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BAC Comments on EPIC Scoping Plan

Additional submitted attachment is included below.

August 10, 2021

Ms. Laurie ten Hope,
Deputy Director for Research
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Comments on EPIC 4 Investment Plan Scoping Workshop

Dear Deputy Director ten Hope:

The Bioenergy Association of California (BAC) submits these comments on the proposed EPIC investment initiatives presented at the August 4, 2021 workshop. BAC supports many of the proposed initiatives, but urges the Commission to focus more directly on initiatives that reduce the most dangerous climate pollutants – Short-Lived Climate Pollutants – and that can provide carbon negative emissions. While all of the proposed initiatives would help California achieve its long-term climate goals, too few of the initiatives will help to reduce global warming right away, or even in the next few decades. The latest climate science makes clear that we must focus much more on measures that can reduce warming right away.

BAC represents more than 80 local governments, public agencies, private companies, environmental and community groups, investors, utilities, research institutions and others. BAC's public sector members include local air districts, environmental agencies, waste and wastewater agencies, publicly owned utilities, public research institutions, community development and environmental groups. BAC's private sectors members include energy and technology firms, project developers and investors, investor-owned utilities, waste haulers, food and agricultural producers, and more.

BAC submits the following comments on the EPIC Initiatives presented at the August 4 workshop on EPIC 4.

1. The Most Urgent Climate Priority is to Reduce SLCP Emissions.

The latest climate report from the Intergovernmental Panel on Climate Change (IPCC) underscores how urgent the climate crisis is and that we have only a few years left to avoid a 1.5 degree Celsius temperature increase.[1] There are very few measures that can benefit the climate in just a few years and, unfortunately, fossil fuel reductions are not among them because fossil fuel burning emits carbon dioxide, which stays in the atmosphere for decades or centuries. Therefore, reductions in fossil fuels take many decades before they begin to benefit the climate.

In contrast, reducing Short-Lived Climate Pollutants (SLCPs) benefits the climate right away because SLCPs only stay in the atmosphere for hours to months. In fact, many climate scientists now agree that reducing SLCP emissions is "the last lever we have left" to avoid catastrophic climate change.[2] Climate and energy experts from around the state released a report recently that highlights the need to go beyond fossil fuel reductions and electrification to focus more on SLCP reductions and carbon removal strategies. The report authors, led by UC Berkeley Professor Dan Kammen and UC San Diego Professor V. Ramanthan, state:

> "California must now accelerate its climate policy innovation and implementation timelines to decarbonize the economy more rapidly. Still, decarbonization measures, while essential, will take two to three decades to have an impact on the steeply warming curve. The need for speed is great and it is a race against time."[3]

The report authors underscore the need for drastic reductions in SLCP emissions as the most significant step we can take to begin to reduce global warming right away.

California's largest sources of SLCP emissions are wildfire, livestock waste, landfills, controlled burns of forest and agricultural waste, and diesel emissions. All of these emissions can be reduced or eliminated with bioenergy production and use.

Recommendation: The CEC should include multiple funding initiatives focused specifically on SLCP reductions in the electricity sector.

2. Only Bioenergy Can Provide Carbon Negative Emissions Needed to Reach Carbon Neutrality.

The Commission should also focus on the potential for bioenergy to provide carbon negative emissions. Multiple reports have found that carbon neutrality is achievable

[1] https://www.ipcc.ch/assessment-report/ar6/.

[2] Presentation of Dr. V. Ramanathan, UC San Diego and Scripps Institute, Presentation June 24, 2021 at MoveLA Symposium on Short-Lived Climate Pollutant Reductions.

[3] Kammen, Ramanathan, et al. "*Accelerating the Timeline for Climate Action in California*," submitted to *Environmental Research Letters* in March 2021. Available at: https://arxiv.org/abs/2103.07801.

with existing technologies, but only if we generate far more carbon negative emissions to offset the emissions that cannot be eliminated. By far the largest opportunity for negative emissions in California is from Bioenergy with Carbon Capture and Storage (BECCS). According to Lawrence Livermore National Lab, BECCS can provide more than two-thirds of all the carbon negative emissions needed for California to reach carbon neutrality.[4] Since Governor Newsom's recent Executive Order calls for accelerating the state's carbon neutrality goal, it is all the more essential to focus on opportunities to provide carbon negative emissions, including bioenergy, carbon capture and storage or utilization (CCSU), and BECCS.

Recommendation: The CEC should include one or more funding initiatives that focus on opportunities to provide carbon negative emissions, including BECCS.

3. Bioenergy Provides the Most Cost-Effective Carbon Reductions.

According to a recent report by the California Air Resources Board to the Legislature, bioenergy provides the most cost-effective of all the state's climate investments. The report found that producing bioenergy from dairy manure or organic waste diverted from landfills cuts carbon emissions at the tiny costs of just $9 and $10, respectively, per ton of carbon.[5] This is a very small fraction of the cost of carbon reductions under the state's Low Carbon Fuel Standard (where carbon reductions cost close to $200 per ton) and many other climate investments. Lawrence Livermore National Lab also found that investments in BECCS can provide carbon negative emissions very cost-effectively – at an average cost of $55 to $60 per ton of negative emissions.[6]

Recommendation – When considering ratepayer impacts and the cost-effectiveness of EPIC investments (for instance, Initiative 8 includes two goals related to performance criteria), the CEC should consider the cost-effectiveness of carbon reductions and the benefits for air quality and public safety, not just the cost per unit of energy.

4. Bioenergy Protects Public Health and Safety.

The California Air Resources Board and CalEPA have found repeatedly that bioenergy protects public health by reducing air pollution from open burning and wildfires. In the *California Forest Carbon Plan*, adopted by CalEPA and the California Natural Resources Agency, the agencies found that bioenergy cuts particulate matter, methane,

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[4] Lawrence Livermore National Lab, *Getting to Neutral – Options for Negative Carbon Emissions in California,"* January 2020. Available at: https://www.llnl.gov/news/new-lab-report-outlines-ways-california-could-reach-goal-becoming-carbon-neutral-2045, at page 2.

[5] CARB's Annual Report to the Legislature: *California Climate Investments Using Cap-and-Trade Auction Proceeds*, issued April 2021, Table 2, pages 15 and 17.

[6] Lawrence Livermore National Lab, *Getting to Neutral – Options for Negative Carbon Emissions in California,"* January 2020. Available at: https://www.llnl.gov/news/new-lab-report-outlines-ways-california-could-reach-goal-becoming-carbon-neutral-2045, at page 8.

and carbon monoxide emissions 98 percent compared to open burning or wildfires.[7] CAPCOA, the statewide association of local air districts, has found similar benefits and also found that bioenergy cuts smog-forming pollution by 40 to 70 percent compared to open burning of forest or agricultural waste.[8]

More recently, CARB adopted a plan to phase out the open burning of agricultural waste in the San Joaquin Valley that calls for bioenergy as one of the preferred alternatives to open burning of agricultural waste. The Air Board's plan also calls for investing $15 to $30 million of public funding annually in alternatives to open burning.

The CPUC has also recognized in several recent decisions that bioenergy can protect public safety by reducing the risks and impacts of wildfire. For example, in Resolution E-4995, the CPUC stated that BioMAT projects "help to achieve important public policy objectives related to climate change, waste diversion, public safety . . ."[9] Similarly, the Assigned Commissioner's Ruling on BioMAT issued in April 2018, addressed the urgency of forest BioMAT projects to protect public safety "given the urgency of addressing the tree mortality crisis in California and the State's priority in utilizing high fire hazard zone fuel."[10] That Ruling went on to state that:

> "The BioMAT program helps to achieve important public policy objectives . . . Since SB 1122's passage and implementation, complementary and related statewide policies have been enacted that reinforce the importance of small bioenergy facilities in achieving statewide climate, waste diversion, and public safety goals." (emphasis added)[11]

Recommendation: Given the rapid increase in wildfires and the climate, air pollution, and public safety issues related to fire, the CEC should include EPIC initiatives focused specifically on reducing the risks and impacts of wildfire, providing alternatives to open burning, and better quantifying the benefits of bioenergy as an alternative to open burning. In particular, BAC urges the CEC to include multiple initiatives focused on converting forest and agricultural waste to energy, including additional demonstration projects using gasification and pyrolysis, opportunities to demonstrate gasification or pyrolysis with hydrogen generation and use, and better quantification and monetization of the use of biochar for carbon sequestration and other purposes.

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[7] "*California Forest Carbon Plan,"* adopted by the California Environmental Protection Agency, California Natural Resources Agency and CalFire in May 2018, at page 135. Available at: http://resources.ca.gov/wp-content/uploads/2018/05/California-Forest-Carbon-Plan-Final-Draft-for-Public-Release-May-2018.pdf

[8] "*CAPCOA Policy Statement on Biomass Power Plants"* adopted December 2016, at page 1. Available at: http://www.capcoa.org/wp-content/uploads/2016/12/CAPCOA_Biomass_Policy_Dec_2016.pdf.

[9] CPUC Resolution E-4995, issued March 14, 2019, at page 5.

[10] Assigned Commissioner's Ruling issued April 16, 2018 in R. 15-02-020, at page 3.

[11] Id. At page 16.

5. Bioenergy Increases Electricity Reliability.

BAC supports the proposed initiatives on firm and dispatchable renewables (Initiatives 8 and 9) and urges the Commission to focus more on short- and medium-term reliability issues. The CPUC recently recognized the importance of resource diversity and, especially, the need for firm renewables in its Decision on mid-decade reliability in the Integrated Resources Planning proceeding.[12] In that Decision, the CPUC requires the utilities to procure 1,000 MW of firm renewable generation (geothermal and bioenergy) to increase reliability by mid-decade.

Recommendation: In addition to the specific initiatives on offshore wind, geothermal, and solar, the Commission should include initiatives focused on bioenergy to help increase renewable resource diversity going forward.

6. Many Proposed Initiatives Should Explicitly Include Bioenergy.

As noted above, bioenergy is unique among renewable resources because it can:

- Reduce the largest sources of SLCP emissions in California,
- Provide carbon negative emissions cost-effectively and at scale,
- Reduce public safety risks from wildfire,
- Reduce air and climate pollution from landfills and open burning of forest and agricultural waste,
- Provide dispatchable and baseload renewable power,
- Provide long-duration energy storage, and
- Provide the only carbon negative source of hydrogen.

Recommendation: For all these reasons, BAC urges the Commission to add additional initiatives or expand the proposed EPIC initiatives to focus on:

a) Advanced and emerging technologies that convert organic waste to electricity, including non-combustion conversion coupled with hydrogen generation;
b) Use of bioenergy in microgrids;
c) Use of biogas (from anaerobic digestion and gasification/pyrolysis) to provide long-duration energy storage (Initiative 6);
d) Carbon benefits of BECCS;
e) Explicitly include bioenergy in the definition of, and initiatives around, “green hydrogen” (Initiatives 7 and 9);
f) Include bioenergy and synchronous generators in the initiatives on grid reliability (Initiatives 10 and 11);
g) Expand the role of bioenergy in Initiatives 8 and 9;
h) Include bioenergy in solutions to Industrial, Agricultural and Water sectors (Initiative 21) – this Initiative should not be limited to load flexibility when these

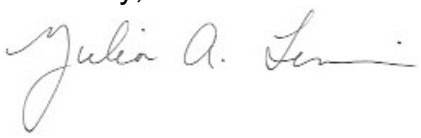
[12] CPUC Decision 21-06-035, issued June 30, 2021 in R. 20-05-003.

sectors produce organic waste and biogas that can be converted to power, CHP, and hydrogen; and

i) Expand Initiative 25 to include both bioenergy and renewable hydrogen as low carbon sources of high temperature, industrial heating.

Thank you for your consideration of these comments.

Sincerely,



Julia A. Levin
Executive Director