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Mr. Michael Tollstrup
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on the Climate Change Scoping Plan: First Update Discussion Draft

Dear Mr. Tollstrup:

Chevron has been a California company for more than 130 years and is the largest Fortune 500 Corporation based in the state. We have participated in ARB's stakeholder engagement process since the adoption of the 2008 Scoping Plan in order to make the program workable for California, while meeting the goals of AB 32. We appreciate the opportunity to provide comment on the Climate Change Scoping Plan First Update Discussion Draft ("Draft Update"). The Draft Update's general approach and dual focus on progress to 2020 made since the 2008 Scoping Plan and on post-2020 activities raises significant concerns, including the following:

- The final Scoping Plan Update should include a detailed evaluation of progress to date. In order to appropriately evaluate the State's progress toward achieving the AB 32 statutory goal, this evaluation should include technical and cost-effectiveness data in order to link each measure to the emission reductions. Chevron recommends that the Draft Update be revised to include this critical analysis.

- AB 32 stipulates that emissions should reach 1990 levels by 2020. ARB should use the analytic results in the final Scoping Plan Update to direct remaining emission reduction needs under AB 32.

- AB 32 applies solely to the six Kyoto greenhouse gases ("GHGs"). The final Scoping Plan Update should not expand AB 32 measures unless it is cost-effective and necessary to meet the AB 32 statutory 2020 goal.

- The final Scoping Plan Update is not the appropriate medium for post-2020 discussions. While AB 32 calls for recommendations on post-2020 goals, it does not authorize the ARB to create any emission target past the 2020 timeline. Chevron recommends that ARB develop a separate document in order to make recommendations on post-2020 reduction opportunities to the Legislature.

Overview

The California Global Warming Solutions Act of 2006, also known as Assembly Bill 32 ("AB 32"), directed the ARB to develop a scoping plan "for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions." AB 32 *Section 38561(h)* requires ARB to update the scoping plan at least every five years. The focus of the Update to the Scoping Plan should clearly be to address the measures developed for compliance with AB 32. While AB 32 calls for the ARB to make recommendations on additional emission reductions beyond 2020, it does not authorize the ARB to create any emission target past the 2020 timeline. Reducing emissions significantly below the target established by AB 32 requires the full consideration of the state legislature. Further, AB 32 does not specify that any recommendations should be in the Scoping Plan Update. ARB should commit these recommendations to a process independent of AB 32, developing and submitting recommendations in a separate document.

The AB 32 Scoping Plan requirement is designed to provide the public with understanding of the technical and economic basis for emission reductions to meet the AB 32 statutory goal of reducing emissions to 1990 levels by 2020. The 2008 Scoping Plan was a roadmap for implementation wherein the state identified a suite of regulatory measures, forecasted the emission reductions that these measures could deliver, and forecasted expected GHG emissions from business, as usual, annually through 2020. The clear mission of the Scoping Plan Update is to determine whether these measures have delivered, or will deliver, cost-effective emission reductions to meet the AB 32 statutory 2020 goal in the context of the State's 2013 GHG emissions inventory and activities.

The Update Should Include a Detailed Evaluation of Progress to Date

California has suffered a significant recession since 2008. As a result of lower consumption of energy-related products and reduced production in California, the recession has had a significant impact on emission reductions. Without a clear, detailed evaluation of AB32's specific measures, California legislators and policy-makers cannot know what part of the emission reductions is due to the recession and what part may be due to the suite of measures. Additionally, it is likely that some measures were more productive than others. In order to satisfy the cost-effectiveness requirement of AB 32, ARB must further separate this evaluation to identify the costs and benefits of each specific measure.

The Draft Update assumes that the emission reduction measures are generally the source of the emissions reductions by sector and separately describes statewide emission trends but does not provide the analysis for review of whether any of the measures were truly responsible for the emission reductions. The Draft Update does not analyze cost-effectiveness or the environmental efficacy of the existing emission reduction measures. Health benefits of the measures are similarly unquantified. The Draft Update initially cites that health benefits are one of the main drivers of the current measures, but later states that "efforts to quantify the health impacts due to scoping plan measures remain challenging and are complicated by many factors."[1] The assertion that "direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap" is not substantiated in the document.[2]

[1] ARB, Climate Change Scoping Plan: First Update Discussion Draft, October 2013, (pg. 53)

[2] ARB, Climate Change Scoping Plan: First Update Discussion Draft, October 2013, (pg. 19)

The Draft Update also asserts that clear co-benefits accompany GHG reductions, but does not elaborate on what co-benefits and on which pollutant reductions. ARB's own studies show that GHG reductions will result in insignificant improvements in criteria pollutant emissions due to the effectiveness of the air pollution programs already implemented in California.[3]

AB 32 requires that adopted measures be efficient and cost-effective. In order to ensure this, ARB must evaluate the measures adopted pursuant to the Scoping Plan. While previous ARB efforts forecast the technical and economic elements of the measures, economic and technical conditions have changed since 2008. This evaluation should clearly link the policy measure to the reductions through careful and clear understanding of the technical impact of each measure.

AB 32 Stipulates that Emissions Should Reach 1990 Levels by 2020

Depending on the results of the detailed evaluation discussed above, ARB should consider curtailing some measures to minimize the cost of compliance with AB 32. ARB could secure further broad support for climate action by demonstrating the lowest potential cost pathway toward compliance with AB 32. ARB should look for the potential to reduce the magnitude or breadth of adopted measures. In particular, ARB should look for opportunities to strengthen the most cost-effective measures and to reduce reliance on more costly measures. For example, ARB could assess the effect of moderating the future ramp up of the low carbon fuel standard.

AB 32 Applies Solely to the Six Kyoto Gases

AB 32 mandates that California reach a GHG emission reduction goal. The legislation does not impose additional local air quality measures. ARB must not use the Scoping Plan Update as a means to expand the application of AB 32 beyond the six Kyoto gases. The Draft Update proposes to include new programs under AB 32 to regulate "short-lived climate pollutants" (SLCPs), which include methane, black carbon (i.e., soot), tropospheric ozone, and some hydro fluorocarbons (HFCs) in the next two years. The purpose of the Update is to adjust the Scoping Plan to meet the AB 32 statutory 2020 goal. The Draft Update states that the goal will be met in 2020. There is no justification to add new regulations on SLCP's if the state is already positioned to meet the statutory 2020 goal. In addition, two of these—methane and HFCs—are GHGs already regulated under AB 32, and the state's existing framework of air quality laws and programs currently regulates carbon black as a local air pollutant. It is therefore unnecessary and duplicative to add SLCP requirements into AB 32. We note that the regulation of particulate matter (PM) under both federal and State laws has already reduced black carbon by 85 percent from 1990 levels,[4] and ARB expects to achieve 95 percent control by 2020.[5] So even if black carbon had been an AB 32 GHG pollutant, emissions would be well below the 1990 levels by now, with further reductions expected from ongoing implementation of PM rules.

[3] ARB, October 28, 2010, Cap-and -Trade Regulation, Volume VI, Appendix P: Co-Pollutant Emissions Assessment

[4] Recent ARB lecture shows that large decadal trends in black carbon concentrations are largely in response to policies enacted to decrease PM emissions from diesel combustion: http://www.arb.ca.gov/research/lectures/speakers/ramanathan/ramanathan.pdf

[5] ARB, Climate Change Scoping Plan: First Update Discussion Draft, October 2013, (pg 14)

The Scoping Plan Update is Not the Appropriate Medium for Post-2020 Discussion

The Scoping Plan Update is not the legal mechanism for establishing a future target, nor is ARB authorized to establish a post-2020 emissions target. The legislature is the appropriate body to develop and establish future goals.

Although AB 32 requires that ARB make recommendations on post-2020 emission reductions, it does not specify that these recommendations should be in the Scoping Plan Update. Including such recommendations in the Draft Update needlessly confuses this element of the regulation with the requirement to evaluate the measures from the Scoping Plan. Further, because the Scoping Plan Update is only developed every five years, it does not enable ARB to make recommendations and interact with the legislature in the appropriate timeframe.

Further emission reductions must be approached cautiously -- the state must not pick winners and losers, must not presume technology development will move in any particular way, and must be coordinated or even linked with GHG emissions reductions activities in other jurisdictions to avoid serious unintended economic consequences and potentially stunting technology innovation from unexpected sectors.

A. Goals must be Practically and Commercially Achievable

The Draft Update contains sweeping statements that the target of 80% reduction by 2050 can be met technically and cites seven studies. While we agree that there may be improvements or possibly some breakthroughs in technologies in the next 30 years, the seven studies that are cited rely on technologies that are not commercially feasible and/or are not feasible in California.

These include:

- Nuclear
- Carbon Dioxide Capture and Storage (CCS)
- Significant supply of biofuels without impacting food supply nor yielding higher lifecycle GHG emissions

The studies also include some unrealistic assumptions, such as Load Balancing with low or zero emissions to enable reliable, continuous electric power with very high portions of solar and wind energy. Potential savings from energy efficiency are overstated, since they are estimated at the "technical potential" without considering barriers to implementation, such as lack of space for heat integration, lack of structural integrity to support energy recovery devices, etc. Several of the studies mention the need for "significant innovation and advancements in multiple technologies", "technologies that are not yet commercialized", or state that achieving the goal would "require dramatic changes".

In most of the studies where costs of decarbonized electricity are assessed, it is routinely assumed that costs for renewables and CCS will decrease markedly. In some cases, costs of fossil fuels are projected to increase. These questionable assumptions lead to statements that assert or imply that the 2050 goal can be achieved "cost-effectively". Conversely, one study included an economic model and concluded that the 2050 goal might be achieved but would yield an 8% to 17% cost increase at a carbon price of $107-225/tonne.

B. ARB should consider Studies by Transportation Sector Experts

As requested by the U.S. Secretary of Energy, the National Petroleum Council recently completed a study which examined opportunities to accelerate future prospects for transportation fuels to reduce U.S. GHG emissions from transportation by 50% by 2050[6]. The study brought together leading technical authorities from industry and academia in 14 different areas key to the future of transportation, including energy security and policy, agriculture, batteries, economics, energy efficiency, fuel cells, EVs and engines. It included viewpoints from more than 300 participants with the objective to develop a realistic forward-looking integrated evaluation of the options. The study concluded that several technological hurdles must be overcome to meet a 50% reduction in GHG emissions for the transportation sector by 2050.

Key findings include:

- Natural gas vehicles have strong economic potential, particularly for heavy duty vehicles
- Electric vehicles are challenged by battery issues such as battery cost, energy density, capacity degradation and longevity
- 12 "Top Priority" Technological hurdles were identified showing the breadth of invention needed
- A broad portfolio of technology options provides the opportunity to benefit from potential disruptive technologies
- Infrastructure challenges must be overcome for wide-scale commercialization
- Fuel economy for internal combustion engines can be dramatically improved
- Internal combustion engines will be dominant for years to come

This study underscores the dangers of preselecting measures at this early stage. The assumptions that come from presupposing technology winners and losers will affect the research, development, and deployment decisions of innovators and businesses, which could stall or even discourage the very development of low carbon technology breakthroughs that ARB seeks.

C. Climate Change is a Global Problem that Requires Global Solutions

Any discussion of post-2020 goals must be clearly conditional on firmly demonstrated emission reductions in other states, regions and nations. As the Draft Update indicates, California cannot address the climate challenge on its own. Absent active partnerships, ARB's post-2020 aggressive future GHG targets, reductions more than double the current AB 32 statutory 2020 goal, will lead to higher costs in California alone. Under such a circumstance, California would only degrade its economy as more production moves out of state.

[6] http://www.hydrogen.energy.gov/pdfs/htac_nov12_11_boccanfuso.pdf ; Link to full report. http://npc.org/ click on 'Transportation' under 'Reports' in the left column.

To be most effective, California's policies need to reflect the broader context of the problem and how its actions can lead toward global solutions (e.g., leadership on effective policy design and innovation that lowers costs).

Limiting achievement of goals to within California's borders is not efficient. California can achieve its climate goals and produce economic gains for California by broadening the way in which they think about meeting the reductions targets (e.g., Japan's bi-lateral crediting mechanism, which supports Japanese technology exports that reduce emissions in areas besides Japan).

Conclusion

The State faces the five year scoping plan update at a pivotal point in time for AB 32 implementation. The State's GHG emissions have fallen significantly below the business- as-usual forecasts upon which the State based the required emission reduction measures to achieve the AB 32 statutory goal. Although emissions have fallen, the AB 32 program's stringency is scheduled to increase significantly in the next two years and accelerate through 2020. The next few years will include a massive expansion of the cap-and-trade program in 2015 to include transportation fuels and natural gas, potential adjustments in compliance deadlines for the Low Carbon Fuel Standard, and leakage analysis that ARB intends to rely on to determine allowance allocation. Chevron urges ARB to use this update opportunity to modify the program, reducing the economic impacts on California, while maintaining a clear trajectory to meet the AB 32 statutory 2020 goal.

Sincerely,

(original signed by)

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