Western States Petroleum Association

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Catherine Reheis-Boyd

President

April 10, 2017

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

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

Subject: WSPA Comments on ARB's 2017 Climate Change Scoping Plan Update

Dear Ms. Sahota:

The Western States Petroleum Association (WSPA)—a non-profit trade association representing companies that explore for, produce, refine, transport and market petroleum, petroleum products, and other energy supplies in California and four other western states—appreciates the opportunity to provide comments on the Air Resources Board's (ARB) 2017 Climate Change Scoping Plan Update.

We are encouraged by the Board's decision to postpone adoption of the Scoping Plan Update to a later date and look forward to the opportunity to work with the Board and staff to further develop the plan. The additional time should allow for a more robust public process.

The additional time is also necessary because the current proposal has several placeholder statements indicating ARB's intent to provide additional information at some future date. This additional information will be important for Board members to have in order to fully review and deliberate Scoping Plan policy options.

The Board's need for additional information was evident in their comments at the February 16th Board meeting, where Board members requested more detail, including better data on the alleged correlation between GHG and criteria pollutant emissions, estimates of potential "green jobs" under the staff proposal, the ability of individual sectors to reduce GHG emissions and uncertainties related to the proposed use of USEPA's Social Cost of Carbon methodology. All stakeholders would benefit from having this additional information as well as greater clarity on the remaining steps in this update process.

The following comments include specific recommendations for the next draft of the 2030 Scoping Plan Update and related Cap-and-Trade amendments, summarized here for ease of reference:

1. ARB should issue a complete revised Scoping Plan Update proposal for a full 45-day public comment period.

2. ARB should base this revised proposal on the "All Cap and Trade" scenario which staff acknowledges is a) the least cost path to achieving 2030 target emissions reductions and b) achieves public health benefits that are comparable to the "Proposed Plan" scenario.[1]

3. ARB should further amend its current proposals for the Cap-and-Trade regulation to restore trade exposure protection in order to minimize the risk of emissions and economic leakage and avoid escalating costs. In addition, current program design features and staff proposals, such as for the Allowance Price Containment Reserve, should be restructured to remove artificial market constraints that would increase the risk of market disruptions and allowance price volatility.

4. ARB should eliminate the proposed refinery measure and reassure policymakers that the Cap-and-Trade program will result in direct GHG emissions reductions at individual facilities. There is no need for additional direct measures to satisfy AB 197 (Garcia, 2016) requirements.

5. ARB should provide complete documentation of the economic feasibility analysis it conducted on all Scoping Plan scenario alternatives for stakeholder review and comment. This would also allow time for stakeholders to review the regional economic and environmental analyses that ARB indicated during the March 28th workshop would be forthcoming.

6. To mitigate misinformation and reduce stakeholder confusion, ARB should more clearly differentiate the role of state climate programs - to reduce GHG emissions - from the many criteria and toxic air contaminant programs designed to deliver local and regional air quality benefits.

I. Unresolved Issues

Our review of the draft document finds the following issues remain unresolved:

- WSPA appreciates ARB's inclusion of a Cap-and-Trade focused scenario (All Cap-and-Trade Scenario Alternative 3) in Section II of this proposal. We find that a more robust consideration of this scenario is merited. For example, while the summary data provided in the staff presentation for the March 28, 2017 workshop is helpful, ARB should provide the full economic impact analysis information for this scenario in Appendix E. The summary data is helpful in that it allows for direct comparison of each alternative with the Proposed Plan scenario[2], but ARB should document how these estimates were developed in the next draft of this Scoping Plan Update for 45-day stakeholder review and comment.

- The Scoping Plan Update retains the 20% refinery efficiency measure in the Proposed Plan scenario, despite ARB's inability to identify viable pathways to achieve the targeted reductions and the fact that it conflicts with the findings from ARB's 2013 energy efficiency audit for this sector. ARB actually argues against source-specific measures under Alternative 4 (Cap and Tax), citing potential production cuts, emissions and economic leakage (page 53). The staff

[1] *2017 Scoping Plan Update – The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target,* California Air Resources Board, March 28, 2017, slides 18 and 23.
[2] Ibid.

presentation for the March 28 public workshop specifically states that "Reducing refinery production could have a large impact on fuel prices" and "Reduced production in California will likely lead to leakage of employment and production out of state" (Slide 29). Similar findings are presented by ARB in Appendix J of the original Cap-and-Trade regulatory proposal (2010, pages 40-43). ARB's own findings make the case that the refinery measure should be abandoned.

- ARB retains the 18% carbon intensity reduction target for the Low Carbon Fuel Standard despite the well documented uncertainty of achieving the current 10% by 2020 target, the impending (2017) review of that target, and the fact that it is one of the least cost-effective emission reduction strategies identified in the Proposed Plan scenario[3].

- ARB acknowledges that the Social Cost of Carbon methodology attributed to USEPA is still a work in progress, and yet proposes to use it to adjust economic impact estimates for Scoping Plan scenarios as if it were consensus government policy. [4] It also bears repeating that while AB 197 requires consideration of "social costs", it does not require use of this methodology.

- ARB continues to rely heavily on the PATHWAYS model to support the Proposed Plan scenario. PATHWAYS underestimates costs for key variables, ignores potential barriers to consumer acceptance while requiring changes in lifestyle and living environment and does not evaluate the feasibility of any of the given policy scenario. The few changes in the proposed Scoping Plan Update which appear responsive to problems previously identified by ICF Consulting[5] actually introduce new problems. For example, use of the Biofuel Supply Module to address lifecycle transportation emissions understates the cost of finished fuels and their delivery to California.

WSPA requests that ARB reconsider these issues and the balance of our comments on ARB's discussion draft[6] that are not reflected in this Scoping Plan Update.

II. ARB 2030 Target Scoping Plan Update Objectives – Proposed Plan vs. All Cap-and-Trade

[3] A separate analysis by NERA Economic Consulting (*Economic Impacts of Major California Climate Change Goals, August 2, 2016*) estimated that achieving a ***15%*** reduction in carbon intensity by 2030 would cost in excess of $900 per metric ton. This document was submitted to ARB on August 10, 2016 by the California Manufacturers and Technology Association (CMTA) in response to ARB's June 17, 2016 Scoping Plan Update Concept Paper.


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[4] Technical support documents for estimating the Social Cost of Carbon, methane and nitrous oxide have been withdrawn pursuant to the Energy Independence and Economic Growth Executive Order issued on March 28, 2017: https://www.whitehouse.gov/the-press-office/2017/03/28/presidential-executive-order-promoting-energy-independence-and-economi-1.

[5] *Review of E3 PATHWAYS Modeling*, ICF Consulting, December, 2016.

[6] *WSPA Comments on ARB's discussion draft 2030 Target Scoping Plan Update*, submitted December 16, 2016:


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WSPA generally agrees with ARB's findings in Section II D that the non-Cap-and-Trade policy scenarios (Alternatives 1, 2 and 4) do not achieve the policy objectives in Section II C. Accordingly, these alternatives should be eliminated from further consideration. However, we challenge ARB's assertion that the Proposed Plan scenario would be the most effective approach to achieving the Section II C policy objectives. ARB should reconsider its current position in light of the following observations and recommendations.

Achieve the 2030 target

Under both the Proposed Plan scenario and the All Cap-and-Trade scenario, the declining cap ensures that the 2030 GHG emissions reduction target will be achieved. Alternatives 1, 2 and 4 are highly unlikely to meet the 2030 GHG target. However, greater reliance on sector-specific measures under the Proposed Plan scenario increases overall program uncertainty as well as the risk of future market disruptions and reactive policy changes. For example, if certain measures prove to be technologically infeasible or cost prohibitive, the Cap-and-Trade program to will have to compensate for the underperforming measures.[7] This outcome offers no advantage in terms of achieving the 2030 target, but could result in stranded assets and investments, emissions leakage and localized and statewide economic impacts.

Provide direct GHG emissions reductions

ARB has stated publicly that the Cap-and-Trade program will result in direct emissions reductions at regulated facilities. Thus, there is no need to add new stationary source measures to the current suite of programs to satisfy the requirements of AB 197. Moreover, given ARB's own findings about the potential pitfalls of direct measures noted under Section I above, adding new stationary source measures would be in direct conflict with ARB's statutory mandate to minimize emissions and economic leakage.[8]

Provide air quality co-benefits

The proposed Scoping Plan Update document and related public discussions are largely silent on the extensive network of existing air quality regulatory programs. These programs have reduced regional and localized emissions of criteria and hazardous air pollutants such as ozone forming pollutants by 50% and toxic air contaminants by 80% since 1990 from all criteria and toxic air emission sources.[9] Sources subject to the Cap-and-Trade program account for only 5% of total criteria air pollution. In addition, ARB's assumption of a 1:1 relationship between changes in GHGs, criteria pollutants and toxic air contaminants (Table III-1, page 57), without reference to any empirical evidence, contributes to the growing misinformation about the value of its own programs. ARB's own analysis showed less than a 1% additional improvement in criteria pollutant reductions when measures are implemented to reduce GHGs.[10]

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[7] *The 2017 Climate Change Scoping Plan Update*, California Air Resources Board, January 20, 2017, Figure II-2 ("Uncertainty Scenario"), page 41.
[8] Health and Safety Code § 38562(b)(8).
[9] *California's Progress to Clean Air*, California Air Pollution Control Officers Association, 2015, page 4.
[10] *Air Resources Board Proposed Cap and Trade Regulation, Appendix P – Co-Pollutant Emissions Assessment*, October, 2010: https://www.arb.ca.gov/regact/2010/capandtrade10/capv6appp.pdf.

Minimize emissions leakage

Greater reliance on sector-specific measures such as the proposed Refinery Measure increases the marginal costs of production in California relative to jurisdictions without comparable regulations, increasing the risk of emissions leakage. The All Cap-and-Trade scenario allows greater flexibility to achieve required emission reductions at a lower cost, mitigating the competitive disadvantage faced by in-state producers. This approach clearly provides greater leakage protection than the Proposed Plan scenario and thus is more responsive to ARB's statutory mandate to minimize emissions leakage.[11]

Support climate investment in disadvantaged communities

A well designed Cap-and-Trade program will generate a stable revenue stream to support climate-related investments in both urban and rural disadvantaged communities. By contrast, continued expansion of complementary measures will tend to depress the carbon market and increase the frequency of undersubscribed auctions. This leads to the misinformed view that Cap-and-Trade is not achieving reductions, when in fact the complementary measures are undermining the efficacy of the Cap-and-Trade program. A February, 2017 report from the Legislative Analyst's Office identifies complementary policies as a likely contributing factor to the low demand for allowances at recent auctions.[12] Thus, the state's ability to fund climate investments in any community will be less certain under the Proposed Plan scenario than under the All Cap-and-Trade scenario.

Protect public health

As noted above and documented in ARB's analysis supporting adoption of the original Cap-and-Trade regulation[13], protection of public health at the regional and local level is achieved predominantly through successful and ongoing criteria and toxic air pollution regulatory mechanisms unrelated to California's climate programs. ARB further acknowledges in the staff presentation for the March 28 public workshop that the Proposed Plan scenario will not result in better public health outcomes than the All Cap-and-Trade scenario (slide 18).

Facilitate sub-national and national collaboration

California is much more likely to advance global climate objectives through effective climate program leadership than solely through in-state GHG emission reductions attributable to its own programs. A well-designed Cap-and-Trade program that accounts for the majority of emissions reductions between 2021 and 2030 would send an important signal to sub-national and international jurisdictions, including potential linkage partners, that California is committed to a stable market-based program. In addition, program features such as compliance offset credits create mechanisms by which other jurisdictions can participate in the carbon market and deliver GHG emissions reductions ahead of their own regulatory actions. By contrast, policies that constrain compliance flexibility and

[11] Health and Safety Code § 38562(b)(8).
[12] *The 2017-18 Budget: Cap-and-Trade*, Legislative Analyst's Office, February, 2017, page 14.
[13] *Air Resources Board Proposed Cap and Trade Regulation, Appendix P – Co-Pollutant Emissions Assessment*, October, 2010: https://www.arb.ca.gov/regact/2010/capandtrade10/capv6appp.pdf.

increase program costs, such as greater reliance on sector-specific measures, sharp reductions in industry assistance and new restrictions on offset use, discourage collaboration with other jurisdictions.

Support cost-effective and flexible compliance

ARB acknowledged in staff presentations during the February 9 public workshop (slides 36-37) and the March 28 public workshop (slide 23) that the All Cap-and-Trade scenario is the least-cost approach among all the alternatives evaluated in the proposed Scoping Plan Update. Greater reliance on Cap-and-Trade provides greater flexibility to compliance entities to achieve more cost-effective emissions reductions in a manner that reduces the administrative burden of implementing and complying with GHG regulations, consistent with ARB's statutory mandates.[14]

Support Clean Power Plan and other federal action

To the extent that the federal Clean Power Plan (CPP) survives the pending judicial challenge, the Proposed Plan scenario does not provide a clear advantage relative to the All Cap-and-Trade scenario as a CPP compliance mechanism. Presumably, either plan would provide a sufficient basis for an equivalency determination by USEPA.

Based on all of these findings—which by and large are derived from ARB's own analysis—ARB should base the 2030 Target Scoping Plan Update on the All Cap-and-Trade scenario since it clearly provides the best path forward on all counts.

III. Program Isolation and Leakage Risk Under Proposed Plan

ARB acknowledges its inability to predict innovation patterns or potential costs and benefits of the measures in its Proposed Plan scenario (page 67). However, it continues to embrace unproven technologies and expectations of widespread climate action by other jurisdictions. At the same time, it fails to incorporate reasonable safeguards to prevent emissions leakage and economic dislocation in the event that real world conditions do not track the agency's vision for the future.

The commitments made by most international jurisdictions to date are conditional or intensity based, or both. Further, jurisdictions with GHG emissions profiles comparable to California have established much more modest targets. For example, Australia's GHG emissions are about 1.5 times those of California. Australia has pledged a 26-28% reduction in emissions in 2030, but using 2005 emission levels as its baseline. For the comparable time period, California is targeting reductions of about 45%. Malaysia's GHG emissions are approximately half those of California. Malaysia has committed to an *emissions intensity* reduction of 35% from 2005 to 2030, with an additional 10% conditional on external support.[15]

The actions of these and other jurisdictions, and the reality that California will not realize climate benefits from its own unilateral actions, suggest that it would be reckless for California to pursue its post-2020

[14] Health and Safety Code § 38562(a) and (b)(7).
[15] *Paris 2015: Tracking country climate pledges*; September 16, 2015: https://www.carbonbrief.org/paris-2015-tracking-country-climate-pledges.

targets in the absence of course correction mechanisms to address both foreseeable and unforeseeable circumstances.

ARB dismisses an estimated economic impact of 0.5% of state GDP, based on model runs of the Proposed Plan scenario, as insignificant. This estimate equates to approximately 100,000 jobs. During the February 9 public workshop, Professor James Bushnell (UC Davis) stated that this estimated loss could be much greater if potential impacts are not modeled correctly. It is also important in this context to observe that the 7% "domestic drop" benchmark used in calculating ARB's proposed industry assistance factors for a post-2020 Cap-and-Trade program is equivalent to the drop in economic output during the Great Recession.[16] California lost approximately one million jobs during this recession.

ARB claims the California industrial sector is the largest in the US, but it is well established that California is losing ground to other states, and that trend is likely to accelerate under ARB's Proposed Plan scenario. According to the National Association of Manufacturers[17], if current rates of industrial growth are maintained, Texas will overtake California as the largest manufacturing economy in the U.S. in less than 5 years. In 2015, the last year for which U.S. manufacturing investment data is available, California ranked among the lowest of all the states, attracting only 1.5% of total U.S. manufacturing investments.[18] This is even before considering the potential for more aggressive GHG emissions reduction measures to further degrade the competitiveness of industry in California. We note that ARB cites Tesla's Fremont plant as a model for the new California economy (page 94), but neglects to mention that Tesla specifically chose to build its battery plant in Nevada instead of California. Tesla's actions are better characterized as an indicator of the decline of California manufacturing.

IV. Refinery Measure Assumptions

ARB's proposed refinery measure is not likely to provide additional reductions in criteria pollutants or toxic air contaminants and will not yield additional GHG reductions. ARB staff estimates that the proposed Refinery Measure would reduce PM 2.5, the criteria pollutant most commonly associated with localized health impacts, by less than 0.1 ton per day. ARB has offered no evidence that these minimal reductions would not be achieved under the State Implementation Plan. The refinery measure is also one of the least cost-effective measures identified in staff's Proposed Plan, with estimates ranging from $70-$200 per metric ton of GHG (page 65). Recent investments in energy efficiency upgrades in this sector documented by ARB[19] suggest that there are limited opportunities for additional efficiency gains. The 20% target assigned to this measure seems infeasible under any conceivable program design alternative. The refinery measure does not provide additional greenhouse gas reductions because refineries are already under the cap. Any GHG reductions achieved by refineries will be negated by increases in emissions from other sectors under the cap.

V. Mobile Source Assumptions

[16] https://www.minneapolisfed.org/research/economic-policy-papers/accounting-for-the-great-recession
[17] http://www.nam.org/Data-and-Reports/State-Manufacturing-Data/
[18] http://www.cmta.net/multimedia/20160516_mfg_investments_by_state_2015.pdf.
[19] ARB's own energy efficiency and co-benefits audits for the refining sector have demonstrated that an additional 20% reduction in energy use from this sector is not feasible.

WSPA has noted in comments on prior iterations of this Scoping Plan Update process that ARB's current economic modeling for the transportation sector assumes, without supporting evidence, that the state will realize large reductions in fuel costs associated with rapid penetration of zero emission vehicles (ZEV). ARB's proposed ZEV penetration rate greatly exceeds historical trends and market expectations for the target timeframe.[20] ARB also fails to account for the cost of subsidies necessary to bridge the price gap between conventional vehicles and zero emissions vehicles. The availability of infrastructure to support large scale deployment of zero emission vehicles is yet another unknown variable. We remain concerned about the potential bias introduced through unsupported, improbable assumptions and incomplete cost accounting that are likely to significantly understate cost estimates for any of the alternatives evaluated in this Scoping Plan Update.

VI. Studies and Modeling

Economic Modeling of All Cap-and-Trade Scenario

The staff presentation during the February 9 public workshop indicates that ARB has evaluated an All Cap-and-Trade scenario and has stated that this scenario would be the least cost approach to achieving the 2030 emission reduction target.[21] Yet ARB did not include any information on the draft economic analysis for this scenario in its proposed Appendix E, which is currently limited to three scenarios: the "Proposed Plan", "No Cap and Trade" and "Carbon Tax". While we appreciate the summary information provided in the staff presentation at the March 28 workshop, and the acknowledgement in Appendix E that the economic analysis is ongoing and that additional information will be included in the final release of the 2030 Target Scoping Plan, this approach denies meaningful stakeholder review, testimony and Board member consideration of ARB's Scenario 3 analysis. As we have observed in prior comment letters, depriving stakeholders and the Board of pertinent information undermines the deliberative process and leads to poorly informed decisions.

WSPA requests that ARB release the full economic modeling and staff analysis for Scenario 3 as soon as possible, provide a full 45 days for stakeholder and Board member consideration of this information, and allow a reasonable period of time for staff to respond to comments and revise the relevant Scoping Plan documents before the Board considers a vote on a final staff proposal.

Program for Environmental and Regional Equity Report

The discussion and analysis in this proposed 2030 Target Scoping Plan Update references a report from the University of Southern California's Program for Environmental and Regional Equity (PERE)

[20] *Review of E3 PATHWAYS Modeling*, ICF Consulting, December, 2016, page 9: "The unconstrained deployment of battery electric vehicles, for instance, can lead to a scenario such as the High BEV Scenario, which assumes that by 2025, 35 percent of the market for light-duty vehicles is captured by plug-in electric vehicles; more than two times higher than what is currently forecasted in California. Furthermore, if we assume, as CARB has in the development of the EMFAC model, that electric vehicles will be limited to passenger cars (and not deployed in light trucks), then this effectively assumes that more than 50 percent of all passenger cars sold in California are either battery electric vehicles or plug-in hybrid electric vehicles, representing a near 20-fold increase from today, and a 10- fold increase compared to the deployment of hybrid electric vehicles today."

[21] *2017 Climate Change Scoping Plan Update*, California Air Resources Board, February 9, 2017, slide 36.

published in September, 2016, entitled: *"A Preliminary Environmental Equity Assessment of California's Cap-and-Trade Program."*[22] The PERE report suggests that the Cap-and-Trade program has resulted in in-state GHG emissions increases for several regulated sectors while significant program-level emissions reductions are associated with offset projects located outside of California. This report has been cited as the basis for assertions that facilities "using the Cap-and-Trade system are adversely impacting environmental justice (EJ) communities."[23] It appears to be accepted by some stakeholders and some Board members at face value despite the fact that the premises upon which it is based are largely incorrect. These deficiencies include, but are not limited to, the following:

- Criteria pollutants such as PM_{10}, directly emitted from large GHG sources, do not cause the elevated particulate levels that pose the greatest health risks in disadvantaged communities.[24]

- While some large GHG emitters are using offset credits to meet a portion of their allowance obligations, this use is limited to 8% of the entity's compliance obligation.

- The Cap-and-Trade program was never intended to be a control strategy for criteria pollutant emissions.

Furthermore, as ARB observes in its proposed Scoping Plan Update document starting at page 54, existing federal, state and local air quality regulatory programs will continue to reduce criteria and hazardous air pollutant emissions through a comprehensive network of direct and indirect control measures. These measures are applicable to all emissions sources, including those covered by the Cap-and-Trade program. According to ARB, they have resulted in significant emissions reductions and corresponding air quality improvements, including in disadvantaged communities, despite the growth in population and vehicle use that has occurred over the same time period[25] (see also Section II "Provide air quality co-benefits" above).

The current discussion around the PERE report promotes the wrong policy outcomes by suggesting that climate programs should be leveraged for criteria and hazardous air pollutant emissions reductions, even though they were not designed for this purpose and are an inefficient means of achieving reductions of pollutants with localized impacts. The PERE premise is at odds with California's mature air quality regulatory structure, available evidence and expert opinion. For example, the Advisory Council to the Bay Area Air Quality Management District, which includes individuals with relevant subject matter expertise, issued a report in February stating "Unlike toxics and criteria pollutants, for which effects of concern typically occur adjacent to emitting sources (tens of meters) or near-downwind (hundreds of

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[22] *"A Preliminary Environmental Equity Assessment of California's Cap-And-Trade Program"*, Cushing, Lara J., M. Wander, R. Morello-Frosch, M. Pastor, A Zhu and J Sadd, September, 2016; http://dornsife.usc.edu/assets/sites/242/docs/Climate_Equity_Brief_CA_Cap_and_Trade_Sept2016_FINAL2.pdf ("PERE Report")

[23] http://caleja.org/2016/09/new-report-highlights-equity-flaws-in-californias-cap-and-trade-program/

[24] *Response to PERE's Environmental Equity Assessment of California's Cap-and-Trade Program*, Sierra Research, March, 2017.

CEIA response 20170321.pdf

[25] *Air Quality Progress in California Communities*, California Air Resources Board, June 23, 2016, slide 10.

meters to several kilometers), the relevant effects of climate change (and the GHGs that cause it) are global."[26] The Council's report concludes that because the effectiveness of toxics and criteria pollutant programs has been "amply demonstrated", toxics and criteria pollutant emissions should be "regulated directly through such established programs, rather than indirectly as co-benefits of GHG reduction policies."[27]

The attached critique of the PERE report, prepared by Sierra Research, addresses these and related issues in greater detail. WSPA submits that absent further evaluation, including external peer review by objective subject matter experts, this report cannot be used to inform decisions on the Scoping Plan Update or the Cap-and-Trade program.

Cost-Benefit Analysis of Proposed Refining Measure

ARB's cost-benefit analysis for the petroleum refining sector does not make sense. ARB identifies "levelized capital costs" of $0.1 billion for the refining sector from PATHWAYS (Table III-4, page 69) yet ARB's estimated cost in 2030 for the refining measure alone is $70-200 per metric ton (Table III-3, page 65). If ARB is expecting to achieve 30 million metric tons of GHG reductions from a refinery measure (Figure II-2, page 41), then the annualized capital costs for the refining sector would range from $0.2 - 0.6 billion, even before accounting for any costs beyond the refinery measure.

ARB states on page 93 that "existing refineries have an opportunity to move away from fossil fuel production." This simplistic view is unsubstantiated and suggests a poor understanding of refining logistics and economics. For example, even a relatively small refinery would require volumes of renewable feedstock that currently do not exist, and the cost of the infrastructure to produce and ship such volumes to a given facility, coupled with the facility investments necessary to process renewable feedstocks, would likely be prohibitive at scale. Such statements reinforce the concern that ARB's Proposed Plan scenario is not feasible and could result in stranded investment, regulatory uncertainty and potential emissions and economic leakage due to diversion of investment from California.

NERA Review of ARB's Economic Impact Analysis

WSPA retained NERA Economic Consulting to provide an expert third party evaluation of ARB's economic impact analysis of the policy alternatives identified in this Scoping Plan Update.[28] NERA's analysis and findings are included as an attachment to this letter. The scope of NERA's review is necessarily limited to publicly available information. Since ARB has acknowledged that the Scoping

[26] *Advisory Council Opinion on Green House Gas (GHG) Caps at Bay Area Refineries*, February 15, 2017, pages 3-4:

2017.2.22AdvisoryC ouncilOpinionExecutiv

[27] Ibid, page 3.

[28] *Review of ARB's Modeling for the 2017 Scoping Plan Update*, NERA Economic Consulting, April 03, 2017.

NERA_Review_ARB_ Modeling_FINAL.pdf

Plan Update document and the economic impact analysis presented in Appendix E are incomplete, NERA's findings are preliminary and should be revisited once ARB releases a complete set of documents. Based on the available information, the NERA review offers the following observations and recommendations:

- Key elements of the alternatives analyzed by ARB are internally inconsistent and inappropriate for the analysis. For example, ARB uses EPA's Social Cost of Carbon to quantify the benefits of California's GHG policies despite the fact that the SCC measures global benefits.

- The models cannot evaluate the feasibility of climate policy alternatives. For example, PATHWAYS cannot represent the impact of allowance price on consumer choice and producer decisions, and REMI cannot account for greenhouse gas emissions. Model predictions are inherently biased and unreliable because the inputs that drive the impacts are specified by the modeler.

- Neither model can optimize consumer or producer behavior. Thus, neither model can be used to identify a least cost policy path to achieve the 2030 emissions reduction target.

- The scope of the models should be expanded to better represent economic interactions between California and other jurisdictions, including California's trading partners and Cap and Trade-linked jurisdictions.

- NERA's review recommends that ARB conduct a separate analysis using a Computable General Equilibrium model to properly account for feedback and interactions among sectors within and outside of the California economy.

NERA states that the results from any macroeconomic analysis using PATHWAYS and REMI "should be interpreted with caution because of the shortcomings of each model and the lack of a consistent linkage of the models to represent California's Scoping Plan in totality. Failure to address these shortcomings and other concerns identified by ARB's expert economic advisors will likely understate the potential economic impacts of every policy alternative identified in the Scoping Plan Update. This outcome would leave the ARB Board with a false sense of security about the costs and long-term feasibility of any particular alternative.

OEHHA Report on Cap-and-Trade Impacts in Disadvantaged Communities

In February 2017, OEHHA released an initial report titled, "Tracking and Evaluation of Benefits and Impacts of Greenhouse Gas Limits in Disadvantaged Communities." The report was prepared in response to a directive by the Governor to analyze possible benefits and impacts to disadvantaged communities from ARB's GHG reduction programs implemented under AB 32. The initial report only evaluates data from the initial years of the Cap-and-Trade Program, during which only certain large stationary sources were covered by the program.

OEHHA's report acknowledges that there are various "challenges" that "preclude definitive conclusions" regarding the impacts of the Cap-and-Trade program on disadvantaged communities. Yet despite these limitations, the authors choose to present findings that are not supported by the report itself or the underlying data. This preliminary report contributes to a growing body of misinformation distorting the

role of GHG reduction programs relative to mature air quality programs that deliver direct public health benefits at the regional and local level. ARB should explicitly reject any suggestion that this report justifies further restrictions on the Cap-and-Trade program or 2030 Scoping Plan scenarios that diminish the role of Cap and Trade. ARB should also document the many limitations of this report in the public record, including, but not limited to the following points:

- **The Cap-and-Trade program was never designed or intended to be a control strategy for criteria or toxic pollutant emissions.** As noted above, there are numerous long-standing criteria and toxic pollutant emissions control programs that have been extremely effective in reducing emissions from all types of sources, and in improving air quality throughout the state, including in disadvantaged communities. These programs are entirely independent of the state's GHG reduction programs and will continue to regulate criteria and toxic pollutant emissions from a much larger universe of sources than those subject to the Cap-and-Trade program.

- **Some facilities in the Cap-and-Trade program report criteria and toxic emissions from activities that either do not have or do not report GHG emissions.** For example, cooling towers at power plants and refineries can be sources of PM_{10}/$PM_{2.5}$, but have no GHG emissions. Backup diesel generators are exempt from reporting under Cap and Trade, but emit diesel particulate matter that is regulated in California as a carcinogen. For communities with these types of sources, alleged correlations between GHG emissions and emissions of criteria pollutants and air toxics will be meaningless at best, and could be misleading, redirecting resources and focus in a manner that does not address real air quality issues.

- **As OEHHA acknowledges, the criteria and toxic pollutant emission data for Cap-and-Trade sources are more variable in quality than GHG emissions for those sources.** This is principally due to inconsistencies in reporting guidelines used by different California air districts and an incomplete statewide database used by OEHHA. Although more accurate emission data exist at the District and facility level, there is too much uncertainty regarding the accuracy of the criteria and toxic emission data in the statewide database to draw any valid conclusions regarding benefits and impacts of Cap-and-Trade except in terms of GHG emissions.

- **The Cap-and-Trade program period evaluated by OEHHA included only a subset of GHG sources now subject to program requirements.** It is not possible to draw valid conclusions regarding the effectiveness of a program that was not fully implemented during the subject time period.

- **The OEHHA study evaluated correlations between GHG emissions and emissions of other pollutants, but public exposure to air pollutants depends on ambient concentrations and not on emissions.** For the criteria pollutants of most concern in California, ozone and $PM_{2.5}$, emissions are not a surrogate for ambient concentrations. For example, ozone emissions are insignificant contributors to ambient ozone, which is formed from oxides of nitrogen and organic compounds through complex chemical reactions in the atmosphere. In the Bay Area, less than 15% of ambient peak $PM_{2.5}$ concentrations are due to PM emitted directly from industrial sources,

thus an assessment of Cap-and-Trade program impacts on $PM_{2.5}$ emissions does not provide useful information on either a localized or regional level.

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.

Sincerely,

Enclosures

cc: Richard Corey –ARB
Edie Chang - ARB
Mary Jane Coombs – ARB
Tiffany Roberts - WSPA