



December 10, 2020

MEMORANDUM

To: Transition Team of President-Elect Joe Biden
From: Biomass Power Association
Re: Biomass Power's Role in Helping the Biden Administration Meet Its Climate Goals

We congratulate President-Elect Biden and his staff on winning the 2020 Presidential election!

The Biomass Power Association represents U.S. producers of renewable heat and electricity using organic fuels. Our members use forestry and agricultural byproducts, leftovers, wastes and residues as fuel, the vast majority of which would not otherwise be usable. In many cases, the materials used as fuel by biomass power producers would be environmentally detrimental if left unused – adding kindling to forest fires, left on the forest floor to release methane, being open burned for disposal, or piling up in a landfill. Whereas clearing out and disposing of these materials can be a huge cost burden to the federal government, the biomass sector utilizes them at a cost savings to the government.

Our members operate in 21 states across the country, primarily in rural areas where biomass is a linchpin of forestry and agricultural supply chains. The power produced by biomass power is baseload, meaning it runs 24/7, making it an ideal, carbon-beneficial, renewable complement to intermittent power sources like wind and solar.

The biomass power industry, including owners, operators and workers in 21 states, looks forward to working with the Biden Administration to help deliver the goals detailed in your Climate 21 Project, Infrastructure and Clean Energy Plan as well as your plan for Rural America, including:

1. **Invest in Sustainable Agriculture and Conservation:** Biomass power facilities stand ready to partner with the Civilian Climate Corps to take on and productively use hazardous materials cleared out of forests at risk of wildfire. Our sector also utilizes agricultural waste like oat and rice hulls that cannot otherwise be used and may take up valuable landfill space.
2. **Position the U.S. Auto Industry to Win the 21st Century with Technology Invented in America:** Biomass powers the nation's electric vehicle (EV) fleet using fuel recognized by the EPA as 96% less carbon emitting than gasoline.
3. **Achieve a Carbon Pollution-Free Power Sector by 2035:** Bioenergy with carbon capture and sequestration (BECCS) is the only currently available carbon removal technology that can actually reduce the net carbon emissions to the atmosphere. While carbon removal technology is currently available for power generation using fossil fuel, it only removes a percentage of the emissions to the atmosphere. However, biomass CO₂

emissions are net neutral using a lifecycle analysis - and with the addition of carbon capture sequestration there is actually a net CO₂ reduction. Biomass power facilities are eager to adapt carbon capture and utilization to contribute even more to reversing climate change.

4. **Build a Modern Infrastructure:** Biomass is a critical part of any infrastructure plan, as an industry that provides secure, baseload power to millions of Americans and contributes to forest fire reduction. The dispatchable nature of biomass power makes it an ideal complement to intermittent power sources like wind and solar.

Below, we have expanded on the many economic and environmental contributions that biomass brings, and on ways we can work together to achieve the Biden Administration's objectives.

Carbon Reduction from Power Sources: By using renewable materials that have already grown and consumed carbon, biomass power represents a significant carbon savings when compared to even the cleanest fossil fuels. The Obama Administration recognized the considerable benefits of biomass power by including it as a compliance strategy in the Clean Power Plan. The Obama Administration's EPA Acting Assistant Administrator of the Office of Air and Radiation Janet McCabe recognized these benefits in a memorandum about the role of biomass in the Clean Power Plan. In November 2014, she wrote: "Information considered in preparing the second draft of the Framework, including the SAB peer review and stakeholder input, supports the finding that use of waste-derived feedstocks and certain forest-derived industrial byproducts are likely to have minimal or no net atmospheric contributions of biogenic CO₂ emissions, or even reduce such impacts, when compared with an alternate fate of disposal." ^{1 2}

Additionally, there is abundant material available from biogenic sources to be used for energy. In many cases, this material is not only available, it needs to be disposed of to reduce its environmental impact. According to the U.S. Department of Energy's third edition of its Billion Ton Report, published in 2016: "...The United States has the future potential to produce at least one billion dry tons of biomass resources (composed of agricultural, forestry, waste, and algal materials) on an annual basis without adversely affecting the environment. This amount of biomass could be used to produce enough biofuel, biopower, and bioproducts to displace approximately 30% of 2005 U.S. petroleum consumption and would not negatively affect the production of food or other agricultural products." ³

There is a substantial body of scientific evidence that carbon emissions from bioenergy do not introduce new carbon into the existing natural carbon cycle, and do play an important role in climate change mitigation. These findings were reflected in the White House's 2014 National Climate Assessment, in the Clean Power Plan released by the U.S. Department of Environmental

¹ EPA's Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources, Janet McCabe, Nov. 14, 2014, found at <https://archive.epa.gov/epa/sites/production/files/2016-08/documents/biogenic-co2-emissions-memo-111914.pdf>

² <https://www.nrel.gov/research/re-bioenergy.html>

³ <https://www.energy.gov/eere/bioenergy/2016-billion-ton-report>

Protection (EPA) in August 2015, by a peer-reviewed scientific study published in the *Journal of Forestry* in November 2014⁴, and in a study completed in May 2017 by Dr. Madhu Khanna, a University of Illinois Distinguished Professor of Environmental Economics. The Khanna study shows that the carbon profile of bioenergy is 115 percent lower than that of natural gas in one year, and 98 percent lower over a 100-year span. The avoidance of carbon and methane emissions by removing and using materials from the forest that otherwise would decay and produce methane gas results in a significant reduction in greenhouse gas emissions over time.⁵

Biomass power is a baseload, renewable power source that is an ideal replacement for fossil fuel sources. It pairs well with intermittent power sources like wind and solar, supports rural jobs and economies, and puts to use materials that can be dangerous if left unused.

Wildfires & Forest Management Policy: Across the Western United States, forests on federal lands are experiencing a tree mortality crisis. The U.S. Forest Service estimates 149 million dead and dying trees in California alone – millions of acres that require management and thinning treatments to avoid the catastrophic wildfires that have been engulfing the state in recent years. In addition to the danger posed to humans, animals, buildings, residences and recreational areas, massive wildfires represent one of the highest sources of carbon emissions from year to year. This year's wildfire season in California and Oregon has so far resulted in emissions that exceed the states' respective power sector emissions. Oregon's fires have emitted more carbon than its power and transportation emissions combined.

Biomass is a crucial tool for managing forests to reduce the risk of uncontrollable wildfires. By providing an outlet to materials cleared out of forests, biomass power producers ensure those materials don't go to waste and are rather used to generate power and heat to hundreds of thousands in the West. Additionally, using those materials in a biomass facility subjects them to environmental controls which further reduce what comes out the stack. A 2015 study⁶ that compared pile burning with biomass power facility emissions found that using these materials as fuel in a power facility reduced PM2.5, CO, black carbon (BC) and NMOC emissions by 98-99%, with significant reductions of methane and NOx emissions as well.

The biomass industry stands ready to partner with the Biden Administration's Civilian Climate Corps to generate renewable electricity with the materials cleared out of treated forests. Utilizing materials cleared out of forests supports the rural forestry and forest products supply chain in places where jobs are sorely needed. This infrastructure is key to wildfire risk reduction

⁴ Miner, Reid A., et al., Forest Carbon Accounting Considerations in US Bioenergy Policy, 112 *Journal of Forestry* at 591-606 (2014).

⁵ Carbon Intensity of Harvesting Residue-Based Electricity: Case Study of Eversource Energy. By Madhu Khanna, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign and Puneet Dwivedi Warnell School of Forestry and Natural Resources, University of Georgia (May 2017) <http://www.usabioenergy.org/docs/Final%20BPA%20Khanna%20Dwivedi%20Bioenergy%20Carbon%20Study%20May%202017.pdf>

⁶ Springsteen et al. *Forest biomass diversion in the Sierra Nevada: Energy, economics and emissions*, July-September 2015, *California Agriculture* Vol. 69 Number 3.

and forest products innovation. Our association enjoys a long-standing partnership with the U.S. Forest Service; our members have individually established relationships with the U.S. Forest Service and are already implementing forest management measures in California, Arizona and Colorado.

We suggest directing the U.S. Department of Energy and/or the U.S. Forest Service to assess the wood energy sector to identify opportunities for even better utilization of wood waste as well as barriers to growth and how these can be overcome.

The Renewable Fuel Standard (RFS) and Electric Transportation: We urge the Biden Administration to promptly settle two lawsuits now pending in the DC Circuit (RFS Power Coalition v. EPA, filed February 6, 2019). Both of these actions arise from the Trump Administration's failure to recognize and process applications from biomass, biogas and waste-to-energy facilities to generate RINs under the RFS for the electricity they provide to electric vehicles. When Congress passed the RFS2 law in 2007, electricity generated from RFS-qualifying feedstocks was included as part of the program. Despite this statutory mandate and recent affirmations by Congress urging the Trump EPA to act, the EPA has refused to process applications from dozens of biomass, biogas and waste-to-energy facilities that are supplying low-carbon transportation fuel to hundreds of thousands of EVs. Most of these fuels can also be counted under the cellulosic portion of the program – the category lagging furthest behind in meeting the statutory targets set by the RFS2.

To date, the RFS has primarily been a program for fuels derived from the nation's farming and agriculture sectors, while not tapping into the large potential of fuels derived from forestry sources. The U.S. Forest Service is well aware of this and has been actively working to urge better implementation of the program to benefit the nation's forests and enhance forest management capabilities. Enabling biomass, biogas and waste-to-energy facilities to participate in the RFS will have a significant, immediate and positive impact on forests, as well as power facilities and their supply chains. Farmers, loggers, truckers, foresters and municipal governments are a few examples of the beneficiaries of ensuring that the EPA processes electricity applications under the RFS. Many of these plants are in precarious financial positions, and EPA's lack of action has cost our industry millions of dollars per year. The ability to rightfully participate in the RFS, as determined by Congress 13 years ago, would make all the difference.

Carbon & Carbon Capture: The Biden Clean Energy Plan cites the expansion and accessibility of carbon capture technology as a top priority, with lowering costs of retrofits as one way to enable more widespread use. The biomass industry strongly supports this goal. Our members are eager to implement carbon capture and utilization technology, but the cost of doing so remains out of reach for an industry that has faced financial challenges over the past decade. We look forward to working with the Biden Administration to make bioenergy with carbon capture and sequestration (BECCS) deployment – and the negative carbon emissions it would bring – a reality. The Lawrence Livermore National Laboratory included BECCS as one of its

three pillars for California to achieve its ambitious carbon-neutral goal by 2045, estimating an available carbon savings of as many as 84 million tons per year.⁷

Additionally, deciding how to implement laws already on the books like Section 45Q, which established a credit for carbon capture and utilization, can further the Biden Administration's carbon goals. Valuing carbon captured from organic fuel sources like biomass more highly than carbon captured from fossil sources makes good policy sense. The Clean Air Act mandates that carbon from power sources should be counted using a life cycle analysis – meaning that carbon captured from bioenergy would result in true “negative” carbon emissions, unlike carbon captured from geologic sources. Carbon captured using BECCS technology makes a larger impact in reversing climate change, and therefore should be treated as such. This will also help deploy BECCS more widely, resulting in even more significant climate benefits.

Conclusion

We congratulate President-Elect Biden for his impressive victory in the 2020 election, and we look forward to working with the Biden Administration to achieve its climate goals. Please don't hesitate to reach out to Carrie Annand at 202-494-2493 with any questions.

Sincerely,

Carrie Annand
Executive Director

⁷ Baker et al. *Getting to Neutral: Options for negative carbon emissions in California*, January 2020, Lawrence Livermore National Laboratory.