



December 16, 2016

The Honorable Mary Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on 2030 Scoping Plan Update – Discussion Draft

Dear Chair Nichols:

The Bioenergy Association of California, which represents more than 60 public agencies and private companies working to convert organic waste to energy, submits these Comments on the 2030 Scoping Plan Discussion Draft, released December 2. BAC applauds the Air Board for its continued leadership on climate change, its strong emphasis on science, and the increasing focus on cross-sector measures and benefits. BAC recommends several important additions, however, to ensure that California is on track to meet its 2030 climate goals and to maximize other benefits of addressing climate change. Above all, BAC urges the Air Board to include greater transparency about the effectiveness of specific measures taken to date and proposed in the Scoping Plan Update, which is critical to achieve the state's climate goals.

A. OVER-ARCHING COMMENTS

BAC strongly supports ARB's and the state's climate goals and applauds ARB's continued leadership in this area. Although aggressive, the science makes clear the need to achieve California's 2030 and 2050 climate goals. As the Scoping Plan Update demonstrates, climate impacts on California and globally have already begun and will become quite dire by mid-century without aggressive efforts to combat climate change.

1. The Update correctly emphasizes cross-sector measures.

BAC strongly supports the increased focus on cross-sector and integrated approaches to emissions reduction. As the Update notes, the cross-sector impacts and benefits of climate change measures are significant and must be considered in developing an economy-wide emissions reduction strategy. Table

II-1 provides an excellent illustration of the integrated nature of emissions sources and solutions. An important corollary to this framework, however, is to better quantify and monetize the co-benefits of cross-sector measures, which should be included in a section on critical research needs (see Section E below).

Two important cross-sector measures that are omitted from the introductory sections are SB 1122 (Rubio, 2012), now known as the BioMAT, and the renewable gas requirements of SB 1383 (Lara, 2016). The section on known electricity measures (p. 40) should include SB 1122, which requires 250 megawatts of new small-scale bioenergy from forest, agricultural, dairy, wastewater and diverted organic waste projects. These projects can help to reduce black carbon from wildfire, methane from dairies and diverted organic waste, and fossil fuel use in the electricity sector. The section on SB 1383 (Pages 10-11) should include a description of the bill's requirement to significantly increase renewable gas production and use. Although described late in the Update, this is a significant omission from the discuss of SB 1383.

2. The Update Requires Far Greater Transparency to Ensure Success.

Given the urgency of addressing climate change, BAC urges the Air Board to provide much greater transparency about the effectiveness of measures taken to date and measures proposed in the Scoping Plan Update. The Update does not provide emissions reductions per sector or per measure – either reductions to date or projected reductions by 2030 – with makes it difficult to measure progress or to ensure that California is on track to meet its 2020 and 2030 goals. It also makes it impossible to assess the cost-effectiveness of various measures. Projected reductions, such as contained in Figure III-2, show ideal scenarios, but there is no table that shows specific, expected reductions by measure. There is also no data provided on the cost-effectiveness of different measures.

AB 197 (Garcia, 2016) requires this greater transparency. AB 197 directs ARB to identify for each emissions reduction measure, including cap and trade expenditures and other market-based compliance mechanisms:

- The range of projected GHG emissions reductions that result from the measure.
- The range of projected air pollution reductions that result from the measure.
- The cost-effectiveness, including avoided social costs, of the measure.

In earlier Scoping Plans the Air Board provided a very helpful table that showed the estimated reductions for each measure. The table was helpful for assessing whether the state was on track to meet the necessary reductions and for showing the relative contributions that each measure and sector make to the overall climate strategy. For example, Table 2 in the 2008 Scoping Plan lists 22 specific measures and with the expected GHG reductions from each measure to achieve the state's 2020 goals. This kind of table is critical to track progress and effectiveness.

Earlier this year, the Legislative Analyst's Office released an assessment of the cost-effectiveness of cap and trade funded programs. It shows an extremely wide range of cost-effectiveness that needs to be explored more fully and much more transparently. For instance, the LAO analysis found that investments in heavy duty trucks were not as cost-effective as other investments, but those investments were made prior to the Air Board's certification of the ultra-low NOx (.02 gram) natural gas engine from Cummins-Westport that can run on carbon negative biogas. Re-assessing this category is very important now with the addition of ultra-low NOx engines and carbon negative fuels. It will be critical going forward to make clear what, specifically, each investment type is for and what the benefits actually are. If some measures are less cost-effective but still critical "stretch" measures to advance new technologies or strategies, the state needs to be transparent about that. On the other hand, if other measures are clearly the most cost-effective, the state should do more to promote those measures.

BAC also urges ARB to distinguish between measures that reduce Short-Lived Climate Pollutants and measures that reduce carbon dioxide. Both are critical, but reducing SLCP's will have a more immediate impact and is therefore more urgent. Years and decades matter – a lot – in the fight against climate change and distinguishing between measures that can immediately begin to reduce climate change and its impacts are much more valuable than measures that will take decades or centuries to change the climate change trajectory.

Increasing the Update's transparency is critical not just to ensure the success of the plan overall. It is also important to build and maintain support for the state's climate change strategies. Lack of transparency leads to distrust, an erosion of public and policymaker support, and vulnerability to legal challenges.

3. Need More Specifics about Capacity and Costs.

The Update notes that the economic evaluation of proposed measures is still underway. The Update is not complete, however, without the economic evaluation and a more detailed assessment of infrastructure and capacity needs to implement specific measures. In some sectors, such as electricity, we know exactly how many megawatts are needed to reach a certain RPS amount. In other sectors, however, there is no discussion or quantification of the capacity needed to achieve the goals. For bioenergy, particularly in the solid waste and forest sectors, California has lost significant capacity in recent years. To achieve the SLCP and renewable gas goals, the Update should provide much more detail about the status of facilities and quantify the capacity and infrastructure needed to meet the goals for waste diversion, methane reduction and forest carbon sequestration.

Transparency about capacity/infrastructure needs will help to ensure that programs are tailored to meet the goals and should help to align funding

correctly. Failing to identify capacity needs makes success in any given sector much less likely.

B. RENEWABLE GAS PROVISIONS

BAC strongly supports ARB's recommendation for a 5 percent renewable gas requirement, and urges the Air Board to include 5 percent renewable gas in all scenarios, not just Alternative 1. BAC agrees with the Update that renewable gas has an important role in reducing emissions from the electricity, transportation and industrial sectors. The Update needs to define renewable gas and biomethane correctly (it does not) and needs to include additional policies and incentives to promote renewable gas.

1. Need Correct Definitions of RNG and Biogas.

The Update incorrectly defines renewable gas as "pipeline quality gas," (p. 39) which ignores the production and use of renewable gas that may not be pipeline quality but nonetheless can be used for onsite electricity, transportation fuel, heating and other uses. In fact, the vast majority of RNG produced and used in California at this point – more than 99% - is used onsite rather than transmitted via pipeline because of California's unnecessarily costly pipeline standards and interconnection costs for biogas. While improving pipeline access for biogas is hugely important – and SB 840 and AB 2313, both passed in 2016, should help to reduce pipeline biogas costs – there is no reason to define or limit RNG to pipeline quality or pipeline transmission.

The Update also defines biogas incorrectly as the gas that is produced from anaerobic digestion. Biogas can also be produced using other technologies to convert biological (organic) material to gas. Health & Safety Code section 25421 defined biogas as limited to anaerobic digestion because it was focused on pipeline biogas and anaerobic digestion was the only commercial technology at the time that could produce pipeline biogas. Gasification and other conversion technologies have since been commercialized and can produce RPS eligible biogas. Assemblyman Gatto, the author of AB 1900 (2012), which created H&S Code 25421, wrote to the CPUC in 2013 to clarify that it was not intended to limit the definition of biogas outside of the pipeline context (see Attachment 1). More recent legislation (SB 1043 and AB 2206) have attempted to correct the definition of biogas in statute and make it consistent with RPS eligible biogas. This is an important correction needed to achieve the potential for renewable (biogas) production and use in California since more than half of the eligible organic waste is not suitable for anaerobic digestion, but can be converted to biogas through other conversion technologies.

2. Need to Expand Measures to Promote Renewable Gas.

BAC also urges ARB to include the 5 percent renewable gas requirement in all scenarios, not just Alternative 1.

The Update lists several measures that have led to the successful expansion of renewable electricity in California: the RPS, California Solar Initiative, Self Generation Incentive Program, tax incentives, and more. California should adopt similar policies and incentives to increase renewable gas production and use. BAC urges ARB to include measures such as tax incentives, utility procurement requirements, incentives targeted specifically at SLCP reduction (such as an adder to LCFS and RPS credits), dedicated RD&D funding for renewable gas, etc.

C. NATURAL AND WORKING LANDS

BAC strongly supports the provisions on working and natural lands, which provide an excellent summary of the importance of these lands for sequestering carbon and reducing emissions from wildfire, agriculture and livestock. BAC urges ARB to include more specific measures to reduce emissions from these sectors.

1. Need specific measures to reduce black carbon from wildfire.

Wildfire is an increasing and significant source of black carbon. On average, wildfire related black carbon emissions constitute 10 percent of California's total climate emissions (66% of all black carbon, which is 15% of California's total climate emissions). The state's climate strategy depends on maintaining and even increasing carbon sequestration in its forests and other natural lands, yet we are quickly losing that carbon sink to wildfire. While there are many questions still to answer, state and federal forest agencies all agree that certain measures are unquestionably needed, including forest fuel treatment, especially in high hazard zones, reforestation to prevent erosion and protect water supply and quality, and bioenergy to reduce emissions from dead and dying trees.

BAC is very concerned that neither the SLCP Strategy nor the 2030 Scoping Plan Update provide specific recommendations to reduce black carbon emissions from wildfire. Without taking significant additional steps to reduce catastrophic fires, wildfire related emissions will quickly offset reductions in other sectors.

BAC urges ARB to include specific measures to reduce black carbon emissions from wildfire, including many of the measures presented in the September 2015 version of the SLCP Strategy.

2. Need to Update and Implement Existing Strategies.

BAC supports the strategy to "innovate" biomass disposal methods (pp. 60 and 64). An important way to do this would be to update the 2012 Bioenergy Action Plan, which is seriously out of date at this point. Ensuring that the CPUC fully

and quickly implements the forest biomass provisions of SB 1122, SB 859 and the Governor's Emergency Proclamation would also help.

D. SOLID WASTE SECTOR

BAC supports the waste diversion and landfill gas capture goals for the solid waste sector. BAC also agrees that organic waste should be viewed as a resource that should be put to its most beneficial use. The Update incorrectly limits bioenergy production to anaerobic digestion (see pages 73 and 75) when multiple conversion technologies are available and necessary to convert organic waste to energy. Urban wood waste, agricultural waste and other cellulosic waste is not well suited to anaerobic digestion, but can be converted to energy through gasification and other conversion technologies.

1. Update must accurately assess facilities needed.

As part of the strategy to reduce emissions from the waste sector, the Update should accurately reflect the status of waste diversion facilities, the current capacity of those facilities, and the number of new facilities needed. The organic waste diversion goals in SB 1383, the most recent SLCP Strategy and the 2030 Scoping Plan Update fail to account for the closure of existing facilities and the enormous investment needed to build new facilities. Without that investment, California will not be able to meet its landfill diversion goals and increasing amounts of agricultural waste will be burned in open field burning, which is contributing to significant air quality problems in the San Joaquin Valley Air District.

Successfully meeting the state's organic waste diversion goals will require accurately accounting for existing and needed facilities and related infrastructure.

2. Wastewater Facilities can provide much needed capacity.

BAC agrees with the Update that California should take advantage of existing waste treatment facilities' infrastructure (p. 75), which can take much of the diverted food and FOG (fats, oil and grease) waste. The state needs a more thorough assessment of where those facilities are in relation to available waste, the costs to upgrade the wastewater treatment facilities and sources of funding to provide additional waste diversion capacity.

3. Evaluation of barriers to waste diversion should be conducted by 2018, not 2020.

The Update is correct that California needs to conduct a thorough assessment of the barriers to increased organic waste diversion, but that assessment should be done as part of the evaluation required by AB 1826 (Chesbro, 2014), which must be done by 2018. Waiting until 2020 to conduct this evaluation will make it far

less useful in reaching the state's diversion goals. This assessment should be done over the next year or two instead of waiting until 2020 so that it is timely information to inform project development efforts.

E. TRANSPORTATION / PETROLEUM REDUCTION

BAC strongly supports the higher LCFS goals beyond 2020, as continued market growth is essential to increase low carbon fuels production and supply. BAC also supports the mix of technologies, fuels and VMT strategies included in the Transportation section. BAC especially supports the inclusion of Near Zero Emission Vehicles in the heavy duty and freight sectors.

1. Need to distinguish between “near zero” and “zero” climate change emissions versus criteria pollutants.

Since this is a greenhouse gas reduction plan, it is essential to clarify when “near zero” refers to criteria pollutants – as ARB uses the term – and when it refers to greenhouse gas emissions. In the case of motor vehicles using biogas from dairy or diverted organic waste, the greenhouse gas emissions may be zero or even carbon negative. The GHG emissions are zero or less than zero while the criteria pollutants from these vehicles are often termed “near zero” despite the fact that their certification is viewed by the South Coast AQMD to be “zero emission equivalent”. Further, a recent UC Riverside study tested these “near zero” engines and found that their in-use performance was as low as 0.001 grams NOx which is well below zero emission vehicle performance on a lifecycle basis. These distinctions are critical as ARB prioritizes funding and other programs whose primary focus is to reduce GHG emissions. Both policies and incentives must be much more transparent about both GHG and NOx emissions by measure and by funding program. The greatest opportunities to reduce both GHG and NOx emissions are, without doubt, in the heavy duty vehicle sector.

2. Need additional measures to reduce petroleum.

BAC strongly supports the LCFS program, but as currently structured, the LCFS program is not enough to transform the transportation fuels market. Above all, it does not provide the long term certainty needed for new project financing. To really increase the production and use of low carbon fuels, the state needs to adopt incentives and policies that provide long term certainty to low carbon fuel producers such as the Strategy's proposed 5 percent renewable gas requirement in the gas grid. Incentives and policies may include a credit or loan guarantee program, a third party market for LCFS credits, utility purchase requirements, requirements for long term contracts for LCFS credits, tax incentives and other measures that are more durable. Funding for low carbon transportation should also include an allocation specifically for the heaviest duty – Class 7 and 8 – vehicles, which cause a disproportionate share of both GHG and NOx emissions and consume a significant amount of fuel compared to smaller vehicle classes.

F. RESEARCH NEEDS

BAC urges ARB to include a section in the Update on research needs. The Update provides an excellent summary of climate science and the state's climate change programs are strongest when based on the best available science, but there are many open questions still about effectiveness, durability, costs, co-benefits, etc. In the bioenergy sector alone, there are many R&D needs. The Update correctly notes that the state needs to increase R&D in renewable gas (p. 75). The most obvious way to do that would be to increase the Natural Gas PIER (public interest energy research) program administered by the CEC. Some of the specific research areas needed are:

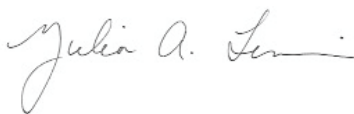
- How to increase biogas production/yields from different types of feedstocks, feedstock blends and technologies;
- Better quantification of benefits and emissions;
- More cost-effective emissions control technologies;
- Improved biogas cleanup, testing and monitoring equipment for pipeline injection;

Additional bioenergy research needs (beyond renewable gas) include:

- Lifecycle emissions from forest biomass,
- Lifecycle comparison of different end uses of organic waste (bioenergy of different kinds versus compost),
- Carbon and water savings from different organic soil amendments;
- Cost effectiveness of GHG reductions per ton of CO₂e reduced for different organic waste diversion strategies.

Once again, we applaud ARB for its leadership on climate change. We look forward to working with ARB on these recommendations and the 2030 plan generally.

Sincerely,



Julia A. Levin
Executive Director