempt to apply the UC Berkeley and RFF manufacturing sector studies, nor any regression analysis, to non-manufacturing sectors, as was done in the November 10, 2016 addendum to staff’s informal allocation proposals.
   * **Alternative Methodologies for Non-Studied Sectors** - ARB should consider prior recommendations from National Economic Research Associates (NERA) to use a computable general equilibrium (CGE) model which can actually address sector-specific circumstances.
   * **Calculation of Assistance Factors** - ARB should provide sufficient documentation to allow stakeholders to reproduce the calculations supporting its conceptual assistance factors for all sectors.
3. **Market Data Disclosure** - All data pertaining to the market positions of individual entities should be designated as confidential business information (CBI) and should be protected from public disclosure.

**AB 197 Implementation Concepts**

WSPA opposes further modifications to the Cap-and-Trade program in response to AB 197 (Garcia, 2016).  California climate law specifically requires ARB to “design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants.”[[1]](#footnote-1) As staff stated during the October 21 workshop, ARB designed the Cap-and-Trade program to prioritize direct emissions reductions at regulated facilities. In fact, current limitations on emissions trading are so stringent that the state is likely to sacrifice future opportunities for greater greenhouse gas (GHG) emissions reductions as this back-loaded program matures. Further restrictions along the lines of staff’s implementation concepts – 1) reducing the offset use limit (currently 8% of compliance obligation), 2) shifting allocation methodology to a “cost burden” approach (effectively reducing industry assistance) and 3) retiring unsold pre-2021 vintage allowances from the Allowance Price Containment Reserve (APCR) – would only serve to undermine a primary purpose of the program to reduce GHG emissions in the most cost-effective manner. Staff’s AB 197 implementation concepts are also in direct conflict with AB 32 requirements to ensure that emission reduction measures are as cost-effective as possible.[[2]](#footnote-2)

ARB is already on record asserting that limits on GHG emissions at individual facilities already subject to the Cap-and-Trade program could result in a number of undesirable consequences[[3]](#footnote-3), including:

* Failing to reduce statewide GHG emissions,
* Increasing GHG emissions outside of the local jurisdiction,
* Increasing the cost of statewide GHG emission reductions, and
* Shifting business activity to outside of the local jurisdiction.

It is unclear why ARB would consider the above noted changes as part of a Cap-and-Trade rulemaking process when they contradict the core principles of existing California climate law and are not needed to align the Cap-and-Trade program with AB 197.

**Offsets Proposals**

As WSPA indicated in our September 19, 2016 comments on ARB’s proposed amendments to the Cap-and-Trade regulation, offsets are a proven, cost-effective means of meeting AB 32 compliance obligations. The current offset use limit should be expanded, not reduced, and such action would be entirely consistent with ARB’s statutory obligation to achieve “the maximum technologically feasible and cost effective GHG emissions reductions.” In the near term, one of the most critical changes needed in the Cap-and-Trade regulation is authorization of sector-based offsets to ensure adequate offset supply in future compliance periods. As ARB has observed, sector-based offsets should be incorporated into the Cap-and-Trade regulation in advance of the third compliance period. This action, along with a measured increase in the offset use limit, would send a clear signal to jurisdictions weighing climate action against economic prosperity that ARB is committed to a robust and cost-effective market-based program over the long term.

WSPA recommends that ARB accelerate its current timetable for adoption of sector-based offsets and any other offset protocols it may be considering. WSPA further recommends that these proposals be coupled with an expansion of the current use limit from 8% to 16%, to take effect in 2021 as a means of balancing the additional cost pressure that will result from ARB’s proposed increase in the cap decline rate.

**APCR Proposals**

ARB’s current APCR proposals involve increasing the 120 million allowances that will exist in the APCR at the end of 2020 by at least 54 million through continued diversion from annual budgets, and adding unsold allowances to this total. WSPA previously commented that these proposals will artificially constrain the allowance market by reducing the volume of allowances in circulation and are likely to inflate program cost. Layering in a policy to retire unsold allowances would amount to a step-down reset of the cap. ARB previously workshopped this concept but ultimately dismissed it in developing its proposed amendments to the Cap-and-Trade regulation. Moreover ARB should not assert that the accumulated volume of allowances in the APCR under its pending regulatory proposals “is sufficient to meet the cost containment needs of the program through 2031”[[4]](#footnote-4), and then extract a significant portion of those allowances from the cap without knowingly undermining program cost containment. This rationale alone should be a sufficient basis for rejecting the APCR unsold allowance retirement concept.

WSPA recommends that ARB quantify the potential for its current proposals and this AB 197 APCR concept to diminish market liquidity and increase program costs. ARB should also allow more transparent public discussion of these issues through full 45-day public notice and comment periods. Pending this review, WSPA recommends that ARB continue to return unsold allowances to auction.

**Scope of the Current Cap-and-Trade Rulemaking**

WSPA also maintains that the scope of the changes envisioned in these concepts falls well outside of the changes identified by ARB in its August 3, 2016 Notice of Proposed Rulemaking. The 45-day notice is silent on the offset use limit. ARB’s current proposal for unsold pre-2021 allowances is to divert them to the post-2020 APCR. While we oppose the current staff proposal on the basis that it may lead to a more restricted market, retiring these allowances would likely have a much greater negative impact on market liquidity and program cost containment. ARB’s “cost-burden” concept for allowance allocation is still largely undefined, but appears on its face to depart from the leakage risk methodology currently proposed for allowance allocation. A reasonable interpretation of the Administrative Procedures Act (APA) suggests that these concepts are not sufficiently related to the current proposals and therefore should not be included in 15-day changes to the current rulemaking. Rather, if ARB chooses to pursue them, it would need to issue a new 45-day notice for a separate Cap-and-Trade rulemaking consistent with APA requirements.

**Direct Reductions at Petroleum Refineries**

ARB published a summary report in mid-2013 showing that the 12 refineries subject to ARB’s “Regulation for Energy Efficiency and Co-Benefits Assessment of Large Industrial Facilities” have implemented over four hundred projects to reduce GHG emissions. The ARB report states that approximately 78 percent of the estimated 2.8 million metric tonnes per year of GHG reductions associated with these projects have already been achieved.[[5]](#footnote-5) A third party review by San Francisco State University concluded that the refinery project reports demonstrated “a thorough effort.”[[6]](#footnote-6) The results of ARB’s refinery energy efficiency audits strongly suggest that opportunities for significant energy efficiency gains in this sector are limited at best. Efforts to implement direct GHG reductions at petroleum refineries above and beyond the reductions that will be driven by the declining cap are likely to result in the “undesirable consequences” previously identified by ARB’s Executive Officer.

**Post-2020 Allowance Allocation Policy**

ARB and some Cap-and-Trade stakeholders are pushing for changes in allowance allocation based on the concern that the current methodology might allow regulated entities to avoid an economic penalty for their emissions and will not generate sufficient revenue to support the Administration’s climate policy goals. While some stakeholders continue to advocate for a zero allocation, under such a scenario California producers would face competitiveness challenges that would lead to economic and emissions leakage. As California producers lose sales to producers outside California, the state’s economy suffers and greenhouse gas (GHG) emissions transfer from California to other states. Thus the challenge facing ARB is to design an allocation policy that is most likely to minimize the adverse impact of trade exposure on energy intensive, trade exposed (EITE) industries.

The question at the heart of this challenge is how many allowances ARB should allocate to various industry sectors in order to effectively minimize leakage, protect the environmental goals of the Cap-and-Trade program, and protect the California economy. In the current proposal, ARB seeks to accurately evaluate the market performance impacts of its proposed trade exposure policy, including identifying every market that would increase production in response to increased production costs in California and the emissions change in those markets.

Such an evaluation leads to three possible outcomes:

1. ARB perfectly identifies the number of allowances to allocate in order to minimize leakage.
2. ARB allocates more allowances than what is needed to minimize leakage.
3. ARB allocates an insufficient number of allowances and will not minimize leakage.

While ARB may be seeking outcome 1, given the uncertainty of such an exercise, it is very unlikely ARB would perfectly identify the number of allowances needed to minimize leakage. The probability of result 1 is not only small, but with so few robust studies upon which to base its trade exposure assessments, it is impossible to accurately estimate this probability. If ARB’s prediction is too low, leakage is more likely to occur. Given this inherent uncertainty, ARB must consider outcomes 2 and 3.

Outcome 2 provides EITE industries more allowances than needed to minimize leakage. In theory, this approach would provide California producers value they do not need to remain competitive with non-California producers. However, outcome 2 would still maintain the environmental incentives provided by the Cap-and-Trade program. California producers would face the emissions cost associated with the declining cap, either directly or as an opportunity cost. California producers would likely react to the environmental incentives under outcome 2 in precisely the same manner as they would under outcomes 1 or 3. Since the allocation is greater than what is needed to minimize leakage, the GHG emissions reduction goal is protected.

Outcome 3 provides EITE industries with fewer allowances than needed to minimize leakage. Under this scenario, California producers would become less competitive with non-California producers, and as a result some of the emissions reduced in California would truly be transferred to other states. Outcome 3 would achieve the GHG emissions reduction goal by forcing California facilities to reduce throughput or shut down, leading to both emissions and economic leakage. In addition, since California facilities tend to operate more efficiently than facilities in other jurisdictions, any such leakage to other jurisdictions would likely result in a net increase in GHG emissions.

Of the three possible outcomes, 1 and 2 protect the environmental goals of the Cap-and-Trade program while outcome 3 does not. However, because ARB is unable to predict allocation needs in any industry sector with a high degree of precision, further attempts to pursue outcome 1 could jeopardize Cap-and-Trade emission reduction goals. Thus, if ARB views the program’s environmental goals as paramount, then it must pursue outcome 2 to ensure that outcome 3 does not occur. WSPA also encourages ARB to consider conditional allowance allocation metrics that would allow it to course correct if and when necessary.

**Proposed Post-2020 Allowance Allocation Issues**

ARB is proposing to use highly uncertain and heavily caveated studies to make decisions that could have major adverse impacts on California jobs and the economy. Table 8 of ARB’s Cap-and-Trade Regulation Industry Assistance Factor Calculation Informal Staff Proposal (October 14, 2016) and the November 10, 2016 addendum forecast dramatic reductions in industry assistance for most regulated sectors. In many cases, these proposals are less than half of the assistance factors provided in the current regulation.  As we reiterate below, the authors of the research underpinning these proposals caution against the very conclusions ARB is drawing from their studies.

ARB represents the study findings and its own supporting analysis as accurate predictors of future circumstances in specific industry sectors, despite the many assumptions upon which they are predicated, lingering uncertainty about the feasibility of the Administration’s GHG emissions reduction targets, and the increasingly urgent need for more cost-effective approaches as the statewide cap declines. ARB is contemplating a leap of faith analogous to approving a drug based on a single study that does not have conclusive results. As we indicate above, erring on the side of greater leakage protection would still ensure the state’s ability to achieve the targeted GHG reductions. Thus there is no need to gamble the program’s environmental goals and the state economy on the accuracy of ARB’s long term predictions.

1. **Limitations of Foundational Research**

ARB should not base its post-2020 allocation policy decisions on the leakage risk studies conducted by UC Berkeley and Resources for the Future (RFF). In both cases the study authors acknowledged data limitations and methodological uncertainties that compromise the predictive power of the results. The UC Berkeley authors stated that: “The imprecision of our estimates makes it difficult to estimate leakage potential for any particular industry with any degree of precision.” The RFF authors cite uncertainties in historical energy price variation and plant investment decisions. Both authors expressly caution against using their studies to predict future market outcomes.

Apart from the study authors’ caveats, regression models based on historical markets cannot reliably predict future market behavior, especially in light of the transformational changes ARB envisions in the post-2020 timeframe. ARB’s proposed methodology relies on unrealistically low long-term estimates of carbon prices. Proposed changes to the Cap-and-Trade regulation and other sector-specific climate policies ARB is contemplating to achieve the SB 32 target will likely result in higher carbon prices, increasing leakage risk for most industry sectors and necessitating higher levels of trade exposure protection than currently proposed.

WSPA also notes that the UC Berkeley estimates are based on the premise that California facilities can only reduce their emissions by curtailing production.[[7]](#footnote-7) This premise is at odds with ARB’s characterization of the Cap-and-Trade program – “Market forces spur technological innovation and investments in clean energy.”[[8]](#footnote-8)

For these reasons, the proposed methodology for estimating leakage risk and resulting assistance factors are no more defensible than ARB’s current energy intensity and trade exposure-based approach.

1. **Transparency and Collaboration**

The data and code used to develop the leakage risk factors is not available for stakeholders to reproduce the outcomes.  For example, as noted below, ARB does not disclose the source data supporting its assumptions regarding percentage of energy generated on-site in various industry sectors.[[9]](#footnote-9) Using confidential data precludes transparency and prevents external review and public accountability. If ARB truly intends transparency, as described in slide 35 of the October 21, 2016 staff presentation, then it needs to provide stakeholders the ability to conduct a detailed review of the proposed methodologies.

Ironically, the proposed assistance factor changes, combined with other proposed Cap-and-Trade and MRR changes, promise much more uncertainty at a time when Cap-and-Trade program stakeholders need greater long term certainty.

1. **Price Impact of Allocation Methodology**

ARB and some stakeholders seem to believe that the current approach to industry allocation has served to drive allowance prices downward. However, ARB still fails to acknowledge the fact that more than 80% of the emissions reductions anticipated under the current Scoping Plan depend on complementary policies. It bears repeating that sector-specific regulatory programs dampen the Cap-and-Trade market. Overlapping direct measure policies on some Cap-and-Trade-regulated sources reduces pressure on other capped sources such that there is a larger surplus of Cap-and-Trade allowances, which in turn suppresses allowance prices. This strategy only serves to increase total program costs and shifts emissions from one sector to another. Doubling down on direct control measures for post-2020 emissions reductions, as is currently being advocated by some stakeholders, will continue to artificially suppress allowance prices, regardless of how ARB allocates allowances.

1. **Carbon Price Differential**

ARB has stated that leakage potential decreases when other jurisdictions *implement* a carbon price for the same sectors regulated by California. We agree, but remind ARB that the status of carbon regulations in other jurisdictions has not changed meaningfully since the last round of Cap-and-Trade amendments in 2014. With the exceptions of Quebec (2014), South Korea (2015) and Ontario (anticipated in 2017), all small markets that collectively represent about 1% of global GHG emissions, Cap-and-Trade programs in other jurisdictions are either proposed or conceptual and implementation is not imminent. In particular, the Paris accords are non-specific and non-binding.

Moreover, the carbon price differential matters. To prevent emissions and economic leakage and truly level the playing field between California and its “trading partners”, carbon prices must be equivalent across jurisdictions. At this point in time, countries and states that trade with California do not have equivalent carbon prices, and this disparity creates additional economic incentive to increase imports of globally traded commodities like crude oil and refined products. Therefore, ***any*** reduction in assistance factors will create added pressure for potential leakage of GHG emissions to other regions.

1. **Technical and Petroleum Sector-Specific Issues**
   1. **Proposed Trade Exposure Methodology**

ARB “corrected” obviously wrong positive values either by adjusting those values to zero, or adjusting them downward “to match an average level of decrease in value added and/or output based on sectors with similar energy intensities”[[10]](#footnote-10), rather than throwing out the spurious results.[[11]](#footnote-11) These decisions require further explanation and clarification. On their face, they call into question the equations/regressions derived using what is effectively manipulated data. The fact that the results contain obviously wrong positive values also calls into question the accuracy of the rest of the results. ARB staff acknowledged the unreliability of the data during the October 21 workshop by stating on slide 30 that data “smoothing” was recommended by the UC Berkeley researchers. Moreover, commenters stated that this “smoothing” only normalized the balance of the data. It did not fill or otherwise address data gaps and limitations. Using this data as the basis for evaluating sector leakage renders ARB’s proposed methodology arbitrary and inherently unreliable.

Similarly, ARB corrected non-studied sector leakage factors by using linear regressions to back out fuels such as coal that were included in the US Census data.[[12]](#footnote-12) ARB should use reliable and representative data to calculate these factors, and not resort to unproven methodologies to “correct” the data.

* 1. **Estimated Floor Prices**

The floor prices established and used by the UCB and RFF studies ($10 and $24 respectively) are unrealistic. The researchers noted that elasticity is impacted by price. ARB’s newly proposed policies intend to increase investment signal by increasing allowance price. This is a prime example of why using historical data to predict the future is inappropriate. ARB must document the assumptions embedded in its 2030 floor price estimate ($24.88 per MTCO2e). The marginal compliance cost used in the analysis is low and does not fully reflect the true cost of compliance related to complementary measures. In addition, it’s not entirely clear whether ARB used the same carbon price for manufacturing sectors with non-purchased fuel.[[13]](#footnote-13)

* 1. **Energy Produced On-Site**

WSPA agrees in concept with ARB’s proposal to adjust assistance factors to account for on-site energy production. However, ARB’s estimate of the fraction of total emissions from consumption of fuels purchased by refineries[[14]](#footnote-14) is 20% higher than the Western Region refinery data reported by the Energy Information Administration (EIA)[[15]](#footnote-15). Based on current EIA data, refinery energy produced onsite accounts for 60% of refinery energy consumption, meaning purchased fuels account for 40%. ARB does not provide a reference for its proposed 60% estimate. It is also not possible to determine where the non-purchased fuel is accounted for in Table 4-5. ARB’s assumption underestimates refinery leakage risk and diminishes the trade exposure protection that would otherwise be afforded to refineries under ARB’s proposed methodology.

* 1. **Refining Data Set**

The data set is not representative of refining and may not be representative of many other industry sectors.The International Market Transfer study (UC Berkeley) is based on a ***single*** data set that covers 50,000 sources (Annual Survey of Manufacturers). The ASM data does not take into account changes in industry-specific markets. Using this data set can therefore mask the impact of changes in energy prices and understate leakage risk. A third party review by National Economic Research Associates (NERA), states that accurate assessment of leakage risk requires use of process models that capture sector-specific production details. The refining sector would be better represented by EIA 810 and 820 reports.

* 1. **Hydrogen Plant Emissions**

WSPA remains concerned that failure to properly account for emissions from on-site hydrogen production (which is 20-30% of total refinery emissions) will understate refinery energy intensity. This mistake would lead to the false conclusion that these facilities are better insulated from the economic impacts of California’s climate programs, and therefore can sustain lower levels of industry assistance. ARB must be transparent in how it addresses this refinery-specific circumstance.

* 1. **Non-Manufacturing Sectors – November 10 Addendum**

In the October 21, 2016 addendum to staff’s informal allowance allocation proposals, ARB indicated it was reconsidering its earlier proposal to estimate leakage risk for the oil and gas sector and other “non-studied” sectors based on estimates derived from “similar” studied sectors. We support this decision. ARB should not attempt to apply the UC Berkeley and RFFI manufacturing sector studies, nor any regression analysis, to non-manufacturing sectors. ARB has acknowledged that the US Census data is not well suited to the non-studied sectors because it does not differentiate among the fuels used in California. Moreover, extending the results of the manufacturing sector research to non-manufacturing sectors without regard to the limitations expressly identified by the study authors would only compound the error embedded in the proxy leakage risk estimates. This approach would likely lead to findings that are less representative of non-manufacturing sectors than ARB’s current energy intensity and trade exposure-based approach, resulting in inadequate assistance factors that will promote rather than prevent leakage.

In light of these facts it is unclear why, in the November 10, 2016 addendum to staff’s informal allowance allocation proposals, ARB chose to reverse course and use the US Census data for manufacturing sectors to estimate the domestic leakage potential for non-studied sectors, and apply regressions developed for “studied” manufacturing sectors to define allowance allocation factors non-studied sectors. Preliminarily, WSPA has several significant concerns with the November 10 addendum related to ARB’s estimation of energy intensity for California oil and gas operations.

ARB defines energy intensity as “the fraction of total costs coming from energy consumption”.  WSPA infers from this definition that energy intensity for the oil and gas sector is the total energy costs divided by the total cost to extract and treat oil and gas prior to sale, where:

* Total energy costs include the cost of electricity, natural gas, and in the case of thermally enhanced oil production, any purchased steam.
* Total costs to extract include energy cost, capital costs and non-energy expenses including overhead.

In an attempt to verify ARB’s energy intensity estimates in the November 10 addendum, one WSPA member calculated energy intensities for 10 oil fields.  Eight of these oil fields employ steam injection used for enhanced oil recovery (EOR).  Two of these oil fields employ primary oil production methods.  Energy intensities were calculated for each field for 2015 and 2016 to date. The oil fields employing EOR had energy intensities of 0.222 for 2015 and 0.211 for 2016.  The non-EOR oil fields had energy intensities of .074 for 2015 and 0.092 for 2016.

The November 10 Addendum listed an energy intensity estimate of 0.050 for the oil and gas sector (Table 1, page 7), which is significantly lower than the observed values noted above.  WSPA has reviewed the US Census data footnoted on page 1 of the Addendum and has not been able to identify the actual data or the methodology ARB used to develop their energy intensity estimate.  Given the higher energy intensity typical of California EOR production, and the fact that the majority of EOR production in the US occurs in California, use of US national energy intensity averages would significantly understate the actual energy intensity of California oil and gas operations. This approach would penalize California producers by yielding a lower allowance allocation factor than is warranted based on their actual energy intensity.

WSPA requests that ARB reevaluate the appropriateness of energy intensity estimates used in the November 10 Addendum and work with WSPA members to collect a broader set of data from all (or a representative sample) of the California producers to ensure they accurately reflect the range of actual California oil and gas production operations.

* 1. **Alternative Methodologies for Non-Studied Sectors**

In response to staff’s solicitation for comments on alternative methodological approaches for “non-studied” sectors, we refer ARB to NERA’s prior recommendation to use a computable general equilibrium (CGE) model, which can actually address sector-specific circumstances.[[16]](#footnote-16) The attached appendix summarizes NERA’s comments and recommendations on ARB’s contractor reports relevant to petroleum sectors.

* 1. **Calculation of Assistance Factors**

ARB needs to provide more documentation to explain how staff calculated the proposed Assistance Factors (AF). There are too many inconsistencies in the averaging and calculations of the AFs to trust the results presented in Table 7 of the October 21, 2016 addendum. For example, the average IMT for refineries is calculated in Table 1 to be 11% by averaging 12% and 11%. We request that ARB provide sufficient additional data to clarify that this calculation is correct. Also, Table 7 has a 0 for “Value Added Domestic AF Component”. We might expect this value to be 0.3 pursuant to Table 4, but it is difficult to determine what it should be since ARB does not fully explain how the tables were derived. WSPA specifically requests that ARB provide the spreadsheets it used to calculate the Assistance Factors.

* 1. **International Assistance Factor**

ARB states on page 5 of the Initial Statement of Reasons that “staff set the international assistance factor component equal to the average of the raw IMT and regression IMT.” CARB should explain its rationale for this approach. As described in the UC Berkeley study (page 39), the international market transfer rate (IMT) is a measure of “the increase in foreign imports plus the reduction in domestic exports (measured in dollar terms) associated with a dollar reduction in domestic production.” While it may be reasonable to assume that this measure is related to the appropriate Assistance Factor for a given sector, it is not clear why the international component of the Assistance Factor should precisely equal the IMT.

* 1. **Basis for Assumed Domestic Price Drop**

ARB assumes a 7% domestic drop at a 2022 floor price (SRIA price of $17) equivalent to a 10.245% domestic drop at 2030 floor price. WSPA requests that ARB clarify the basis for the 7% cutoff “Domestic Drop” (DD) value.

**Market Data Disclosure**

WSPA opposes release of market sensitive information on holding and compliance accounts. We maintain that all data pertaining to the market positions of individual entities, along with information about corporate associations, should be designated as confidential business information (CBI) and should be protected from public disclosure. As we have stated in previous written comments, public disclosure of this information could increase the potential for market manipulation and decrease overall market liquidity. The draft concepts for additional market information disclosures presented during the October 21 public workshop serve no purpose that is not already addressed by the large amount of data available on emissions and offsets.

WSPA agrees that market trend analysis is important, and sufficient data to support such analysis should be publicly available. For example, ARB should report information concerning surrender of offsets for compliance purposes. However, this objective should be achieved through aggregation and de-identification of individual participant data. ARB should reach out to market participants prior to posting market data or reconfiguring existing aggregated data to ensure that it does not inadvertently disclose CBI.

WSPA appreciates ARB’s consideration of our comments and we look forward to your responses. If you have any questions, please contact me at this office, or Tiffany Roberts of my staff at [troberts@wspa.org](mailto:tiffany@wspa.org).

Sincerely,



Enclosure

cc: Richard Corey - ARB

Edie Chang - ARB

Mary Jane Coombs – ARB

Tiffany Roberts - WSPA

**Appendix**

**Summary of NERA Comments and Recommendations on ARB Contractor Trade Exposure Reports**

* Using data on a large number of industries with heterogeneous characteristics risks confounding the effects of changes in specific markets on those industries with the effects of changing energy prices.  “For example, crude oil prices varied widely over the period but their effect on refining is not represented.  Thus if crude oil prices were falling during a sub-period when natural gas prices were rising, the regression analysis might conclude that refinery output was relatively insensitive to increases in the prices of natural gas and electricity.”[[17]](#footnote-17)
* As noted above, the omission of energy sources consumed at California refineries other than natural gas and electricity (e.g., fuel-gas, petroleum coke, and fuel oil) results in underestimating the energy intensity of those refineries.  “To the extent that California refineries are less energy intensive than refineries outside California, this omission leads to an understatement of the leakage that would occur if output from California refineries were displaced by output from refineries outside the state.”[[18]](#footnote-18)  This omission renders the current analyses in both studies to be inappropriate for the refining section.
* Proper assessment of leakage risk for petroleum refining requires use of process models that capture specific production details.  “The combination of low value-added, sunk investments, process plus fuel use emissions and low cost national and international transportation of products make it impossible to capture in a simple econometric model or production function an accurate picture of the regional shifts in refinery activity likely to be caused by California-only carbon policies.”  NERA indicates that process models can only be used to approximate leakage if they contain data for all competing refineries in the US and overseas, or if they are linked to computable general equilibrium (CGE) models to capture the interindustry and indirect effects of changes in fuel prices and refined product production.[[19]](#footnote-19)
* Regression models are based on past market structure and cannot accurately predict future changes in market behaviour.  “As one example, the regression analysis cannot capture the effects of changes in the marketplace that could cause an industry that is currently not trade exposed to become trade exposed.  Specifically, the regression model cannot anticipate the future implications of California’s shrinking demand for transportation fuels and the pressure this would place on California refineries to sell product to markets outside the state when the refining sector is put into the Cap-and-Trade system.”[[20]](#footnote-20)

1. Health and Safety Code Section 38570(b)(2) [↑](#footnote-ref-1)
2. Health and Safety Code Sections 38560, 38561, 38562 and 38564. [↑](#footnote-ref-2)
3. Letter from Mr. Richard Corey, Executive Officer of the Air Resources Board to Mr. Jack Broadbent, Chief Executive Officer of the Bay Area Air Quality Management District, dated September 17, 2015.

    [↑](#footnote-ref-3)
4. Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, Initial Statement of Reasons, page 13. [↑](#footnote-ref-4)
5. Energy Efficiency and Co-Benefits Assessment of Large Industrial Sources; Refinery Sector Public Report; California Air Resources Board Stationary Source Division; June 6, 2013: <http://www.arb.ca.gov/cc/energyaudits/eeareports/refinery.pdf> [↑](#footnote-ref-5)
6. Air Resources Board staff presentation, Energy Efficiency and Co-Benefits Assessment Public Reports Workshop, June 30, 2015, slide 30: https://www.arb.ca.gov/cc/energyaudits/meetings/063015/presentation.pdf. [↑](#footnote-ref-6)
7. Measuring Leakage Risk, Meredith L. Fowlie, Mar Reguant, and Stephen P. Ryan, May, 2016, page 14: “Domestic producers emit damaging pollution at a constant rate of ed per unit of qd...” [↑](#footnote-ref-7)
8. https://www.arb.ca.gov/cc/capandtrade/ capandtrade.htm [↑](#footnote-ref-8)
9. Cap-and-Trade Regulation Industry Assistance Factor Calculation Informal Staff Proposal, Table 2, October 14, 2016. [↑](#footnote-ref-9)
10. Ibid, Figure 6, item 3, page 9. [↑](#footnote-ref-10)
11. Ibid, page 14. [↑](#footnote-ref-11)
12. Ibid, page 3. [↑](#footnote-ref-12)
13. Ibid, page 12. [↑](#footnote-ref-13)
14. Ibid, Table 2 (60%). [↑](#footnote-ref-14)
15. US Energy Information Administration data for PADD 5 refineries, 2014. [↑](#footnote-ref-15)
16.  [↑](#footnote-ref-16)
17. NERA report, page 15. [↑](#footnote-ref-17)
18. NERA report, page 15. [↑](#footnote-ref-18)
19. NERA report, page 24. [↑](#footnote-ref-19)
20. NERA report, page 13. [↑](#footnote-ref-20)