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Via internet upload: <https://www.arb.ca.gov/lispub/comm/bclist.php>

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

**Re: Proposed 2017 Climate Change Scoping Plan Update and
Draft Environmental Analysis**

Dear Members of the Air Resources Board:

The Center for Biological Diversity (“Center”) respectfully submits the following comments on the Proposed 2017 Climate Change Scoping Plan Update (“Proposed Scoping Plan”) and accompanying Draft Environmental Analysis (“Draft EA”). The Center is a non-profit organization with more than one million members and online activists and offices throughout the United States, including in Oakland, Los Angeles, and Joshua Tree, California. The Center’s mission is to ensure the preservation, protection and restoration of biodiversity, native species, ecosystems, public lands and waters and public health. In furtherance of these goals, the Center’s Climate Law Institute seeks to reduce U.S. greenhouse gas emissions and other air pollution to protect biological diversity, the environment, and human health and welfare. Specific objectives include securing protections for species threatened by global warming, ensuring compliance with applicable law in order to reduce greenhouse gas emissions and other air pollution, and educating and mobilizing the public on global warming and air quality issues.

The Center greatly appreciates the seriousness with which California continues to approach the immense environmental and social challenges posed by climate disruption. On the whole, the Proposed Scoping Plan offers a great deal of insight into many of the measures that will be necessary to ensure that California does its fair share as part of a necessary global effort to confront these challenges. Given the current political context in the United States, California’s strong science-based and political leadership on this issue is more essential than ever.

That said, the Center has concerns about certain measures discussed in the Proposed Scoping Plan. As a general matter, the state’s legislative emissions reduction goal for 2030—predicated on emissions reductions needed to limit global temperature increases to 2°C—does not reflect current science showing that damage to communities and the environment from even a 2°C temperature rise will likely be considerable. The

Proposed Scoping Plan should acknowledge this science and begin the process of moving the state toward a more protective strategy.

The plan also would extend and deepen the state's reliance on the cap-and-trade program to achieve California's 2030 goal, despite mounting evidence that the cap-and-trade program is at best failing to alleviate, and at worst exacerbating, environmental burdens already disproportionately borne by low-income communities and communities of color. The Proposed Scoping Plan also references a number of recommendations and potential compliance strategies under the "Natural and Working Lands" rubric that could have the effect of increasing emissions, and decreasing land-based carbon stocks, significantly between now and 2030, thus directly undermining California's overall emissions reduction goals. Finally, the Draft EA fails to satisfy the requirements of the California Environmental Quality Act ("CEQA") in several important respects.

These comments are offered in a collaborative spirit, with the hope that the Proposed Scoping Plan and Draft EA can be corrected and strengthened before final approval. The Center greatly appreciates the Board's consideration and looks forward to working with the Board and ARB staff as this process moves forward.

I To Avoid the Worst Impacts of Climate Change, Global Average Temperature Increases Must Be Held Well Below 2°C.

As the Proposed Scoping Plan notes, California's 2030 greenhouse gas emissions target is consistent with global emissions reductions necessary to "contain the rise in global temperatures to below 2 degrees Celsius."¹ Severe impacts from the 1°C warming that the planet has already experienced, however, highlight the urgency for stronger climate action to avoid truly catastrophic dangers to people and planet. Although SB 32 imposes a target of reducing emissions 40 percent below 1990 levels by 2030, there is no reason that California could not begin planning now to exceed this target, in accordance with the most current and best available science.

Human-caused climate change is already causing widespread damage from intensifying global food and water insecurity, the increasing frequency of heat waves and other extreme weather events, flooding of coastal regions by sea level rise and increasing storm surge, the rapid loss of Arctic sea ice and Antarctic ice shelves, increasing species extinction risk, and the worldwide collapse of coral reefs.² The Third National Climate Assessment makes clear that "reduc[ing] the risks of some of the worst impacts of climate change" will require "aggressive and sustained greenhouse gas emission reductions" over the course of this century.³

¹ Proposed Scoping Plan at ES2.

² Melillo, Jerry M., 2014. *Climate Change Impacts in the United States*, in The Third National Climate Assessment (Terese (T.C.) Richmond, and Gary W. Yohe, Eds., U.S. Global Change Research Program 2014).

³ Melillo, Jerry M., at 13, 14, and 649.

Limiting further temperature rise is needed to prevent increasingly dangerous and potentially irreversible impacts.⁴ A 2°C temperature increase above pre-industrial levels is past the point where severe and potentially irreversible impacts are predicted to occur,⁵ and is no longer considered a safe guardrail for avoiding dangerous climate change.⁶

Immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming well below 2°C rise above pre-industrial levels. The IPCC Fifth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of carbon that can be burned while maintaining some probability of staying below a given temperature target. According to the IPCC, total cumulative anthropogenic emissions of CO₂ must remain below about 1,000 gigatonnes (GtCO₂) from 2011 onward for a 66 percent probability of limiting warming to 2°C above pre-industrial levels, and to 400 GtCO₂ from 2011 onward for a 66 percent probability of limiting warming to 1.5°C.⁷ These carbon budgets have been reduced to 850 GtCO₂ and 240 GtCO₂, respectively, from 2015 onward.⁸ Given that global CO₂ emissions in 2015 alone totaled 36 GtCO₂,⁹ humanity is rapidly consuming the remaining carbon budget.

One of the most important and urgent actions governments can take at present is to ensure that fossil carbon is kept “in the ground” rather than produced, combusted, and emitted to the atmosphere. According to a large body of scientific research, the vast majority of global and US fossil fuels must stay in the ground in order to hold

⁴ Y. Cai et al., *Risk of multiple interacting tipping points should encourage rapid CO₂ emission reduction*, 6 *Nature Climate Change* 520 (2016).

⁵ C-F. Schleussner, et al., *Differential climate impacts for policy-relevant limits to global warming: the case of 1.5C and 2C*, 7 *Earth Systems Dynamics* 327 (2016); U.N. Subsidiary Body for Scientific and Technological Advice, *Report on the Structured Expert Dialogue on the 2013-2015 review*, FCCC/SB/2015/INF.1 (2015), <http://unfccc.int/resource/docs/2015/sb/eng/inf01.pdf>.

⁶ The Paris Agreement codifies the international consensus that climate change is an “urgent threat” of global concern, and commits all signatories to a target of holding long-term global average temperature “to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” reflecting the consensus that 2°C is no longer a safe guardrail. See UNFCCC [United Nations Framework Convention on Climate Change], Conference of the Parties Nov. 30-Dec. 11, 2015, Adoption of the Paris Agreement Art. 2, U.N. Doc. FCCC/CP/2015/L.9 (Dec. 12, 2015), available at <http://unfccc.int/resource/docs/2015/cop21/eng/l09.pdf>

⁷ IPCC 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change; Summary for Policymakers at 25; IPCC 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change at 63-64 and Table 2.2 (Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)). IPCC, Geneva, Switzerland (2014).

⁸ Rogelj, Joeri et al., *Differences between carbon budget estimates unraveled*, 6 *Nature Climate Change* 245, (2016), at Table 2.

⁹ See Le Quéré, Corinne, et al., *Global Carbon Budget 2016*, 8 *Earth Syst. Sci. Data* 605 (2016), www.globalcarbonproject.org/carbonbudget/16/data.htm.

temperature rise to well below 2°C.¹⁰ Studies estimate that 68 to 80 percent of global fossil fuel reserves must not be extracted and burned to limit temperature rise to 2°C based on a 1,000 GtCO₂ carbon budget.¹¹ For a 50 percent chance of limiting temperature rise to 1.5°C, 85 percent of known fossil fuel reserves must stay in the ground.¹² Effectively, fossil fuel emissions must be phased out globally within the next few decades.¹³

A 2016 analysis found that potential carbon emissions from developed reserves in currently operating oil and gas fields and mines would lead to global temperature rise beyond 2°C.¹⁴ Excluding coal, currently operating oil and gas fields alone would take the world beyond 1.5°C.¹⁵ To stay well below 2°C, the clear implication is that no new fossil fuel extraction or transportation infrastructure should be built, and governments should grant no new permits for new fossil fuel extraction and infrastructure.¹⁶ Moreover, some fields and mines, primarily in rich countries, must be closed before fully exploiting their resources. The analysis concludes that, because “existing fossil fuel reserves considerably exceed both the 2°C and 1.5°C carbon budgets[, i]t follows that exploration for new fossil fuel reserves is at best a waste of money and at worst very dangerous.”¹⁷

¹⁰ The IPCC estimates that global fossil fuel reserves exceed the remaining carbon budget for staying below 2°C by 4 to 7 times, while fossil fuel resources exceed the carbon budget for 2°C by 31 to 50 times. See Bruckner, Thomas et al. 2014: Energy Systems. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change at Table 7.2 (Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA) available at http://ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter7.pdf.

¹¹ To limit temperature rise to 2°C based on a 1,000 GtCO₂ carbon budget from 2011 onward, studies indicate variously that 80 percent (Carbon Tracker Initiative 2013), 76 percent (Raupach et al. 2014), and 68 percent (Oil Change International 2016) of global fossil fuel reserves must stay in the ground. See Carbon Tracker Initiative, *Unburnable Carbon – Are the world’s financial markets carrying a carbon bubble?*, (2013) <http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf>; Raupach, Michael et al., *Sharing a quota on cumulative carbon emissions*, 4 Nature Climate Change 873 (2014); Oil Change International, *The Sky’s Limit: Why the Paris Climate Goals Require A Managed Decline of Fossil Fuel Production* (September 2016).

¹² Oil Change International 2016, *supra* note 11 at 6.

¹³ Rogelj et al. (2015) estimated that a reasonable likelihood of limiting warming to 1.5° or 2°C requires global CO₂ emissions to be phased out by mid-century and likely as early as 2040-2045. See Rogelj, Joeri et al., *Energy system transformations for limiting end-of-century warming to below 1.5°C*, 5 Nature Climate Change 519 (2015). Climate Action Tracker indicated that the United States must phase out fossil fuel CO₂ emissions even earlier—between 2025 and 2040—for a reasonable chance of staying below 2°C. See, e.g. Climate Action Tracker, *USA*, (updated Jan. 25, 2017), <http://climateactiontracker.org/countries/usa>.

¹⁴ Oil Change International 2016, *supra* note 11 at 5.

¹⁵ *Id.*, at 5.

¹⁶ *Id.*, at 5.

¹⁷ *Id.*, at 17.

According to a US-focused analysis,¹⁸ the United States alone has enough recoverable fossil fuels, split about evenly between federal and non-federal resources, that if extracted and burned, would exceed the global carbon budget for a 1.5°C limit, and would consume nearly the entire global budget for a 2°C limit.¹⁹ Specifically, the analysis found:

- Development of federal fossil fuels (leased and unleased) would release up to 492 gigatons (Gt) of carbon dioxide equivalent greenhouse gas pollution (“CO₂e”), representing 46 percent to 50 percent of potential emissions from all remaining U.S. fossil fuels.
- Of that amount, up to 450 Gt CO₂e have not yet been leased to private industry for extraction;
- Releasing those 450 Gt CO₂e (the equivalent annual pollution of more than 118,000 coal-fired power plants) would be greater than any proposed U.S. share of global carbon limits that would keep emissions well below 2°C.²⁰

Fracking has also opened up vast resources that otherwise would not be available, increasing the potential for future greenhouse gas emissions.

The urgent need to prevent the worst impacts of climate change means that the world in general – and California in particular – cannot afford to invest in new fossil fuel extraction and infrastructure that locks in carbon intensive oil production for years into the future. The Proposed Scoping Plan, however, is entirely silent on strategies to reduce the development and production of fossil fuel resources in California. Market-based approaches and efficiency measures like those in the Proposed Scoping Plan can go only so far. In order to “prevent the worst-case scenarios of rising temperatures,”²¹ California must begin planning now for a future in which fossil fuels remain safely in the ground.

Accordingly, the Proposed Scoping Plan should be revised to include an express goal acknowledging the need to shift quickly and permanently away from fossil fuels, and outlining concrete steps necessary for California to begin keeping these resources in the ground.

¹⁸ Ecoshift Consulting, et al., *The Potential Greenhouse Gas Emissions of U.S. Federal Fossil Fuels*, Prepared for Center for Biological Diversity & Friends of the Earth. (2015). <http://www.ecoshiftconsulting.com/wpcontent/uploads/Potential-Greenhouse-Gas-Emissions-U-S-Federal-Fossil-Fuels.pdf>.

¹⁹ *Id.*, at. 4.

²⁰ For the United States, Raupach et al. (2014) provided a mid-range estimate of the U.S. carbon quota of 158 GtCO₂ for a 50percent chance of staying below 2°C, using a “blended” scenario of sharing principles for allocating the global carbon budget among countries. This study estimated US fossil fuel reserves at 716 GtCO₂, of which coal comprises the vast majority, indicating that most fossil fuel reserves in the US must remain unburned to meet a well below 2°C carbon budget. Raupach et al. 2014, *supra* note 11 at Supplementary Figure 7.

²¹ Proposed Scoping Plan at ES2.

II. Measures Included in the Proposed Scenario Are Flawed and Unsupported.

A. The Proposed Scenario's Heavy Reliance on Cap-and-Trade with Offsets Will Likely Exacerbate Environmental Burdens, Particularly in Disadvantaged Communities.

The Proposed Scoping Plan's "Policy Assessment" asserts that "[t]he Cap-and-Trade Program will ensure GHG emission reductions within California that may reduce criteria pollutants and toxic air contaminants."²² However, an analysis by Lara Cushing, *et al.*, submitted in September 2016 to ARB in response to the Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms, shows that the opposite may be true.²³ Cushing *et al.* found that, rather than reducing criteria pollutants and toxic air contaminants, California's cap-and-trade program appears to be prolonging, and in some cases exacerbating, environmental burdens borne by low-income communities and people of color in California.

With respect to particulate matter (PM₁₀) co-pollutants from sources covered under California's Cap-and-Trade program, Cushing *et al.* found that "preliminary evidence suggests that in-state GHG emissions from regulated companies have increased on average for several industry sectors and that many emissions reductions associated with the program were linked to offset projects located outside of California." These include the cement, in-state electricity generation, oil and gas production, and hydrogen plant sectors.

Furthermore, Cushing *et al.* found that "facilities that emit the highest levels of both GHGs and PM₁₀ are also more likely to be located in communities with higher proportions of residents of color and residents living in poverty."²⁴ This points to the potential for enhancing public health and environmental equity benefits by achieving more emissions reductions among facilities that are located in disadvantaged communities, rather than deferred and displaced through trading or the purchase of offsets.

As detailed in Cushing *et al.*, offset credits worth more than 12 million tons CO₂e were utilized to meet compliance obligations in the first compliance period.²⁵ These offsets represent 4.4 percent of the total compliance obligation of all regulated companies and over four times the targeted greenhouse gas reduction in 2013 to 2014.²⁶

²² Proposed Scoping Plan at 47.

²³ Lara J. Cushing, *et al.*, A Preliminary Environmental Equity Assessment of California's Cap and Trade Program. Available at http://dornsife.usc.edu/assets/sites/242/docs/Climate_Equity_Brief_CA_Cap_and_Trade_Sept2016_FINAL2.pdf.

²⁴ *Id.*, at 10.

²⁵ *Id.*, at 9.

²⁶ *Id.*, at 8.

Seventy-six percent of the offset credits used to date were generated by out-of-state projects. Thus, rather than achieving reductions at the emissions sources, where California communities might benefit from reductions in associated co-pollutants, those reductions were produced via financial transfers from offset projects outside of California. Furthermore, the 46% of offset credits that came from the destruction of ozone-depleting substances—primarily industrial refrigerants, previously captured and stored in containers—produced no co-benefits at the actual project site outside of California, either.

B. Offset Projects Under the Cap-and Trade Program Fail to Ensure Additionality, Are Vulnerable to Leakage, and Threaten Forest Ecosystems.

The offsets component of California’s cap-and-trade program is very large. While the cap-and-trade regulation limits the use of offsets to no more than 8% of the “compliance obligation” (i.e., 8% of an emitter’s total emissions), this amounts to slightly more than the total reductions expected to directly result from the cap-and-trade program through 2020,²⁷ and equates to more than half of the total reductions required in California between 2013 and 2020, assuming compliance reserve credits remain unused.²⁸

To date, offset credits totaling more than 56 million tons have been issued,²⁹ in the context of an overall GHG reduction program that was initially set to achieve 174 MMT of reductions by 2020,³⁰ and within a cap-and-trade program that was initially projected to provide a total of 34.4 MMT of reductions.³¹ In other words, the cap-and-trade program is largely an offsets program.

Ozone Depleting Substances (ODS) made up a large portion of the offsets registered in the first compliance period, as this protocol focused on the destruction or conversion of refrigerants and other industrial chemicals that were banned from production and use under the Montreal Protocol and thus were largely being stored in the hopes of an eventual carbon market to provide an opportunity to profit from their destruction. The California offset market was that opportunity, so there was an early rush to generate these credits as the stockpile was liquidated.

²⁷ Haya, B. 2013. California's carbon offsets program - the offsets limit explained. Available at <http://bhaya.berkeley.edu/docs/QuantityofAB32offsetscredits.xlsx>, accessed on April 10, 2017.

²⁸ Haya, B., A. Strong, E. Grubert & D. Cullenward. 2015. Carbon Offsets in California: Science in the Policy Development Process. In *New Trends in Communicating Risk and Resiliency: A Multi-Disciplinary Approach to Global Environmental Change*, eds. J. Eichelberger, K. Taylor & Y. Kontar. Springer.

²⁹ From the ARB *Compliance Offset Program* web page, accessed on April 7, 2017.

<https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>

³⁰ Initial AB 32 Climate Change Scoping Plan at 21 (Dec. 2008), available at https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

³¹ *Id.*, at 17.

After the initial mass of ODS credits, forestry offsets made up the largest source of offset credits, providing more than 35 million tons of credits to date, accounting for nearly two-thirds of California's registered offset credits.³²

Although registered forestry projects must meet certain criteria and compliance must be verified by a third-party certification entity, the "forest protocol"—the methodology for qualifying and quantifying offset credits from forest carbon projects—contains fundamental shortcomings that undermine the ability of the program to ensure that offsets are additional, specifically with regard to baseline modeling and leakage, and does not ensure increased carbon sequestration on a landscape or state-wide level. Other components of the protocol, regarding natural forest management and even-age management, raise concerns of unintended impacts to the forest ecosystem and fail to maximize environmental co-benefits as required under AB 32.

The forest protocol does not require the project baseline to include forest growth that is projected to occur under legally mandated long-term management plans such as a "sustained yield plan" or "Option A" document that calculates the long-term sustained yield of timber for the ownership over a 100-year period. These representations are legally required in California in order to gain approval of individual logging plans and are strong indicators of "business as usual" activities. Nor does the project baseline include the requirements and restrictions of Habitat Conservation Plans and Safe Harbor Agreements, which usually require the conservation or development of habitat over the long term in exchange for permission to destroy habitat or harm endangered species in the near term. Furthermore, the forest protocol does not require the project baseline of "reforestation" projects to account for requirements under California's Forest Practice Act and Rules that logged areas be adequately "stocked" after logging, either with trees left on site or, in the case of even-age management, to be replanted within 3-5 years following timber operations.³³ By not requiring the project baseline to include these requirements, the forest protocol allows projects to claim credit for forest growth or conservation that is required or projected to occur anyway.

Instead, the project baseline is set in large part by comparison to the immediately surrounding forest lands, known as the assessment area. For large landowners and timber operators, the assessment area may be largely or entirely within the control of the owner of the forest carbon project. This means that a forest project can produce more credits (forest stocking levels above baseline) if the same landowner has suppressed forest stocking levels in the surrounding area through logging. Furthermore, as there are no guidelines on the shape or location of forest project areas, the forest projects may be designed and located to fit on top of forest areas that may be less commercially attractive or accessible, within and around ongoing logging operations by the same landowner.

³² From the ARB *Compliance Offset Program* web page, accessed on April 7, 2017.
<https://www.arb.ca.gov/cc/capandtrade/offsets/offsets.htm>

³³ See Pub. Res. Code § 4561; 14 Cal. Code Regs., § 912.7 [932.7, 952.7].

The forest protocol does not estimate leakage risk for each project. Instead, it applies a standardized leakage risk factor, intended to incorporate all sector leakage risk, applied uniformly to all forest projects. This means that all projects are assumed to carry the same leakage risk, and are all thus discounted to the same degree. At the same time, the forest protocol does not require reporting of carbon stocks for the entire land ownership on which the project occurs. With entity-wide reporting, increased stocking levels at an individual project could be compared to the overall forest stocking levels for that landowner, and carbon credits for reduced logging within a project area could be penalized for increased logging elsewhere under the same landowner. Without entity-wide reporting, and without disclosure of the leakage risk specific to a project, project developers can game the program by developing some areas as offset projects, while shifting harvesting to other areas of their land holdings, maintaining or even increasing overall greenhouse gas emissions throughout their operations. Large timber operations would have the most flexibility to shift harvests within large land holdings.

By allowing for the use of even-aged management—specifically including clearcutting—the forest protocol runs contrary to the requirement under AB 32 for the cap and trade program to “maximize additional environmental and economic benefits for California, as appropriate.” Forest clearcutting is the management option with the highest risk of exacerbating the impacts of climate change while simultaneously threatening forest ecosystems, water quality, and wildlife. Including even-age management not only makes such operations more profitable, but also perversely undermines the incentive for landowners to consider alternative management scenarios that are less damaging to the forest ecosystem and the climate.

C. An International Forest Offsets Program Would Further Exacerbate the Dislocation of Co-Benefits from California and Bring Additional Problems Related to Non-Additionality and Leakage.

While the Proposed Scoping Plan neither proposes a specific timeline or process for adopting an international forest offset program, nor quantifies the reductions expected to be achieved or displaced through such a mechanism, it does clearly state ARB’s intention to pursue an international forest offsets program: “ARB staff identified the jurisdictional program in Acre, Brazil, as a program that is ready to be considered for linkage with California, and has committed to proposing regulatory standards for assessing tropical forestry programs and to proposing a linkage with the program in Acre as part of a future rulemaking process.”³⁴

It is a gross overstatement to say that the Acre program is ready to be considered for linkage with California—or, more precisely, that California is ready to consider such a linkage—as multiple stakeholders have raised fundamental and specific concerns with the program and the linkage, particularly with respect to social impacts, leakage, and non-additionality. These are fundamental problems that have yet to be adequately addressed

³⁴ Proposed Scoping Plan at 29, footnote 40.

and would need to be fully addressed before ARB could propose linkage with Acre or any other international jurisdiction.

- 1. An international forest offsets program that requires inventory and reporting at the jurisdictional level reduces the risk of leakage within the jurisdiction but remains highly vulnerable to interstate leakage within the same country, or international leakage to other tropical forest regions.**

ARB's proposals have considered multiple options for addressing the problem of interstate leakage—in this context, the increase of deforestation activities in areas outside the partner jurisdiction in response to reductions within the partner jurisdiction. One option is to reduce leakage risk in part by increasing production of goods that drive deforestation, such as wood—and, presumably, cattle and palm oil—within the partner jurisdiction, to reduce the market forces that lead to leakage. This presumably involves land-use decisions and intensified industrialization of cleared lands that could have substantial negative social and environmental implications for local communities and the surrounding forest. In many jurisdictions it would surely not be sufficient to simply require that local environmental laws not be violated, as states where substantial deforestation is occurring generally do not have either high environmental standards or strong enforcement mechanisms. In addition, it would be extremely difficult to monitor such non-forest activities outside of forest project boundaries, across the partner state's economy.

Another option involves measuring interstate and international leakage and accounting for that leakage within the jurisdiction's program, and reducing credits by the estimated amount of leakage. ARB's U.S. domestic forest protocol includes a leakage measure along these lines, applying a uniform, market-wide leakage risk factor to all forest credits. This approach does not take into account the specific leakage risk for any particular project and therefore does not discourage leakage, as all projects are subject to the same standard risk factor, whether or not leakage is occurring. Using this approach in a REDD program would invite gaming through interstate leakage, with timber operators and capital investments moving deforestation activities across state lines. Furthermore, developing a market-wide leakage risk would require global monitoring of forest activities and of the sourcing of products responsible for recent deforestation trends, a potentially valuable but highly ambitious undertaking.

- 2. An International Forest Offsets program carries a high risk of crediting non-additional activities if the process for determining jurisdictional baselines does not account for year-to-year fluctuation and regional trends.**

While the risk of non-additional credits depends in large part on how low the business-as-usual baseline is set, it is also necessary to look at each jurisdiction individually to take into account year-to-year fluctuation and recent trends. A recent single year with an exceptionally high rate of deforestation, or the categorization of

recently converted palm plantations as forests, for instance, could dramatically lower the baseline, allowing partner states to produce forest offsets of no real carbon benefit.

In comments submitted to ARB in June 2016 on the proposed REDD program and linkage with Acre, Dr. Barbara Haya of the Berkeley Energy & Climate Institute presented the results of an analysis of ARB's proposal to set the crediting baseline at 10% below the average rate of deforestation within a state during the previous ten years.³⁵ Haya compared the ten-year average deforestation rate (2001-2010) to the following period (2011-2015). Of the 102 jurisdictions that Haya assessed, thirteen showed a drop in deforestation rates by greater than 10%, meaning that an international forest offsets program hypothetically initiated in 2011 with a crediting baseline equal to 10% below the average rates during the previous 10 years would have generated credits without any further action (non-additional crediting). In Acre, average deforestation rates during the 2011-2015 period were 15% lower than the 2001-2010 average, meaning, again, that linkage with Acre over this period would have generated offsets that had no real carbon benefit.³⁶ In this case, a crediting baseline at 10% below the 10-year historical average is not sufficient to avoid non-additional crediting.

In fact, there are many factors that affect deforestation rates, factors which are largely beyond the scope of an international forest offsets program as ARB has so far considered it. As Haya describes in her comments:

For example, in Brazil, reductions have been affected by the soy and beef moratoriums catalyzed by international NGOs, national Brazil policy, state-level policy and programs, and changes in global commodity prices... It is difficult to assess the extent to which deforestation rates were affected by any one of these factors. Second, the Brazilian government and Acre have decided to make forest protection a priority for a range of reasons, not just for the global climate benefits. Brazil has also committed to reducing its deforestation rate as a part of its commitments under the UN Paris climate accords (in their INDC). They are also receiving funds from governments internationally to help pay for these efforts, including from Norway as mentioned above. An effective REDD program is hard to carry out and requires substantial political will to be successful. The sale of REDD credits can help pay for, and provide legitimacy for, a government to carry out a program they wish to carry out. But if those payments are the main motivation for a REDD program, that REDD program is bound to fail; the political will would not likely be sufficient for an effective REDD program that preserves forests for the long run rather than just

³⁵ Barbara Haya, Research Fellow, Berkeley Energy & Climate Institute, University of California, Berkeley. Comments on California's proposed REDD program and linkage with Acre, Brazil, submitted June 4, 2016. Available at <https://www.arb.ca.gov/lists/com-attach/34-sectorbased4-ws-UDgGYVwkWGoLUgBj.pdf>, accessed April 10, 2017.

³⁶ *Id.*, at 2.

lowering emissions for a short period of time. For all of these reasons, *REDD credits would not be considered additional as offset credits.*³⁷

D. The Proposed Scenario Arbitrarily and Unscientifically Assumes Zero Emissions from Biomass Combustion.

In calculating emissions reductions through 2030 based on the Renewable Portfolio Standard,³⁸ the Proposed Scoping Plan effectively treats emissions from biomass (including bioenergy and biofuels production) as if they do not exist. The PATHWAYS model used to estimate emissions under the Proposed Scoping Plan similarly treats biofuel combustion as zero-emitting.³⁹ As the Center has pointed out in numerous letters to CARB and other agencies over the past several years, this approach is scientifically unsupported and legally indefensible.⁴⁰

Wood contains a great deal of carbon. Combustion of wood for energy instantaneously releases virtually all of that carbon to the atmosphere as CO₂. Burning wood for energy is typically less efficient, and thus far more carbon-intensive per unit of energy produced, than burning fossil fuels.

Measured at the stack, biomass combustion produces significantly more CO₂ per megawatt-hour than fossil fuel combustion; a biomass-fueled boiler may have an emissions rate far in excess of 3,000 lbs. CO₂/MWh.⁴¹ Smaller-scale facilities using gasification technology—like the facilities currently being proposed under the SB 1122

³⁷ *Id.*, at 4 (emphasis in original).

³⁸ Proposed Scoping Plan at 34.

³⁹ Proposed Scoping Plan, App. D at 20.

⁴⁰ See Center for Biological Diversity et al., Comments on California Forest Carbon Plan (March 17, 2017) (submitted to CalFIRE/Forest Carbon Action Team), available at http://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest_Carbon_Plan_Comments.pdf; Center for Biological Diversity, Comments on Docket No. 16-OIR-05: Pre-Rulemaking Updates to the Power Source Disclosure Regulations (March 15, 2017) (submitted to California Energy Commission), available at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?doctetnumber=16-OIR-05> [TN# 216573, 216651]; Center for Biological Diversity, Comments on the Proposed Short-Lived Climate Pollutant Strategy (May 26, 2016), available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=slcp2016> [comment nos. 94, 96, 97]; Center for Biological Diversity, Comments on Second Set of Proposed Modifications to the AB 32 Greenhouse Gas Cap-and-Trade Regulation (Sept. 27, 2011), available at https://www.arb.ca.gov/lists/capandtrade10/1661-cbd_comments_re_ct_2nd_15day_09_27_11_with_exhibits.pdf; Center for Biological Diversity, Comments on the Proposed Greenhouse Gas Cap-and-Trade Regulation (December 15, 2010, available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=capandtrade10> [comment nos. 718, 746].) These prior comments and supporting exhibits are incorporated by reference.

⁴¹ Partnership for Policy Integrity, CO₂ Emission Rates from Modern Power Plants (2016) (estimating 3,028 lbs. CO₂/MWh emissions rate for new biomass steam turbine based on Department of Energy, Energy Information Administration, International Energy Agency, and Oak Ridge National Laboratory data).

feed-in tariff for small-scale bioenergy (see Public Utilities Code section 399.20(f))—are similarly carbon-intensive. For example, the Cabin Creek bioenergy project approved by Placer County would have an emissions rate of more than 3,300 lbs. CO₂/MWh.⁴² As one recent scientific article noted, “[t]he fact that combustion of biomass generally generates more CO₂ emissions to produce a unit of energy than the combustion of fossil fuels increases the difficulty of achieving the goal of reducing GHG emissions by using woody biomass in the short term.”⁴³

By way of comparison, California’s 2012 baseline emissions rate from the electric power sector—which includes only large, fossil-fired electric generating units subject to federal greenhouse gas performance standards—was 954 lbs. CO₂ per MWh.⁴⁴ California’s actual grid emissions intensity is likely far lower, given the increasing dominance of renewables and storage. Accordingly, replacing California grid electricity with biomass electricity likely at least *triples* smokestack emissions rates—and replacing truly low-carbon renewables with biomass is far worse.

Biomass and fossil CO₂ are indistinguishable in terms of their effects on the climate.⁴⁵ Claims about the purported climate benefits of biomass energy turn entirely on purported “net” carbon cycle effects, particularly the possibility that new growth will re-sequester carbon emitted from combustion, and/or the possibility that biomass combustion might “avoid” emissions that would otherwise occur as biological materials decompose. But even if these net carbon cycle effects are taken into account, emissions from biomass power plants tend to increase atmospheric CO₂ concentrations for decades to centuries depending on feedstocks, biomass harvest practices, and other factors. Multiple studies have shown that it can take a very long time to discharge the “carbon debt” associated with bioenergy production, even where fossil fuel displacement is assumed, and even where “waste” materials like timber harvest residuals are used for fuel.⁴⁶ One study, using realistic assumptions about initially increased and subsequently

⁴² Ascent Environmental, Cabin Creek Biomass Facility Project Draft Environmental Impact Report, App. D (July 27, 2012) (describing 2 MW gasification plant with estimated combustion emissions of 26,526 tonnes CO₂e/yr and generating 17,520 MWh/yr of electricity, resulting in an emissions rate of 3,338 lbs. CO₂e/MWh).

⁴³ David Neil Bird, et al., *Zero, one, or in between: evaluation of alternative national and entity-level accounting for bioenergy*, 4 Global Change Biology Bioenergy 576, 584 (2012), doi:10.1111/j.1757-1707.2011.01137.x.

⁴⁴ See Energy and Environment Daily, Clean Power Plan Hub, at http://www.eenews.net/interactive/clean_power_plan/states/california (visited May 18, 2016).

⁴⁵ U.S. EPA Science Advisory Board, *Science Advisory Board Review of EPA’s Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources* 7 (Sept. 28, 2012) (hereafter “SAB Panel Report”); see also *Center for Biological Diversity, et al. v. EPA*, 722 F.3d 401, 406 (D.C. Cir. 2013) (“In layman’s terms, the atmosphere makes no distinction between carbon dioxide emitted by biogenic and fossil-fuel sources”).

⁴⁶ See, e.g., Stephen R. Mitchell, et al., *Carbon Debt and Carbon Sequestration Parity in Forest Bioenergy Production*, Global Change Biology Bioenergy (2012) (“Mitchell 2012”), doi: 10.1111/j.1757-1707.2012.01173.x; Ernst-Detlef Schulze, et al., *Large-scale Bioenergy from Additional Harvest of Forest Biomass is Neither Sustainable nor Greenhouse Gas Neutral*,

repeated bioenergy harvests of woody biomass, concluded that the resulting atmospheric emissions increase may even be permanent.⁴⁷

Harvesting and processing of wood products also result in substantial CO₂ emissions.⁴⁸ Several studies have demonstrated that thinning forests and burning the resulting materials for bioenergy can result in a loss of forest carbon stocks and a transfer of carbon to the atmosphere lasting many years. Because it is impossible to know in advance that wildfire will occur in a thinned stand, thinning operations may remove carbon that never would have been released in a wildfire; one recent study concluded, for this and other reasons, that thinning operations tend to remove about three times as much carbon from the forest as would be avoided in wildfire emissions.⁴⁹ Another report from Oregon found that thinning operations resulted in a net loss of forest carbon stocks for up to 50 years.⁵⁰ Another published study found that even light-touch thinning operations in several Oregon and California forest ecosystems incurred carbon debts lasting longer than 20 years.⁵¹ Other recent studies have shown that intensive harvest of logging residues that otherwise would be left to decompose on site can deplete soil nutrients and retard forest regrowth as well as reduce soil carbon sequestration.⁵²

It has been argued that if logging residues otherwise would be burned in the open, using those same materials for bioenergy might result in a very short carbon payback

Global Change Biology Bioenergy (2012), doi: 10.1111/j.1757-1707.2012.01169.x at 1-2; Jon McKechnie, et al., *Forest Bioenergy or Forest Carbon? Assessing Trade-Offs in Greenhouse Gas Mitigation with Wood-Based Fuels*, 45 Environ. Sci. Technol. 789 (2011); Anna Repo, et al., *Indirect Carbon Dioxide Emissions from Producing Bioenergy from Forest Harvest Residues*, Global Change Biology Bioenergy (2010) (“Repo 2010”), doi: 10.1111/j.1757-1707.2010.01065.x; John Gunn, et al., Manomet Center for Conservation Sciences, Massachusetts Biomass Sustainability and Carbon Policy Study (2010), available at https://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf (visited May 24, 2016).

⁴⁷ Bjart Holtsmark, *The Outcome Is in the Assumptions: Analyzing the Effects on Atmospheric CO₂ Levels of Increased Use of Bioenergy From Forest Biomass*, Global Change Biology Bioenergy (2012), doi: 10.1111/gcbb.12015.

⁴⁸ Mark E. Harmon, et al., *Modeling Carbon Stores in Oregon and Washington Forest Products: 1900-1992*, 33 Climatic Change 521, 546 (1996) (concluding that 40-60% of carbon in harvested wood is “lost to the atmosphere . . . within a few years of harvest” during wood products manufacturing process).

⁴⁹ John L. Campbell, et al., *Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions?* Front. Ecol. Env’t (2011), doi:10.1890/110057.

⁵⁰ Joshua Clark, et al., *Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis*, Final Report (Ore. State Univ. College of Forestry May 25, 2011).

⁵¹ Tara Hudiburg, et al., *Regional carbon dioxide implications of forest bioenergy production*, 1 Nature Climate Change 419 (2011), doi:10.1038/NCLIMATE1264.

⁵² David L. Achat, et al., *Forest soil carbon is threatened by intensive biomass harvesting*, Scientific Reports 5:15991 (2015), doi:10.1038/srep15991; D.L. Achat, et al., *Quantifying consequences of removing harvesting residues on forest soils and tree growth – A meta-analysis*, 348 Forest Ecology & Mgmt. 124 (2015).

period. However, unlike combustion in a bioenergy facility, broadcast and pile burning of logging slash does not tend to consume all of the material; a significant portion may remain uncombusted on site. According to Forest Service research, fuel consumption in slash piles can range as low as 75%.⁵³ Combustion factors for broadcast understory burning of coarse woody debris can be as low as 60%.⁵⁴ Moreover, open burning of slash is not a universal practice, nor is it universally permissible; rather, it depends on local conditions, including weather and relevant air quality regulations.⁵⁵

As EPA's Science Advisory Board panel on biogenic CO₂ emissions concluded, biomass cannot be considered *a priori* "carbon neutral."⁵⁶ Rather, biomass emissions must be compared with emissions that would otherwise occur if specific feedstocks were not used for bioenergy.⁵⁷ Such a comparison requires careful attention not only to the quantity of emissions, but also to the particular alternative fates of feedstock materials and the timeframe on which emissions occur; bioenergy emissions occur almost instantaneously, while future resequestration or avoided decomposition may take years, decades, or even centuries to achieve atmospheric parity. This long period of increased atmospheric CO₂ concentrations resulting from bioenergy—combined with profound uncertainty as to the relative permanence of any land-based carbon stock recovery or sequestration⁵⁸—could seriously impede achievement of California's mid- and long-term climate goals.

Emissions from forests (part of the "Natural and Working Lands" sector) are "not currently quantified and therefore, not included in the inventory."⁵⁹ As a result, the Proposed Scoping Plan apparently does not count emissions from biomass combustion in

⁵³ Colin C. Hardy, *Guidelines for Estimating Volume, Biomass, and Smoke Production for Piled Slash*, U.S. Dept. of Agriculture, Forest Service, Pacific Northwest Research Station, Gen. Tech. Rep. PNW-GTR-364 (1996).

⁵⁴ See Eric E. Knapp et al., *Fuel Reduction and Coarse Woody Debris Dynamics with Early Season and Late Season Prescribed Fire in a Sierra Nevada Mixed Conifer Forest*, 208 *Forest Ecology & Mgmt.* 383 (2005).

⁵⁵ See, e.g., North Coast Unified Air Quality Management District (California), Regulation II, available at <http://www.ncuaqmd.org/index.php?page=rules.regulations>; Placer County (California) Air Pollution Control District, Regulation 3, available at <http://www.placer.ca.gov/departments/air/rules>.

⁵⁶ SAB Panel Report, *supra* note 45 at 18.

⁵⁷ See SAB Panel Report, *supra* note 45 at 18; see also Michael T. Ter-Mikaelian, et al., *The Burning Question: Does Forest Bioenergy Reduce Carbon Emissions? A Review of Common Misconceptions about Forest Carbon Accounting*, 113 *J. Forestry* 57 (2015); Timothy D. Searchinger, et al., *Fixing a Critical Climate Accounting Error*, 326 *Science* 527 (2009); see also Mitchell 2012, *supra* note 46 at 9 (concluding that management of forests for maximum carbon sequestration provides straightforward and predictable benefits, while managing forests for bioenergy production requires careful consideration to avoid a net release of carbon to the atmosphere)

⁵⁸ See Brendan Mackey et al., *Untangling the confusion around land carbon science and climate change mitigation policy*, 3 *Nature Climate Change* 552 (2013), doi:10.1038/NCLIMATE1804.

⁵⁹ Proposed Scoping Plan at 16.

any emissions category (i.e., in the land use sector or the energy sector); those emissions simply disappear from the ledger, rendering any decision as to the ability of the Proposed Scoping Plan to achieve legislatively mandated targets inherently unsupported and arbitrary. Moreover, as the Center has pointed out in prior comments, the draft modeling for the Natural and Working Lands inventory is preliminary, generalized, incomplete, and unsuitable as support for any particular management policy.⁶⁰ Those prior comments are also incorporated by reference.

Furthermore, as the Center also has pointed out in prior comments, treating all biomass emissions as if they do not exist is likely inconsistent with the federal Clean Power Plan.⁶¹ Those prior comments are incorporated by reference. The Center understands that there is currently some uncertainty surrounding the Clean Power Plan, but it would make little sense to adopt an approach in the Proposed Scoping Plan that risks inconsistency with federal regulations.

Finally, the Center notes and strongly agrees with the recommendations of the Environmental Justice Advisory Committee opposing biomass combustion and biofuels production.⁶² Burdens associated with siting and operation of biomass facilities often tend to fall on disadvantaged communities, particularly in the Central Valley, that are far from many sources of biomass feedstocks and that receive few if any of the purported “benefits” of using forest materials for energy. Uncritical promotion of bioenergy generation and biofuels production from forest feedstocks is inconsistent and incompatible with legislative direction regarding environmental justice and maximization of co-benefits in disadvantaged communities.

III. AB 197 Analysis: Social Cost of Carbon

The Proposed Scoping Plan relies on U.S. EPA’s “SC-CO₂” estimates in calculating the “social cost of carbon” (“SCC”), which reflects the potential economic damages avoided by (and the potential economic benefits of) action to reduce climate pollution.⁶³ The Proposed Scoping Plan properly acknowledges that “[t]here continues to be active discussion within government and academia about the role of SC-CO₂ in assessing regulations,”⁶⁴ and correctly proposes that the state continue to monitor these discussions as well as “initiate its own work to refine a SC-CO₂ method and values for

⁶⁰ Center for Biological Diversity, Comments on Public Workshop on Carbon Sequestration Modeling Methods and Initial Results for the Natural & Working Lands Sector in the 2030 Target Scoping Plan (Jan. 13, 2017), *available at* <https://www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=sp2030nwlmodeling-ws> [comment 8].

⁶¹ Center for Biological Diversity, Comments on Proposed Compliance Plan for the Federal Clean Power Plan (Sept. 19, 2016), *available at* <https://www.arb.ca.gov/lists/com-attach/7-cpp2016-AjNVZQRaUzBQbwJd.pdf>.

⁶² Proposed Scoping Plan, App. A at 6, 9, 10, 19, 20, 22.

⁶³ See Proposed Scoping Plan at 60-61.

⁶⁴ *Id.* at 60.

California.”⁶⁵ This effort is now more critical than ever, as the Trump Administration has moved to disband the Interagency Working Group on the Social Cost of Carbon and to withdraw technical documentation supporting EPA’s SCC calculations.⁶⁶

In moving forward with an SCC calculation for California, the state should rely on the best scientific information. Recent scientific literature demonstrates that the assumptions underlying the Interagency Working Group’s work are highly questionable and significantly understate the SCC value. For example, noted experts Ackerman and Stanton critiqued the Interagency Working Group’s methods and conclusions, including its use of only three flawed assessment models, FUND, PAGE, and DICE, to estimate the SCC.⁶⁷ Researchers at Stanford University published a study showing that the integrated assessment models that were used to generate federal SCC estimates do not properly account for several critical variables, particularly the effect of climate change on economic growth rates and the resulting disparities between rich and poor regions.⁶⁸ Other studies suggest improvements to the SCC modeling framework that would better account for relevant factors such as the degree of risk aversion that decision makers tend to exhibit when making policy⁶⁹ and the changing rate and intensity of economic damage above critical temperature thresholds.⁷⁰ Incorporating these improvements to the SCC would significantly increase the federal estimates, in some cases by multiple orders of magnitude.

In addition, the EPA’s SCC calculations suffer from a defect so fundamental as to render the analysis fatally defective: the SCC estimates are calculated only through 2050. This defect is all the more significant because the damage caused by CO₂ emissions lasts for centuries, if not millennia, and will dramatically *increase* after 2050. In other words, the most significant social costs of carbon are simply left out. An estimate that fails to account for years after 2050, during which the planet will experience much higher temperatures and therefore the most devastating damages caused by global warming, cannot reasonably inform decision-makers about the social cost of carbon. California can and should take these scientific critiques into account in developing its own approach to calculating the social cost of carbon.

⁶⁵ *Id.* at 61.

⁶⁶ Executive Order 13,783, *Promoting Energy Independence and Economic Growth*, § 5, 82 Fed. Reg. 16,093 (March 31, 2017).

⁶⁷ Ackerman, F., and E. Stanton, *The Social Cost of Carbon, A Report for the Economics for Equity and the Environment Network* (2010), available at www.e3network.org/papers/SocialCostOfCarbon_SEI_20100401.pdf.

⁶⁸ F. Moore and D. Diaz, *Temperature impacts on economic growth warrant stringent mitigation policy*, 5 *Nature Climate Change* 127 (2015).

⁶⁹ R.B. Howarth et al., *Risk mitigation and the social cost of carbon*, 24 *Global Environmental Change* 123 (2014).

⁷⁰ Martin L. Weitzman, *GHG Targets as Insurance Against Catastrophic Climate Damages*, National Bureau of Economic Research Working Paper No. 16136 (2010), available at <http://www.nber.org/papers/w16136>.

IV. Other Measures

A. Energy Sector

SB 350 envisioned that ARB would set a greenhouse gas target for the electricity sector for use in a new integrated resource planning (“IRP”) process for electrical procurement. (See Pub. Util. Code § 454.52(a)(1)(A).) The Public Utilities Commission is currently conducting a proceeding to institute integrated resource planning for load-serving entities.⁷¹ Early in that proceeding, CPUC staff indicated an expectation that ARB will set greenhouse gas targets pursuant to SB 350 as part of the current Scoping Plan update.⁷² The Proposed Scoping Plan, however, does not establish such a target, but rather merely lists establishment of “GHG planning targets for the electricity sector and each load-serving entity” under “Ongoing and Proposed Measures” for the energy sector.⁷³ A more recent document in the IRP proceeding confirms that “CARB has yet to establish the electricity sector share of the economywide GHG emission reduction target.”⁷⁴

ARB’s guidance—or lack thereof—is likely to have a substantial effect on the IRP proceeding, future long-term electrical procurement decisions, and ultimately the ability of the energy sector to assist in meeting 2030 greenhouse gas emissions reduction goals. Absent a target for the electricity sector that can be used in integrated resource planning, electrical procurement will remain disconnected from planning for greenhouse gas reductions, contrary to the plain intent and requirements of SB 350.

ARB’s arbitrary and unsupported decision to exempt biomass emissions from compliance obligations under the cap-and-trade program also continues to infect other agencies’ planning processes. Parties have urged the PUC to treat biomass generation as zero-emitting for purposes of electricity procurement planning, citing the biomass emissions exemption in the cap-and-trade program. Other agencies will continue to look to ARB to resolve issues concerning bioenergy emissions, and until ARB does so in a scientifically credible manner, all of the state’s greenhouse gas goals will remain in doubt.

⁷¹ Public Utilities Commission Docket No. R.16-02-007, *available at* https://apps.cpuc.ca.gov/apex/f?p=401:56:0::NO:RP,57,RIR:P5_PROCEEDING_SELECT:R1602007.

⁷² See California Public Utilities Commission, Energy Division, *CPUC Staff Concept Paper on Integrated Resource Planning* at 6 n.1 (Aug. 11, 2016).

⁷³ Proposed Scoping Plan at 90.

⁷⁴ CPUC and California Energy Commission Staff, *Options for Setting GHG Planning Targets for Integrated Resource Planning and Apportioning Targets among Publicly Owned Utilities and Load Serving Entities* at 1 (Feb. 10, 2017).

B. Industry

The Proposed Scoping Plan recommends that industrial facilities “[i]ncrease fuel switching to non-fossil fuel” to reduce emissions.⁷⁵ The plan does not specify what is meant by “non-fossil fuel.” To the extent ARB intends to encourage industrial facilities to switch to combustion of biomass or biofuels for industrial processes, the proposal lacks support; ARB must develop an accurate accounting methodology for biomass emissions before reaching any conclusion as to the emissions reduction potential of fuel-switching.

The Proposed Scoping Plan also encourages the use of renewable natural gas. Again, any proposal for increased use of renewable natural gas must be based on an accurate accounting methodology that shows clear emissions reduction benefits. Nowhere does the Proposed Scoping Plan demonstrate that any particular technology or feedstock (forest-sourced biomass feedstocks included) has such benefits.

C. Transportation

Many of the “Transportation Sustainability” measures outlined in the Proposed Scoping Plan—such as moving toward zero-emission vehicles, increasing transit, and creating communities built around active transportation—will likely prove essential to meeting California’s climate goals, and their inclusion in the plan is welcome. In particular, the Proposed Scoping Plan properly acknowledges the “VMT gap,” i.e., that deeper reductions in vehicle miles traveled are necessary than can be achieved by increased SB 375 targets alone.⁷⁶ The VMT reduction goals outlined in the plan are largely appropriate, and the Center encourages their adoption. However, additional reliance on biofuels (particularly those derived from forest-sourced feedstocks) at present lacks necessary support in accurate and comprehensive greenhouse gas accounting.

The Proposed Scoping Plan also recommends that California Environmental Quality Act (“CEQA”) compliance be streamlined in order to facilitate infill development.⁷⁷ Yet the plan identifies no support for the proposition that CEQA streamlining will result in more infill development, let alone tangible VMT reductions. Indeed, a recent study by BAE Urban Economics directly challenged the notion that CEQA creates barriers to development; the BAE study found that CEQA not only coexists with, but also promotes, sustainable development by “daylighting” planning processes and ensuring adoption of feasible measures to reduce environmental impacts.⁷⁸ The complaint that CEQA poses a major barrier to development is simply unsupported by any quantitative study.⁷⁹ The link between CEQA streamlining and VMT (and

⁷⁵ Proposed Scoping Plan at 96.

⁷⁶ See Proposed Scoping Plan at 101.

⁷⁷ Proposed Scoping Plan at 105.

⁷⁸ BAE Urban Economics, *CEQA in the 21st Century: Environmental Quality, Economic Prosperity, and Sustainable Development in California* (August 2016).

⁷⁹ *Id.* at ii.

greenhouse gas) reduction suggested in the Proposed Scoping Plan lacks a sufficient factual basis.

D. Natural and Working Lands

The Natural and Working Lands section of the Proposed Scoping Plan—although not part of the “Proposed Scenario”—contains a number of unsupported assertions and assumptions. These assumptions could lead to policy prescriptions that ultimately increase rather than reduce greenhouse gas emissions and that could make it much harder for California to achieve its 2030 emissions reduction goal.

As a threshold matter, the Proposed Scoping Plan’s target for this sector is less than ambitious. The plan recommends only that natural and working lands remain a net sink for carbon.⁸⁰ Under current law, however, the forest sector alone must sequester five million metric tons CO₂e per year.⁸¹ Carbon stocks on California’s natural lands—particularly forest lands—have already been severely depleted by many decades of logging and development. Merely maintaining those lands in their current, degraded condition does not substantially advance California’s climate goals.⁸²

The Proposed Scoping Plan’s strategies for natural and working lands, in contrast, rest on numerous false and unsupported assumptions. For example, the plan states that black carbon emissions from wildfire can and should be minimized, ostensibly through more intensive forest management.⁸³ As the Center has pointed out in prior comments on the Short-Lived Climate Pollutants Strategy and the Forest Carbon Plan, however, ARB’s estimate of black carbon emissions from wildfire is uncertain by at least an order of magnitude, the warming effect of wildfire smoke as a whole is inadequately characterized, and any black carbon reductions that might be achieved through forest management are so uncertain as to be completely speculative.⁸⁴ Again, those prior comments are incorporated by reference. In any event, ARB’s statutory authority to regulate black carbon emissions from wildfire is doubtful at best. The Short-Lived

⁸⁰ Proposed Scoping Plan at ES5, 108-09.

⁸¹ See Pub. Res. Code §§ 4512.5(b), 4551(b).

⁸² A recent report released by Dogwood Alliance outlines a strategy for maximizing forest carbon sequestration that focuses on protection of forest lands, not just the type of continued industrial management suggested by a term like “working” lands. See generally Bill Moomaw, Ph.D., and Danna Smith, *The Great American Stand: US Forests and the Climate Emergency* (2017), available at <https://www.dogwoodalliance.org/wp-content/uploads/2017/03/The-Great-American-Stand-Report.pdf>.

⁸³ See Proposed Scoping Plan at 14-15, 109, 110.

⁸⁴ Center for Biological Diversity et al., Comments on California Forest Carbon Plan (March 17, 2017) (submitted to CalFIRE/Forest Carbon Action Team), available at http://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest_Carbon_Plan_Comments.pdf; Center for Biological Diversity, Comments on the Proposed Short-Lived Climate Pollutant Strategy (May 26, 2016), available at <https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=slcp2016> [comment nos. 94, 96, 97].

Climate Pollutants Strategy is limited by statute to addressing “anthropogenic” black carbon emissions. (Health & Safety Code § 39730.5(a).) In addition, black carbon is not a “greenhouse gas” as defined in AB 32 (Health & Safety Code § 38505(g)), and thus is not directly relevant to either the “greenhouse gas emissions limit” established by AB 32 or the longer-term “greenhouse gas emissions reductions” required under SB 32. (*Id.*, §§ 38550, 38566). Absent some source of statutory authority, it is not clear ARB can undertake to regulate natural, non-anthropogenic black carbon emissions through the Scoping Plan or otherwise.

Other assertions and assumptions in the Proposed Scoping Plan—particularly concerning the occurrence of wildfire in California forests and the forest management strategies purportedly necessary to reduce wildfire incidence and risk—similarly lack support.⁸⁵ The Proposed Scoping Plan—like the Forest Carbon Plan—seems to proceed on the assumption that removing wood from the forest and using it for energy production or transportation fuels will reduce emissions and increase forest carbon stocks.⁸⁶ As the Center has pointed out in comments on the Forest Carbon Plan—again incorporated by reference—large-scale forest thinning projects of the type envisioned in both plans are likely to result in considerable carbon *losses* in California forests, particularly during the time frame relevant to achievement of the state’s 2030 emissions reduction goal.⁸⁷ The Proposed Scoping Plan appears to acknowledge this problem, at least indirectly, by claiming that these strategies simply trade “some near-term carbon loss” for “more resilient and healthier forests in the longer time frame.”⁸⁸ But the plan identifies no adequate factual support for this vague promise of future resiliency and health; nor does it adequately demonstrate that near-term carbon losses will lead to future carbon sequestration. Even the rough, provisional and flawed modeling conducted for the plan update reveals that forest management alternatives result in deep and lasting carbon losses well beyond 2030. Indeed, the “high management” strategy modeled for the plan would result in a loss of nearly 20 million metric tons of carbon—equivalent to more than 73 million metric tons of CO₂—by 2030.⁸⁹ Especially given that CO₂ exerts its greatest warming effect over the short term (although the warming effect also persists over the

⁸⁵ See, e.g., Proposed Scoping Plan at 2, 9, 14-15, 26, 109-110, 115-118.

⁸⁶ *Id.* at 113-119. Although the Proposed Scoping Plan does not appear to rely on or incorporate the Forest Carbon Plan, it does envision that the Forest Carbon Plan will be completed and implemented as part of California’s “tapestry” of climate strategies. See *id.* at ES7, 7, 14 n.28, 118.

⁸⁷ Center for Biological Diversity et al., Comments on California Forest Carbon Plan (March 17, 2017) (submitted to CalFIRE/Forest Carbon Action Team), *available at* http://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest_Carbon_Plan_Comments.pdf. A CD containing copies of references cited in the Forest Carbon Plan comments will be submitted under separate cover for inclusion in the record of proceedings for the Proposed Scoping Plan.

⁸⁸ Proposed Scoping Plan at 26.

⁸⁹ Proposed Scoping Plan, App. G at 6.

long term),⁹⁰ any strategy that entails moving large amounts of carbon from the forest to the atmosphere in the next several decades directly conflicts with California's climate goals.

In sum, the "Potential Actions" and "Efforts to Support Sector Objectives" outlined in the Proposed Scoping Plan contain a number of assertions and proposals that are not supported by adequate modeling or any other analysis. ARB cannot simply continue to assume, rather than demonstrate, that thinning and bioenergy production will increase carbon sequestration, in the face of considerable evidence before the agency showing that these activities may well increase carbon emissions.

E. Waste Management

The Proposed Scoping Plan rightly targets numerous emissions reduction opportunities in the waste management sector. Additional research should include developing methodologies for analysis and identification of the lowest-emission alternatives for dealing with particular waste streams; burning waste, or trying to turn it into fuel that then gets burned, may not be the lowest-emission alternative, and may come with a host of other economic and environmental costs.

V. Achieving Success

The Proposed Scoping Plan correctly emphasizes the importance of action by local jurisdictions.⁹¹ These comments touch on only two categories of local action: climate action plans ("CAPs") and project-specific CEQA mitigation.

CAPs should not be viewed solely as a method of streamlining development approvals or CEQA compliance. Rather, CAPs should be seen as a tool for building strong, quantitative linkages between statewide targets and concrete measures under the control of local jurisdictions. In other words, an adequate CAP must be grounded in state emissions reduction goals, quantitative, enforceable, and specific before any streamlining is appropriate. Done right, a CAP could provide local jurisdictions with powerful tools for ensuring that individual project decisions will be consistent with statewide climate goals. Done incorrectly, however, CAPs could simply obscure the extent to which individual projects may be increasing emissions notwithstanding state requirements.

CEQA is also an important and powerful tool for ensuring that individual projects, which often cause emissions increases, adopt all feasible project-level mitigation measures and alternatives to reduce emissions to the greatest extent practicable. The

⁹⁰ Katharine L. Ricke and Ken Caldeira, *Maximum Warming Occurs About One Decade after a Carbon Dioxide Emission*, 9 ENVIRON. RES. LETT. 124002 (2014), doi:10.1088/1748-9326/9/12/124002.

⁹¹ However, the Center notes that some of the suggestions for local action in Appendix B embrace the unsupported assumptions about wildfire, forest management, and bioenergy/biofuels production referenced elsewhere in the Proposed Scoping Plan.

mitigation strategies outlined in Appendix B to the Proposed Scoping Plan are a welcome and useful guide for local jurisdictions. That said, the discussion of offset credits as CEQA mitigation in Appendix B is inadequate and should be clarified. In order to function as effective and enforceable mitigation under CEQA, offset credits must be rigorously additional, verifiable, real, quantitative, and permanent. Offset credits available from many registries (including CAPCOA's GHGRx registry) do not reliably meet these standards, and should not be promoted as adequate for CEQA mitigation purposes.

Moreover, it is doubtful as a scientific matter that land-based carbon offsets—even those generated under ARB-certified protocols—can adequately mitigate for project-level fossil emissions. One recent study concluded that California's compliance protocol for improved forest management projects is unlikely to change land management decisions already in forest landowners' interests, and thus is likely creating non-additional offset credits.⁹² Another recent global analysis pointed to fundamental physical limits on the ability of land-based carbon stocks, including forests, to absorb necessary quantities of fossil carbon emissions.⁹³ Among other conclusions, the study noted that fossil CO₂ emissions should be presumed to persist in the atmosphere for 10,000 years, not 100 years—meaning that terrestrial carbon storage projects must demonstrate permanence not just on century timescales, but on multi-millennial timescales.⁹⁴ ARB's US Forest Project Protocol, like many other offset protocols, requires carbon reductions to be monitored for only 100 years.⁹⁵ Fossil CO₂ emissions from a development project are, as a practical matter, “irreversible.”⁹⁶ Even if offset credits are assumed to be rigorously additional, they are not permanent on timescales necessary to mitigate the physical impact on climate change.

Finally, it bears mention that AB 900 certification is not dispositive of a project's emissions, the significance of those emissions, or the necessity for mitigation. As one court recently put it, “the Governor's certification [under AB 900] serves a distinct purpose and is not a substitute for a CEQA determination on the significance of greenhouse gas emissions” (*Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App 5th 160, 198 fn.26.) Any suggestion to the contrary in the Proposed Scoping Plan⁹⁷ is inconsistent with law.

⁹² See Erin Clover Kelly and Marissa Bongiovanni Schmitz, *Forest offsets and the California compliance market: Bringing an abstract ecosystem good to market*, 75 *Geoforum* 99, 106 (2016).

⁹³ Brendan Mackey et al., *Untangling the confusion around land carbon science and climate change mitigation policy*, 3 *Nature Climate Change* 552 (2013), doi:10.1038/NCLIMATE1804.

⁹⁴ *Id.* at 556.

⁹⁵ California Air Resources Board, Compliance Offset Protocol: U.S. Forest Projects at 30 (June 25, 2015), available at <https://www.arb.ca.gov/cc/capandtrade/protocols/usforest/forestprotocol2015.pdf> (“For purposes of this protocol, 100 years is considered permanent.”).

⁹⁶ Mackey 2013, *supra* note 93 at 553.

⁹⁷ See Proposed Scoping Plan at 136.

VI. The Draft Environmental Assessment Fails to Comply with the California Environmental Quality Act and Cannot Support Approval of the Proposed Scoping Plan as Drafted.

A. The Draft Environmental Analysis Fails to Disclose, Evaluate, or Propose Mitigation for Impacts of the Natural and Working Lands Strategy

Public agencies may not approve or carry out any project that may have a significant effect on the environment without first complying with the California Environmental Quality Act (“CEQA”). (Pub. Res. Code §§ 21001, 21002.1, 21081.) A “project” is any discretionary action that may cause a direct or a reasonably foreseeable indirect physical change in the environment. (See Pub. Res. Code § 21065.) As ARB correctly recognizes, the Proposed Scoping Plan is a “project” for purposes of CEQA.⁹⁸

The status of the Natural and Working Lands component of the Proposed Scoping Plan relative to the “Proposed Scenario” is somewhat ambiguous. On one hand, the Proposed Scoping Plan claims that it “comprehensively addresses for the first time the greenhouse gas emissions from natural and working lands of California – including the agriculture and forestry sectors.”⁹⁹ On the other hand, however, the Proposed Scoping Plan acknowledges that because Natural and Working Lands inventories are not yet complete, analyses in Chapter II (the “Proposed Scenario”) “do not include any estimates” from the Natural and Working Lands sector.¹⁰⁰ Nor does any aspect of the “Proposed Scenario” explicitly rely on any of the actions contemplated in the Natural and Working Lands discussion in the Proposed Scoping Plan.¹⁰¹

As discussed above and in separate comments incorporated by reference, implementation of many of the foreseeable compliance actions associated with the Natural and Working Lands discussion in the Proposed Scoping Plan, as well as actions associated with implementation of the Forest Carbon Plan, may have a number of potentially significant environmental effects. The Draft EA, however, does not disclose, analyze, propose mitigation for, or evaluate alternatives that could feasibly avoid, any of these potentially significant impacts. Indeed, the Draft EA explicitly defines the “project” under review for CEQA purposes as including only “the recommended measures to achieve the 2030 target in Chapter II of the Proposed Plan.”¹⁰²

⁹⁸ Proposed Scoping Plan at 82.

⁹⁹ *Id.* at ES1.

¹⁰⁰ *Id.* at 31.

¹⁰¹ *Id.* at 34-36 (Table II-1).

¹⁰² Draft EA at 9; see also *id.* at 12 (describing “known commitments” and “additional measures” comprising “project” analyzed in Draft EA).

In short, none of the potential impacts associated with Natural and Working Lands measures (including but not limited to the Forest Carbon Plan) are addressed in the Draft EA. Accordingly, ARB cannot lawfully approve or carry out any aspect of the Natural and Working Lands portion of the Scoping Plan prior to conducting a revised CEQA analysis that fully discloses, analyzes, and proposes mitigation for its potentially significant environmental effects. Nor can ARB or any other agency rely on the Draft EA in approving or carrying out the Forest Carbon Plan.

B. The Draft EA Fails to Address Greenhouse Gas Emissions from Additional Biomass Energy and Biofuels Facilities.

As discussed above and in separate comments incorporated by reference, when measured at the smokestack, biomass energy production is considerably more carbon-intensive than either fossil-fueled or other renewable generation. Determining the “net” atmospheric impact of biomass generation, and the time frame over which such an impact may occur relative to the goals of SB 32, require a degree of analysis that neither the Draft EA nor the Proposed Scoping Plan contain. Any express or implicit conclusion as to the “net” effects of bioenergy production in either the Proposed Scoping Plan or the Draft EA therefore lacks evidentiary support.

Increased bioenergy development is a foreseeable consequence of the Proposed Scoping Plan. For example, a commitment to the 50% RPS pursuant to SB 350 is among the “known commitments” defined as part of the “project” considered in the Draft EA.¹⁰³ Feasible compliance responses include development of “[a]dditional renewable energy supplies . . . from new . . . solid-fuel biomass [and] biogas” facilities.¹⁰⁴ LCFS measures are also expected “to increase the use of biomass-based fuels.”¹⁰⁵ Attachment A to the Draft EA acknowledges that bioenergy generation, unlike “non-biomass renewable sources of energy (hydropower, geothermal, wind, and solar),” directly emits greenhouse gases.¹⁰⁶

Yet the greenhouse gas chapter of Draft EA completely omits any discussion of greenhouse gas emissions from new bioenergy and biofuels facilities.¹⁰⁷ Other sections of the EA at least cursorily mention impacts associated with biomass facility development,¹⁰⁸ but the greenhouse gas section of the document is completely silent. This lack of disclosure and analysis not only fails to inform decision-makers and the public but also precludes consideration of mitigation measures and/or alternatives that could reduce

¹⁰³ Draft EA at 14.

¹⁰⁴ *Id.* at 15, 36.

¹⁰⁵ *Id.* at 16.

¹⁰⁶ Draft EA Attachment A at 19; see also *id.* at 26 (acknowledging that biomass combustion emits greenhouse gases).

¹⁰⁷ See Draft EA at 93-95, 163.

¹⁰⁸ See, e.g., Draft EA at 46-47 (aesthetics), 53-54 (agriculture and forestry), 59-60 (air quality), 79-81 (biological resources), 114-15 (hydrology and water quality), 122-23 (land use and planning), 153 (water use and utility systems).

or avoid those increases. The Draft EA’s complete failure to address these effects renders the document inadequate under CEQA as a matter of law. *See, e.g., Sierra Club v. Bd. of Forestry*, 7 Cal. 4th at 1236 (complete absence of information made meaningful assessment of potentially significant impacts and development of mitigation measures impossible; “[i]n these circumstances prejudice is presumed”); *Bakersfield Citizens for Local Control v. City of Bakersfield*, 124 Cal. App. 4th 1184, 1198 (2004).

The Draft EA’s failure to disclose or evaluate potentially significant greenhouse gas increases from additional bioenergy production also renders its conclusion that the Proposed Scoping Plan’s climate impacts will be beneficial unsupported by substantial evidence. The Draft EA contains only the most cursory discussion of construction-related emissions associated with Proposed Scoping Plan compliance measures, and concludes that these emissions are “not considered substantial” in relation to the overall reductions the plan is intended to achieve. Yet without acknowledging all of the emissions that may be caused by foreseeable compliance responses under the plan, the Draft EA fails to provide an evidentiary basis for any such conclusion. In essence, the Draft EA improperly attempts to balance the Strategy’s adverse climate impacts against its claimed climate benefits. “CEQA does not authorize an agency to proceed with a project that will have significant, unmitigated effects on the environment, based simply on a weighing of those effects against the project’s benefits, unless the measures necessary to mitigate those effects are truly infeasible.” *City of Marina v. Bd. of Trs. of Cal. State Univ.*, 39 Cal. 4th 341, 368-69 (2006).

B. The Alternatives Analysis Is Inadequate.

Both the Proposed Scoping Plan and the Draft EA discuss alternatives to the “Proposed Scenario,” particularly its reliance on a cap-and-trade system for a substantial portion of required reductions. Yet the non-cap-and-trade alternatives in both documents are neither formulated nor analyzed adequately. Indeed, the project objectives—particularly those articulated in the Proposed Scoping Plan itself—appear to have been chosen precisely to preclude any alternative that does not include cap-and-trade. Moreover, the Draft EA does not adequately demonstrate that non-cap-and-trade alternatives are infeasible within the meaning of CEQA.

The “policy criteria” used to compare alternatives in the Proposed Scoping Plan differ somewhat from the “project objectives” that frame the alternatives analysis in the Draft EA.¹⁰⁹ For example, one of the key “policy criteria” listed in the plan involves the creation and preservation of “linkages” with other jurisdictions’ climate change programs.¹¹⁰ According to the Proposed Scoping Plan, one of the key disadvantages of the non-cap-and-trade alternatives—and thus one of the reasons for rejection of these alternatives—is that they present “limited opportunities for linkages” with other programs.¹¹¹ Yet “linkages” are not mentioned among the project objectives enumerated

¹⁰⁹ Compare Proposed Scoping Plan at 45-48 with Draft EA at 175-77.

¹¹⁰ See Proposed Scoping Plan at 46, 48.

¹¹¹ *Id.* at 50 (no cap-and-trade), 51 (carbon tax).

in the Draft EA.¹¹² As a result, the Draft EA does not address whether “limited opportunities for linkages” renders a non-cap-and-trade alternative infeasible.

The inconsistency between “policy criteria” and “project objectives” undermines the Draft EA’s informational value. To the extent perceived limitations on “linkages” provide a rationale for rejecting a non-cap-and-trade alternative, the Draft EA fails to support that rationale with any analysis or evidence. Rejecting an alternative on the basis of such limitations would be legally questionable in any event; an environmental analysis may not define project objectives in an “artificially narrow” way that forecloses meaningful consideration of alternatives and effectively predetermines the result. (*North Coast Rivers Alliance v. Kawamura* (2015) 243 Cal.App.4th 647, 668-70.)

The Proposed Scoping Plan’s apparent conflation of “linkages” with “cap-and-trade” also unnecessarily constrains its assessment of alternatives. While ARB is required by statute to “consult with other states . . . to facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs” (Health & Safety Code § 38564), nothing in the statute limits these “integrated” programs to cap-and-trade programs. The Proposed Scoping Plan and Draft EA thus fail to contemplate any options for regional, national, and international collaboration other than carbon market linkages. More importantly, neither document offers any estimation of the extent to which the loss of carbon market linkages would impede greenhouse gas reductions in California or abroad. Again, absent such analysis in either the Proposed Scoping Plan or the Draft EA, ARB cannot rationally conclude that a non-cap-and-trade alternative is infeasible on the basis of its inability to provide “linkages” with other programs.

The Draft EA further fails to establish that non-cap-and-trade alternatives are actually infeasible within the meaning of CEQA. At least some of the alternatives described in the Draft EA do not appear to match the alternatives evaluated in Proposed Scoping Plan Appendices D and E. Those appendices, moreover, at best show that one or two non-cap-and-trade alternatives may be more costly than the proposed scenario; they do not, by themselves, adequately establish that such alternatives are economically impracticable or otherwise infeasible.

Finally, it seems that neither the Proposed Scoping Plan nor the Draft EA undertook to craft a good-faith non-cap-and-trade alternative that could feasibly achieve the emissions reductions required under SB 32 while avoiding the continuation and exacerbation of environmental burdens associated with cap-and-trade. The Proposed Scoping Plan and Draft EA should have identified and evaluated the most cost-effective measures for closing the “gap” between the reductions expected to be achieved by refinery measures and the reductions necessary to meet the 2030 target. Absent such an evaluation, the Draft EA fails to consider an adequate range of reasonable alternatives, as CEQA requires.

¹¹² Draft EA at 175-77.

California Air Resources Board
Re: Proposed 2017 Climate Change Scoping Plan Update and Draft EA
April 10, 2017

VII. Conclusion

Thank you very much for your consideration of these comments. We look forward to working with ARB staff and members of the Board to improve the Proposed Scoping Plan and Draft EA at this critical juncture in the state's efforts to help avoid the worst impacts of climate change.

Sincerely,

Kevin P. Bundy
Senior Attorney

Brian Nowicki
California Climate Policy Director

Encl.: List of References Cited

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