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October 20, 2009

Senator Amy Klobuchar, Chair
Subcommittee on Children's Health
Environment and Public Works Committee
Hart Senate Office Building
Washington, D.C.

Senator Lamar Alexander
Ranking Member
Subcommittee on Children's Health
Environment and Public Works Committee
Dirksen Senate Office Building
Washington, D.C.

Re: Health Effects of Biomass Burning Under S. 1733, "Clean Energy Jobs and American Power Act"

Dear Senators Klobuchar and Alexander:

As a pediatrician, I have long been aware of your efforts and concerns for children's health and preventive measures that benefit children and their families while reducing our Nation's medical care costs.

With Dr. William Blackley of North Carolina, Dr. Ronald Saff of Florida, I write to inform you of the harm to children's health from biomass burning, which is being promoted and subsidized under the Energy and Public Works Committee's Clean Energy Jobs and American Power Act (CEJAPA) as a method of producing electricity in lieu of burning coal.

On October 14, 2009, the Hampden County Medical Society (MA) published formal opposition to the construction of the Russell (MA) 50 MW wood burning biomass plant on the grounds that it presents an unacceptable

public health risk. [A copy of the letter is enclosed]. Similarly, on July 14, 2006, the American Lung Association of Massachusetts stated "serious concerns" about the "significant impact of this project [Russell Biomass wood burning plant] on air quality"[enclosed]. The Florida Medical Association issued Resolution 08-21 urging its state government to adopt policies to minimize the approval of new incinerators such as biomass burners [enclosed]. The Oregon Chapter of the American Lung Association has also come out against biomass combustion [enclosed]. These are only some of the public statements from professionals around the country documenting biomass burning and renewable energy incinerators as a source of a new and growing public health threat.

Biomass burning is dirtier than coal *and* makes climate change worse. As citizens concerned about the public health impacts of air emissions from biomass burning power plants on our communities, we have studied permit applications and other public documents relating to biomass burning power plant proposals in Massachusetts, North Carolina, Georgia, Oregon, Indiana and Florida, and consulted with concerned citizens in several other states about biomass proposals (including Maine, Vermont, Texas, and Arkansas). Our review of current research publications, data from company proposals, environmental impact reviews, and government analyses leads us to conclude that these power plants, promoted as "clean energy", will have a direct negative impact on the health of our Nation's children: both immediately and cumulatively throughout their lifetimes, and for generations to come.

Paradoxically, however, despite the substantial evidence in the public domain of the harm from biomass burning, this method of power production is given preferential treatment and lucrative subsidies in CEJAPA.

At a time when our nation is struggling to meet the challenges of rising health care costs, the U.S. Senate climate change legislation provides federal taxpayer money to subsidize and promote biomass burning to generate energy. The consequence will be the increased incidence and severity of multiple cardiopulmonary diseases, premature birth, developmental disabilities, and cancer. <u>At a time when the Senate is debating health care reform legislation, it would be ironic indeed if that same body also chose to act in a way that harms public health and raises health care costs.</u> Our young children will bear both the financial and personal health legacy of the provisions in CEJAPA that underwrite biomass burning; the consequences for them will last a lifetime.

On July 7, 2009, David Hawkins of the Natural Resources Defense Council testified before the full Senate Environment and Public Works Committee. There, he warned about a "biomass loophole." Indeed, the problem is broader and deeper than the specifics of his testimony suggests.

Here are four factors that ought to be placed front and center in the calculus of considerations regarding biomass.

1. The air pollution and climate change impacts of biomass burning are worse than burning coal.

The simple fact is that the combustion of biomass (wood, trash, construction debris, etc.) is "dirtier" than burning coal: per megawatt hour of power generated, in comparison to coal, burning wood to produce electricity generates 1.5 times as much carbon monoxide (CO, a toxic air pollutant), significantly more CO_2 (the most prevalent greenhouse gas), more NOx, more SO_2, and comparable amounts of particulate matter[1] [see plant data chart]. Biomass burning also emits volatile organic compounds (VOCs) in significant quantities. NOx and VOCs are two ingredients of the ground level ozone that is dangerous to human cardiorespiratory health.

The particulate matter from biomass burning, especially PM 2.5 and nanoparticulate matter, is an air pollutant associated with asthma, heart disease, and cancer, for which no safe level is known. Information on the hazards of particulate pollution is available from EPA at http://www.epa.gov/particulates.

Approximately 150 biomass burning plants are in the permitting pipeline in the United States, made economically attractive by subsidies and tax credits under the 2007 Energy Independence and Security Act of 2007 and the Energy Policy Act of 2005, as well as the 2009 American Recovery and Reinvestment Act.[2] The incentives for biomass burning in CEJAPA as a

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[1] Based on study of permit applications from three approximately 50 MW wood burning biomass plants in Massachusetts: Pioneer Renewable Energy (Greenfield, Environmental Notification Form), Palmer Renewable (Springfield) and Russell Biomass (Russell)(Air Permit Application). See also, Liberty Green Renewables permit application, Indiana, and North Carolina Fibrowatt application. In Massachusetts, the newest and "state of the art" proposed biomass power plant in Greenfield Massachusetts will emit more CO_2, VOC's, and particulate, and nearly as much NOx per MWh of energy produced as the 50 year old Mt Tom coal plant in nearby Holyoke, MA. A coal burning plant in Lynn, MA, one of a group called the "filthy five" by Massachusetts by environmental groups, plans to switch from burning coal to burning construction debris biomass.

[2] Because biomass burning is considered a renewable energy project, the federal government can pay as much as 65% of the capital cost through tax subsidies. Americans pay more for the electricity

means of generating "renewable energy" will only amplify the harmful public health impacts from these power plants if they proliferate.

2. Even though biomass burning is dirtier than coal, biomass carbon dioxide emissions are ignored under CEJAPA.

Carbon dioxide emissions from the combustion of biomass are not included in the total accounting of U.S. emissions, and therefore they are not included under the carbon cap in CEJAPA. Based on a false assumption about carbon neutrality, carbon emissions from biomass combustion are treated as if they do not exist under the EPA's regulatory system and the provisions of CEJAPA: Therefore biomass power plants do not have to buy emission allowances for carbon dioxide.[3] Similar provisions are contained in the Senate's Energy and Natural Resources Committee "American Clean Energy and Leadership Act" and in H.R. 2454, the Waxman-Markey bill passed by the U.S. House in June 2009.

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generated by biomass power because it is considered "renewable." The premium should be paid only for "clean" energy.

[3] Section 700 of CEJAPA exempts biomass burning from the Act's requirements for allowances and from the greenhouse gas emissions cap. CEJAPA, § 700 (13)(A), Definitions (p. 556) defines a covered entity as "Any electricity source". However, § 722 (Prohibition of Excess Emissions), (b)(1) (p. 442) says that biomass is power is not a covered source:
"ELECTRICITY SOURCES.—For a covered entity described in section 700(13)(A), 1 emission allowance for each ton of carbon dioxide equivalent of greenhouse gas that such covered entity emitted in the previous calendar year, **excluding emissions resulting from the combustion of**— (A) petroleum-based or coal-based liquid fuel; (B) natural gas liquid; **(C) renewable biomass or gas derived from renewable biomass**; or (D) petroleum coke. (emphasis supplied)

Biomass emissions are not included in setting the cap limits under CEJAPA (therefore the cap number does not include all U.S. GHG emissions. The CEJAPA cap number is not based on any particular model (EPA did several models to determine the total U.S. emissions, all of which actually greatly exceed the "cap" as presented in SR/OIAF/2009), but it is established through a mechanism described in CEJAPA § 700 (8)(p. 555), which states:

> CAPPED EMISSIONS.—The term 'capped emissions' means greenhouse gases to which section 722 applies, including emissions from the combustion of natural gas, petroleum-based or coal-based liquid fuel, petroleum coke, or natural gas liquid to which section 722(b)(2) or (8) applies.

In sum, the effective cap is the number of allowances allowed (CEJAPA, § 721(e)(1), (p. 432)(Emission allowances), set for 2020 at 4,873,000,000 tons of CO_2 equivalent for the United States. However, since biomass combustion does not have to get allowances (under § 722), it is not included in the §721(e)(1) number. In effect that reduces the reduction of emissions from 2005 levels from 20% to approximately 8%.

The result of the cap setting process in CEJAPA is that 700,000,000 tons of CO_2 emitted in 2020 by biomass burning will be in "excess" of the official cap set by the number of allowances.[4] This means *unregulated biomass carbon dioxide emissions would be an addition of 14.4% "above" the total allowance cap*, or approximately *12.6% of the total emissions in the Nation for the year 2020* under CEJAPA if the "cap targets" are met.

Significantly, the regulatory loophole that allows biomass CO_2 emissions to be ignored makes it impossible for the United States to meet the "cap" targets. Moreover, the existence of the biomass loophole makes investment in biomass plants extremely lucrative because these power plants, unlike their competitors (the coal plants), do not have to bear the cost of buying allowances. In combination with the unmerited additional revenue from renewable energy credits, the bill will create conditions that encourage the construction of power plants that pollute at a level of CO_2 greater than the coal plants the bill seeks to displace. All this is being done under the banner of combating global warming.

3. By subsidizing biomass burning, CEJAPA will harm the public health by causing an increase in air pollution emissions, particularly particulate matter, and ground level ozone that cause asthma in children.

The effect on public health of the biomass loophole is two fold. First, there will be an increase in the overall quantity of U.S. emissions of criteria pollutants because there will be more biomass plants. Second, the resultant exacerbation of climate change impacts from biomass plant emissions will have dire effects on the health of children in this country and throughout the world. The worldwide devastation that will be caused by population displacement and the spread of infectious disease is difficult to quantify or monetize given the extended time period it takes to realize the total effects of rising atmospheric carbon dioxide levels on the planet.

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[4] This figure is calculated by taking the graph at http://www.eia.doe.gov/oiaf/analysispaper/biomass/figure_4.html that shows projected combustion based biomass power generation in 2020 would be 70,000 MW with a 20% RPS. The 50 MW wood burning biomass plant in Greenfield, MA will emit more than 500,000 tons a year of CO2 (see Environmental Notification Form, p. E-2, Massachusetts Environmental Policy Act File No. 14388.) Extrapolating this means that under a 20% RPS mandate, in 2020 combustion based biomass would produce conservatively 700,000,000 tons of CO2 emissions each year [see chart included].

Likewise, even in the United States, the there will be significant negative effects from prolonged exposure to increased levels of particulates and ground level ozone in terms of cancer incidence and increased risk of central nervous system developmental damage (Clean Air for California, ©2004 Environment California Research and Policy Center), and increased risk of premature birth [http://www.epa.gov/oar/particlepollution].

In the realm of respiratory disease, recent findings show that the exposure to higher levels of ozone and particulate matter cause asthma in children (Lancet. 2002 Feb 2;359(9304):386-91). Previous data, on shorter exposures at lower levels, showed that symptoms were aggravated and/or prolonged (JAMA, 2003; 290:1859-1867), but now the evidence shows that such exposure for greater duration at levels already occurring is causative.

In addition, further research has shown that the effects of exposure has not only a "trigger" effect, but also a sustained effect, which compromises cardiorespiratory physiology for days (SOTA 2009, American Lung Assoc, www.lungUSA.org). The impact is greatest with children, and people of all ages with pre-existent chronic disease. In California, the highest incidence of asthma corresponds to the areas with the highest pollution levels [see SOTA 2009]. Nationwide, the American Lung Association estimates that the cost of treating asthma in children is more than $21 billion dollars. In Atlanta, during the 1996 Olympics when the air pollution was kept lower than normal primarily through transportation restrictions, treatments of asthma in the emergency room dropped 55% and the number of office visits for asthma control decreased 61% [JAMA 2001; 285:897-905].

With climate change, heat waves will also increase dramatically in the next decade according to EPA projections, doubling in Los Angeles and quadrupling in Chicago. Carbon dioxide and criteria pollutant emissions from biomass burning will add to total U.S. greenhouse gas emissions and therefore contribute to the heat waves. In the decade from 1992-2001, deaths from heat waves exceeded the total from hurricanes, tornados, and floods combined. The 1995 Chicago heat wave resulted in more than 600 heat related deaths over 5 days (Annals of Internal Medicine, Vol. 129 Issue 4). The California heat wave in 2005 was relatively mild, but resulted in health care costs exceeding $132,000,000 (Pacific Ecoinformatics, August 26, 2008).

In addition, wildfires have become such a prevalent and severe problem that the American Academy of Pediatrics has separate pamphlets dealing with the acute and chronic effects on children.

4. The Subcommittee on Children's Health should take measures to limit public subsidies for biomass burning under CEJAPA in order to protect children's health.

Rather than giving biomass combustion preferential treatment under CEJAPA, especially in relation to coal, legislation to curtail biomass combustion would have a significant impact on the climate as well as reduce the incidence of air pollution related health care costs in children and the population at large.

We urge the Subcommittee on Children's Health to carefully consider amendments to CEJAPA to close the biomass loophole for the sake of our children's health and that of the planet. This does *not* require major re-drafting of the bill. Instead, language that simply closes the "biomass loophole" by making the power producers accountable for producing "clean" energy in order to obtain renewable energy credits will protect our children's health from the lifelong negative impacts of the toxic air emissions from biomass burning. The enclosed amendment provides language that would effectively accomplish this end.

Closing the biomass loophole by counting CO_2 emissions from biomass combustion, and making the producers accountable for those emissions, will also help ensure that CEJAPA does not make climate change worse and is substantiated by the science. We look forward to discussing our proposal with you.

Thank you for the consideration.

Very truly yours,

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Board Certified Pediatrician
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Cosigners:

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Cancer Action Network New York, Donald L. Hassig, Director

Massachusetts Breast Cancer Coalition

Floridians Against Incinerators in Disguise

HOPE [Help Our Polluted Environment] in Taylor County, Florida

Environmental Alliance of North Florida

Florida League of Conservation Voters

Energy Justice Network

Enclosures:

Hampden County Medical Society letter

American Lung Association Massachusetts letter

Florida Medical Association Resolution

Plant emissions comparison data

EIA projections of biomass electrical generation capacity

Legislation Proposal—Amendment to close biomass loophole

Cc: Senator Evan Bayh
Senator Sherrod Brown
Senator Maria Cantwell
Senator Thomas Carper
Senator Robert Casey
Senator Kent Conrad
Senator Byron Dorgan

Senator Richard Durbin
Senator John Kerry
Senator Herbert Kohl
Senator Frank Lautenberg
Senator Patrick Leahy
Senator Blanch Lincoln
Senator Claire McCaskill
Senator Jeff Merkley
Senator Barbara Mikulsky
Senator Mark Pryor
Senator Jay Rockefeller
Senator Jeanne Shaheen
Senator Arlen Specter
Senator Deborah Stabenow
Senator Tom Udall
Senator Mark Udall
Senator James Webb
Senator Sheldon Whitehouse