BIOMASS ACCOUNTABILITY PROJECT

Biomass Electricity:
Clean Energy Subsidies for a Dirty Industry

The case for ending taxpayer and ratepayer subsidies that harm public health, environment, climate, and forests.

Produced by the Biomass Accountability Project

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June 2011

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Executive Summary

American taxpayers and ratepayers are subsidizing a form of "renewable" energy—biomass electricity- that causes short and long-term harm to the public health and the environment. There are 234 of these so-called "clean and green" biomass electricity projects proposed for the U.S. The scale of these plants ranges from 25 to more than 100 megawatts (MW), often dwarfing the 255 existing biomass power facilities, which generally range from 2 to 5 MW capacity. This polluting form of electricity production currently accounts for over 50% of the so-called "renewable" energy in the U.S. and 3% of total power generation. Biomass facilities burn wood from forests and a range of other materials defined as "biomass." It is estimated that the U.S. could meet our national energy needs for only 1 year if every tree in this country were to be burned for biomass energy.[1]

Currently, two major federal subsidy programs benefit the biomass electricity industry at the expense of public health, clean air, clean water, and forests. Eliminating federal taxpayer subsidies for biomass commercial biomass electricity can result in more than $10 billion saved over the next three years, and a minimum of $3 to $5 billion every year thereafter.

First, the American Recovery and Reinvestment Act (ARRA) of 2009 is providing cash grants for up to thirty percent of the construction cost of biomass power facilities. To date, the U.S. Treasury Department has been distributed $102,532,534 to nine corporations to build biomass power facilities, three of which are in disadvantaged communities. Despite significant environmental impacts, there was no review under National Environmental Policy Act (NEPA). If the additional 234 proposed facilities are built, it will cost taxpayers at least $7,500,000,000 by December 31, 2013 (based on ARRA funding for thirty percent of the capital cost of construction of 234 commercial scale power generation facilities).

Second, under the U.S. Department of Agriculture's "Biomass Crop Assistance Program" (BCAP), $461 million is allocated to biomass projects. BCAP funding in 2009 and 2010 totaled $250 million, distributed by USDA without complying with NEPA. In May, 2011, the U.S. House of Representatives Appropriations Committee voted to terminate funding, casting doubt over the future of this program that funds production of energy crops to burn for electricity, but the program has defenders in the Senate. Other biomass subsidies include federal and state investment and production tax credits, and loan guarantees from the U.S. Department of Energy. As of April 2011, four biomass electricity projects have passed initial qualification for DOE loan guarantees.

State renewable portfolio standards provide a market-based incentive program that greatly distorts the market, promoting the use of biomass electricity without the price reflecting the total overall economic, environmental, and health costs. Qualifying facilities are authorized to sell electricity and "renewable energy credits" (RECs), with each qualifying facility being awarded one REC per MWh of power produced each year. The sale of RECs will generate at least $2 billion per year in income for biomass power producers. (Based on the sale of one REC at $10 and assuming that the U.S. will generate 20 GW of power from biomass combustion.

[1] Harpers Index January 2006: http://www.harpers.org/archive/2006/01/0080867

Current market value in the Regional Greenhouse Gas Initiative (RGGI) for the Northeast states exceeds $20, so the value would be greater than $4 billion /year.)

The biomass burning industry has fostered the myth of being "clean and green" when, in reality, it is quite the opposite: electricity generated by biomass combustion, per megawatt hour of power produced, emits more climate changing greenhouse gases, including carbon dioxide and NOx, from the smokestack than coal, and pollutes the air with sulfur dioxides, carbon monoxide, particulates, dioxin, mercury and more.

The pollution from biomass power facilities has been termed a danger to public health by major organizations such as the American Heart Association and the American Lung Association. Biomass combustion creates particulate emissions that,

> *"increase the risk of premature death, asthma, chronic bronchitis, and heart disease... nitrogen oxides and volatile organic compounds, which are known to increase lung disease and mortality; sulfur dioxides which also contribute to respiratory disease... arsenic which can increase the risk of cancer... mercury which can increase the risk of brain and kidney disease and affect the developing fetus...and dioxins which may increase the risk of cancer, heart disease, diabetes mellitus, developmental delays in children, neurotoxicity, and thyroid disease".*[2]

These health impacts have an economic cost. Increased illnesses and mortality in Americans will result in decreases in economic activity, lost days at work, increased hospitalizations, and rising burdens upon public health programs such as Medicare and Medicaid. These costs will be incurred every year, potentially totaling billions of dollars annually. The costs will be borne by taxpayers and already-strained government programs, and are external to the corporations benefitting from the subsidies.

In response to the negative impacts of biomass electricity projects, there is a rapidly expanding citizen-led movement to prevent further investment of taxpayer and ratepayer subsidies for biomass electricity.[3]

The industry defends the subsidies on the grounds of job creation, In reality, the projects are poor job creation vehicles since the investment required to create each job typically exceeds $3,000,000 per permanent full time job.

In summary: Biomass combustion is neither clean, nor "green." However, it is incredibly expensive. Biomass combustion requires billions of dollars of taxpayer money to be economically viable even as it remains a major health hazard that will result in billions of dollars of increased health care expenditures. In biomass combustion, we find an unique trifecta: fiscal profligacy, environmental irresponsibility, and profound health care hazards.

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[2] North Carolina Academy of Physicians letter, April 19th 2010
http://incineratorfreemecklenburg.files.wordpress.com/2011/03/ncafp-biomass-letter.pdf

[3] Polsgrove, Carol. "While communities fight biomass plants, Congress pays to build them." Huffington Post. 20 Dec., 2010.
http://www.huffingtonpost.com/carol-polsgrove/while-communities-fight-b_b_798378.html

I. Legal Context and Overview of Impacts

A. Background

This report focuses on projects that combust "biomass" to make so-called "green" electricity, usually for sale to the electric grid where it is used to meet quotas for state "renewable portfolio standards" (RPS). This report is a summary of financial incentives for biomass electricity, a survey of proposed and expanding projects, and an overview of the controversy surrounding the projects. This report focuses on electricity generating facilities that are over 14 megawatts (MW).[4] According to industry reports, there are 234 wood-burning electricity and 162 wood biomass pellet projects proposed in the U.S. as of October, 2010.[5] The facilities are listed in Appendix I, organized by state.[6] Biomass power accounts for over 50% of the so-called "renewable" energy in the U.S. and just over 5% of total power generation.[7] Between 2009 and early 2011, approximately twenty biomass electricity projects were withdrawn, often after being faced with community opposition.[8] With more than 220 projects still in the permitting pipeline, however, the toll on local communities and the financial implications for America's budget is staggering.[9]

Electricity produced from biomass combustion is the prime example that "renewable" is not synonymous with "clean." A fundamental premise underlying subsidies for renewable energy is that such energy production is "cleaner" than what it replaces. Such renewable energy is commonly assumed to have none of the negative air, water, health and ecosystem impacts of the fossil fuels it is promoted to replace. Biomass combustion is, and has been for years, championed by industry as "assumed to be clean", and "assumed to be carbon neutral." Recent, unimpeachable data, however, shows neither assumption to be true. Nevertheless, federal and state laws, programs, and policies that provide taxpayer and ratepayer subsidies for biomass electricity and the use of this electricity to meet state RPS quotas based primarily on the false assumptions that this power is "clean and green" and carbon neutral remain in place.

Increasing community opposition reflects the need to change federal and state laws and policies to end taxpayer and ratepayer subsidies and incentives for electricity generated by biomass combustion. This includes biomass projects that use "staged" combustion (often referred to as "gasification"), burning biomass and then converting it into a synthetic gas, a gas product, or char.

Recent events in Massachusetts provide a model for limiting the negative impacts of biomass electricity. The state has taken a series of steps to ensure that its RPS is consistent with its

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[4] There are smaller biomass burning facilities and "combined heat and power" projects not covered by this project. The production and burning of "biofuels" such as cellulosic ethanol is beyond the scope of this report. For information on biofuels see http://ww.biofuelwatch.org.uk

[5] "Forisk Bioenergy Research." Forisk Consulting. 30 Jan. 2011. http://www.forisk.com/Forisk-Bioenergy-Research-v-42.html

[6] Sources include: Energy Justice Network mapping project: http://www.energyjustice.net/map/nationalmap which is based on information from the U.S. Department of Energy and the Combined Heat and Power Installation Database: http://www.eea-inc.com/chpdata; media reports; first-hand citizen testimonials, and Biomass Busters newsletter: http://www.stopspewingcarbon.com

[7] Monthly Energy Review. U.S. Energy Information Administration. 29 Dec., 2010.

[8] Appendix 1, list of withdrawn or stalled projects.

[9] http://www.nobiomassburning.org/BAP/Citizen_Stories.html

greenhouse gas reduction targets and forest protection laws. In May, 2011 the state released final regulations imposing conditions that commercial biomass electricity projects must meet in order to qualify as "renewable energy" under the RPS.[10] Earlier, in December 2009, the state imposed a moratorium on issuing new statements of qualification for biomass under the RPS while it commissioned the Manomet Study on carbon policy.[11] Limiting the ability of commercial biomass electricity projects to qualify for renewable energy credits under the RPS is only one step in addressing the issue, however, and in large part because of other lucrative public subsidies, these projects are still moving ahead.

B. Legal Definitions of "Biomass"

The term "biomass" has legal definitions that differ among state and federal laws. Some definitions of "biomass" include materials that are defined as "solid waste", a term usually including municipal solid waste. Some states even allow burning tires to qualify as "biomass" under the renewable portfolio standard.[12] A Congressional Research Service report in February, 2010 reviews biomass definitions in federal legislation.[13]

The We Energies/Domtar biomass electricity project in Wisconsin is a particularly illustrative example of how the word "biomass" is exploited by industry, with the complicity of regulators and others, to allow incineration for electricity that would otherwise be prohibited, or at least not promoted as "clean and green." In April 2011, Wisconsin issued an air pollution permit allowing *We Energies* to burn solid waste, including paper mill sludge and construction and demolition debris for electricity that will qualify to meet the state RPS. The materials allowed to be burned under the permit are classified as solid waste under Wisconsin air pollution and solid waste laws.[14] Yet, the project was able to avoid solid waste incinerator facility siting laws by calling itself a renewable energy "biomass" project. Across the country, biomass facilities often avoid siting laws that would require comprehensive environmental reviews and more community input.

The absence of consistent and accurate definitions for biomass also allows the industry to take advantage of loopholes and employ "green" marketing strategies often supported by state regulators, since "biomass" is commonly thought of as wood. For example, *Taylor Biomass* in New York, which has been approved for a $100 million U.S. Department of Energy loan guarantee[15], plans to burn garbage, construction and demolition debris and other materials for "renewable energy" and markets its project as clean and green.[16]

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[10] Massachusetts Department of Energy Resources files biomass regulations. http://www.mass.gov/?pageID=eoeeaterminal&L=5&L0=Home&L1=Grants+%26+Technical+Assistance&L2=Guidance+%26+Technical+Assistance&L3=Agencies+and+Divisions&L4=Department+of+Energy+Resources+(DOER)&sid=Eoeea&b=terminalcontent&f=doer_renewables_biomass_policy-reg-process&csid=Eoeea As of the date of this report, the regulations are not finalized, and the May 2011 proposed regulations have been subject to criticism from at least fifteen state wide and two national groups calling for them to be strengthened.

[11] http://www.nobiomassburning.org/BAP/Citizen_Victories.html

[12] http://www.energyjustice.net/tires/burners

[13] Biomass: Comparison of Definitions in Legislation: February 2, 2010.

[14] Wis. Stat. § 285.01(40) and Wis. Stat. § 289.01(33) and We Energies DNR Air Pollution Control Construction Permit No. 10-SSD-058. www.nobiomass.org; www.pfpi.net

[15] http://www.recordonline.com/apps/pbcs.dll/article?AID=/20110413/BIZ/104130372/-1/NEWS

[16] Taylor Biomass Energy. 28, Jan. 2011. http://www.taylorbiomassenergy.com

The examples of *We Energies* and *Taylor Biomass* are particularly concerning because the combustion of paper mill sludge and construction and demolition debris has the potential to emit more hazardous air pollutants than burning so-called "green wood." There are also problems with using construction and demolition debris as fuel because at least one study of industry methods for "sorting" debris concludes it is impossible to exclude unwanted materials and to create a "clean" fuel stream for biomass electricity.[17]

C. Public Health and Environmental Impacts

1. Introduction

The adverse impacts on air, water, and forest ecosystems from burning "biomass" for electricity are well documented. Current air pollution laws have not been updated to reflect current medical data about the dangers of such pollutants as particulate matter 2.5, nanoparticulates, mercury, and dioxin. This is largely due to industry backlash against efforts to strengthen the Clean Air Act to protect the public health. The facts about public health, air, water, climate and forestry impacts stand in stark contrast to industry claims that biomass burning for electricity is "green" and "emissions free" electricity.

In the permitting processes, biomass electricity projects exploit various loopholes in state and federal laws due to their status as non-fossil fuel combustion power, even though their impacts are the same or worse than burning coal. The Clean Air Act and Clean Water Act permitting procedures are not adequately protective of human or overall environmental well being since the rules have simply not caught up with the science. As an example, for small particulate matter, peer reviewed, published science results show that EPA standards are not protective.[18] Similarly, EPA has delayed for 20 years the implementation of dioxin standards.[19] Legally, most biomass electricity projects are considered solid waste incinerators under state law, but frequently solid waste siting laws are ignored and the biomass combustion facilities treated as something other than what they are.

The cumulative health and environmental impacts of burning biomass for electricity have not been addressed by state or federal regulators. There have been no cumulative impact reviews under the National Environmental Policy Act (NEPA) or state counterparts. Yet, multiple projects in close proximity to each other are moving ahead throughout the U.S. For example, three proposed facilities in Massachusetts will be located within 50 miles of each other, [20] and four facilities have been proposed for the Olympic Peninsula in Washington state. Yet the cumulative environmental impacts have not been studied or evaluated. The national implications on air pollution and greenhouse gas emissions have also, to date, avoided scrutiny.

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[17] http://www.pfpi.net/wp-content/uploads/2011/03/MEEA-commnents-on-Palmer-BUD-11-18-09.pdf; http://www.pfpi.net/wp-content/uploads/2011/03/DPH_Comments_PRE_BUD_NOV-18_2009.pdf

[18] http://www.nobiomassburning.org/BAP/Air_Pollution_files/Levy%20comments%20ALA%20press%20event%204-11.pdf

[19] On April 11, 2011, members of Congress wrote to U.S. EPA asking for issuance of dioxin regulations following 20 year delay. http://www.nobiomassburning.org/BAP/Public_Health.html

[20] For Massachusetts, see http://www.massenvironmentalenergy.org/harvestarea.html

2. Public Health

In the past two years, national, regional, and local medical organizations and individual physicians have voiced opposition to the air pollution from biomass combustion power plants.[21] The Massachusetts Medical Society has stated:

> *Biomass power plants pose an unacceptable risk to the public's health by increasing air pollution...The burning of biomass releases small particles into the air creating particulate air pollution. Epidemiological studies have demonstrated an association between elevated particulate air pollution levels and adverse health effects and death. Particulate air pollution is associated with increased cardiopulmonary symptoms, asthma attacks, days lost from work due to respiratory disease, emergency room visits, hospitalization rates, and mortality.*
>
> *Biomass combustion also releases nitrogen oxides, which help create ozone, a highly reactive oxidant gas. Ozone reacts in the pulmonary airways causing symptoms of chest pain, shortness of breath, cough, wheeze, increased susceptibility to infection, declines in lung function, increases in asthma attacks, increases in asthma medication use, increased rates of emergency room visits for respiratory disease.*[22]

And the American Heart Association has stated:

> *"Although the dangers to one individual at any single time point may be small, the public health burden derived from this ubiquitous risk is enormous. Short-term increases in $PM_{2.5}$ levels lead to the early mortality of tens of thousands of individuals per year in the United States alone."* [23]

In March 2011, U.S.EPA estimated that the public health and environmental benefits of the 1990 Clean Air Act amendments amounted to over $1 trillion in 2010, versus a cost of $53 billion. By 2020 the public health and environmental benefits increase to $2 trillion, versus a cost of $65 billion. That is every dollar spent cleaning up or preventing air pollution results in $30 in health benefits. "*These staggering benefits are almost entirely related to the health benefits of reducing P.M. 2.5 and ozone concentrations*" according to a public health expert. [24] Thus, cleaner air is good for the economy. Building and operating hundreds of new biomass power plants will drive up health care costs and negatively impact the economy over the next several decades.

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[21] "Biomass incineration has 'unacceptable health risks' and drives up health care costs." http://www.energyjustice.net/files/biomass/medicalstatements.pdf See also http://www.pfpi.net/air-pollution-2

[22] MMS Testimony In Support of House No. 4458, "An Act to Limit Carbon Dioxide Emissions from Renewable and Alternative Energy Sources." 25 Feb., 2010 http://www.massmed.org/

[23] *http://circ.ahajournals.org/cgi/content/full/109/21/2655* p. 116.

[24] http://www.nobiomassburning.org/BAP/Air_Pollution_files/Levy%20comments%20ALA%20press%20event%204-11.pdf Emphasis supplied.

In 2011, U.S EPA is finalizing air pollution rules for commercial and industrial "boilers" such as those that burn biomass for electricity. [25] There is the potential for a significant weakening of these rules, as a result of industry opposition, which will have negative long term impacts on public health and the economy.

3. Air Pollution: Criteria and Hazardous Air Pollutants

Smokestack and fugitive emissions from biomass combustion power facilities include particulates, SO2, NOx, carbon monoxide, hydrochloric acid (HCl), volatile organic chemicals, lead, a number of hazardous air pollutants including dioxins, heavy metals, and greenhouse gases. Many proposed facilities appear to be deliberately sized as "synthetic minor" sources of air pollution, allowing the facilities to avoid the most protective air pollution controls required by the Clean Air Act.[26] Additionally, fugitive emissions generated in transporting biomass escape regulation under the Clean Air Act, even though such emissions of particulates and NOx may be of a magnitude similar to the emissions of the plant itself, while all "fugitive emissions" are regulated for fossil fuel power facilities.

In one of the largest air pollution fines in California state history, two biomass facilities (Ampersand Chowchilla and Merced Power) were fined $835,000[27] in February 2011 to resolve alleged violations of the Clean Air Act and other pollution regulations.

4. Air Pollution: Greenhouse Gases

The climate change impacts of greenhouse gases from biomass have been documented in various reports and will not be discussed here. The "Biomass Sustainability and Carbon Policy Study" by the Manomet Center for Conservation Sciences was commissioned by the Commonwealth of Massachusetts. Issued in June, 2010, the Report establishes that in the best case, carbon dioxide emitted by biomass combustion will not be reabsorbed for 40 years.

Carbon dioxide, the most prevalent greenhouse gas, is emitted by burning biomass. Carbon emissions from current biomass combustion power facilities are significant. Calculations derived from the U.S. Department of Energy's Energy Information Administration data on fuel consumption show that in 2009 there were 87 million tons of carbon dioxide emitted by biomass burning power facilities. This is as much as the total power sector carbon emissions from eleven states.[28]

A typical 100 MW wood burning facility emits 1.2 million tons per year of carbon dioxide from the combustion process alone—more, per MWh of power produced, than burning coal.[29] The following specific examples from recent biomass project air pollution permits reflect the false

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[25] EPA's rules for industrial and commercial boilers and process heaters are found here: http://www.epa.gov/ttn/atw/boiler/boilerpg.html; See also http://www.pfpi.net/air-pollution-2

[26] See e.g. Clean Air Act construction permits issued for Palmer Renewable Energy, Springfield, MA; Wiregrass, LLC, Valdosta, GA; Port Townsend Paper Company, Port Townsend, WA; Northwest Florida Renewable Energy Center, Port St. Joe, FL.

[27] http://www.renewableinsights.com/2011/02/california-biomass-plants-fined-835000-decree-cites-failure-to-comply-with-emissions-standards-and-monitoring-requirements/

[28] www.pfpi.net

[29] American Renewables, LLC, Permit Application, Gainesville Renewable Energy Center, Appendix A, Table A-1, Annual Potential Emissions Rate Summary. http://www.dep.state.fl.us/Air/emission/bioenergy/gainesville/mEmissionRates.pdf

assumption that the combustion process is "carbon neutral" regardless of the level of stack emissions, and clearly show that the generation of biomass electricity is ***not*** "clean and green."

> ***Example:*** In 2010, Florida issued an air pollution permit for the 100 MW Gainesville Renewable Energy Center (GREC) biomass burning electricity project which is under construction as of the date of this report. In 2007, the adjacent coal plant installed new pollution controls. Per unit of power produced, a comparison of relevant emissions between the two plants shows the biomass combustion plant will emit, per megawatt hour of power produced:[30]
>
> - *67% more carbon dioxide*
> - *367% more particulate matter*
> - *62% more NOx*
>
> ***Example:*** In April 2011, Florida issued an air pollution permit for a biomass electricity project in Port St. Joe that will emit 3,325 pounds of carbon dioxide per megawatt hour while the nearby Crystal River Coal Plant emits 2,197 pounds per megawatt hour and the Long Leaf Coal plant 1,315 pounds per megawatt hour.
>
> ***Example:*** In March, 2011, Wisconsin permitted the *We Energies* biomass project setting a greenhouse gas emissions limit of 3,050 pounds of carbon dioxide per MWh of gross output, averaged over any consecutive 12-month period, for Boiler 01, which will combust biomass, including solid waste, and natural gas. The nearby Weston Unit 4, a boiler using supercritical pulverized coal, emits 1,853 pounds of carbon dioxide per megawatt hour.

The Clean Air Act requires regulation of greenhouse gas emissions, but U.S. EPA has proposed regulations that treat biomass combustion carbon dioxide emissions differently from other sources of combustion, and EPA has announced an intent to exempt biomass energy from the Clean Air Act greenhouse gas regulation for three years.[31] EPA has not disclosed any credible science to support this announcement.

Biomass combustion proponents claim that carbon dioxide emissions from burning biomass are "biogenic" and therefore different from the carbon dioxide emissions from fossil fuels or other stationary sources. The simple fact, however, is that "[t]he combustion of fuel made from biomass is a physical chemical process; it has no bio-chemical or biological foundation,[32] that justifies a differential treatment. Hence, the term "biogenic" is largely irrelevant. So-called biogenic carbon is just as harmful to the environment as carbon generated by the combustion of fossil fuel.[33] Moreover, though not greenhouse gases, particulates, especially those in the

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[30] http://www.pfpi.net/carbon-emissions
[31] 76 Fed. Reg. 15249 (March 21, 2011)
[32] "Smoke and Mirrors: A Report on Biomass, Bio-energy and Global Warming," Blue Ridge Environmental Defense League, 2011, www.bredl.org, p. 32.
[33] For an common sense explanation of the fact that "CO2 is CO2" see http://www.nobiomassburning.org/BAP/Climate_Change_files/CBD%20Biomass%20Call%20for%20Information%20Comments.pdf

nano and ultrafine range, which come from carbon sources, are extremely harmful to human health regardless of the source.

The decades-old "assumption" that burning biomass is "carbon neutral" and therefore can help curb climate change has skewed international, federal and state laws and policies. The result is that biomass combustion for electricity has an unfair economic and regulatory advantage over fossil fuels, even though its climate, health and environmental impacts are at least equal, if not worse than burning fossil fuels. The "loophole" in carbon accounting which is incorporated in current laws and policies (biomass facilities claim to have no carbon emissions) allows biomass electricity to claim renewable energy status while producing more carbon dioxide than coal plants of the same capacity. Multiple scientists and policy makers have exposed the "biomass loophole."[34]

Methane, another more potent greenhouse gas, is emitted by decaying wood chip piles at biomass facilities.[35]The typical 50 MW power facility stores on site a wood chip pile forty feet high and covering four football fields (a 12 to 14 day supply.) Federal and state air pollution programs fail to address methane emissions from wood chip pile storage.

Regulatory and policy changes need to be implemented promptly to undo the egregious error that qualifies biomass as "renewable" and hence "clean and green."

5. Water Consumption and Pollution

As with fossil fuel and nuclear power plants, biomass combustion requires significant consumptive use of water and evaporates about 85% of the total volume of cooling water. Cooling water is withdrawn from fresh water supplies and/or from sewage treatment facilities.[36] Using sewer water for cooling is problematic when evaporation occurs. Recent scientific studies have shown that secondary sewage effluent is a highly contaminated solution containing numerous classes of discarded and excreted biologically active chemicals such as active pharmaceutical ingredients and personal care products (PPCPs), endocrine disrupting compounds (EDCs), mutagenic cytotoxins and others.[37] Using sewer water for cooling biomass power facilities will result in release of some of these compounds into the air, and potentially concentrate others in the wastewater discharge.

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[34] Extensive information on the carbon neutrality issue has been compiled by the Partnership for Policy Integrity and can be found at www.pfpi.net See also, Searchinger, Timothy D. et al. "Fixing a critical climate accounting error." *Science*, 23 Oct., 2009, http://www.energyjustice.net/files/biomass/searchinger.pdf "Smoke and Mirrors, Section 2.1," Debunking Carbon Neutrality, http://www.bredl.org/pdf3/biomass_report-smoke_andmirrors.pdf

[35] According to the Partnership for Policy Integrity, "Notably, biomass proponents never mention something that is very likely to be a source of methane emissions: the football field-sized, 30 – 70 foot tall, wet, steaming, and poorly aerated piles of chipped wood fuel at many biomass plants. (One study found temperatures in a wood chip pile rose to 230F less than two months after pile completion; temperatures above 180F are considered to produce a high probability of spontaneous combustion. Off-gassing from relatively dry wood fuels can produce, in addition to CO2, carbon monoxide, methane, butane, ethylene, and other toxic gases. The buildup of gases in the holds of ships transporting wood pellets has caused accidents and fatalities. Spontaneous combustion in wood chip piles is not uncommon.)" http://www.pfpi.net/carbon-emissions

[36] Facilities proposing to take water from sewage treatment facilities include the Pioneer Renewable Energy (PRE) biomass incinerator in Greenfield, MA. "The Case Against the Use of Sewer Water For Wet Cooling http://www.greenfieldbiomass.info/uploads/Greenfield_Effluent_as_Coolant.pdf see also http://www.greenfieldbiomass.info/uploads/Water_Impacts.pdf

[37] http://www.nobiomassburning.org/BAP/Water_Pollution_files/01-CCFC-The%20Greenfield%20sewage%20overview-final.pdf

The *Russell Biomass, LLC*, a 50 MW project in Massachusetts is typical for its water consumption. The project seeks to withdraw an average of 885,000 gallons per day from the Westfield River, nationally designated as "Wild and Scenic" and the site of a $60 million salmon restoration project by the federal government.[38] This facility will evaporate 85% of the water withdrawn from the river, thus reducing total river flow. Air cooling is also an option, but is more expensive and, in the case of Russell Biomass, state regulators have allowed water cooling based on the company's claims that air cooling is cost prohibitive. Expert testimony in the water appeal proceedings shows that the project will make one billion in profits for the thirty year operating life of the plant contradicting the claim that air cooling is cost prohibitive.

Biomass power facilities need to discharge boiler blowdown and cooling water, like other combustion power facilities. In some cases these projects require water pollution discharge permits – another fact calling into question industry claims that this power source is "clean and green."

6. Forest Impacts

The forest and ecosystem impacts of extracting millions of tons of wood every year to burn for electricity are documented in various reports.[39] In assessing forest ecosystem health, it is important to take into account not only the slow growth of tree species viable for commercial timber production, but also the species composition, soil fertility, watersheds, and fish and wildlife habitat. Moreover, and of special importance in determining "sustainability" and carbon balance, since new wood is less carbon dense than old wood, proper accounting would measure the actual carbon flux, not the volume by weight of the wood consumed in biomass plants.

Some current biomass proposals plan to burn non-native "bioenergy crops" such as *arundo donax*, a rapidly growing non-native reed, and *miscanthus giganteus*.[40] Planting and harvesting the quantity of these crops needed to fuel a biomass facility for decades poses threats to ecosystems and water supplies in part due to significant changes in land use.

7. Ash Production and Disposal

Biomass combustion power facilities generate large quantities of ash, similar to a solid waste incinerator or coal burning power plant. The typical 50 MW biomass combustion electricity project generates about 29,000 tons of ash per year.[41] This ash is hauled off site for disposal. Disposal methods vary from land application on farms to landfilling. Federal, state and local regulation is inconsistent, irregular or nonexistent.

Biomass ash has varying levels of toxic metals depending on the fuel source and the location where the fuel was grown. The primary concerns are elevated levels of cadmium, mercury, and

[38] http://www.nobiomassburning.org/BAP/Water_Pollution.html
[39] See, e.g., www.pfpi.net "Clearcut Disaster: Carbon Loophole Threatens U.S. Forests." Environmental Working Group. June 2010, http://static.ewg.org/pdf/EWG-clearcut-disaster.pdf; "Forest Not Fuel," http://www.nrdc.org/energy/forestsnotfuel/
[40] See, Northwest Florida Renewable Energy Center, LLC, permit granted April 2011 by Florida DEP. www.gulfbiomassincinerator.org
[41] We Energies Permit Application for Rothschild, WI, p 28

lead. Mercury in the ash can be at a level up to forty times the concentration in the fuel source.[42]

Project developers often state the ash will be used as a fertilizer, but the concentration of heavy metals and other chemicals in the ash raises questions about this disposal method. One report states, "Wood ashes can thus contain very high heavy metal concentrations. Spreading wood ashes in a forest is a major anthropogenic interference with the natural biogeochemical cycles. As with the use of sewage sludge in agriculture, the use of wood ashes in forests clearly needs regulation."[43] Some reports also indicate ash from burning wood contains radioactive materials.[44]

D. Environmental Justice Impacts

The siting of biomass combustion power facilities raises environmental justice concerns around the United States. As is common with all large infrastructure projects, biomass facilities are disproportionately sited near communities of color, tribal communities and low-income communities. These communities bear the bulk of the environmental and health impacts from the resulting pollution, as well as economic impacts associated with these facilities.

For example, in the state of Georgia, 7 of the 12 operating biomass facilities are located in counties whose African American population (58.3%) exceeds the percentage of African Americans in the state (30.2%). Additionally, 3 of the 4 wood biomass incinerators under construction are in majority black counties and, 3 of the 5 proposed plants are located in counties where the percentage of African Americans exceeds the state average.[45] In Georgia, asthma deaths among African American males are three times greater than among Caucasian males (4.3% to 1.4%), and deaths among African American females are 2.2 times greater (4% to 1.8%) than in Caucasian females. African American children are five times more likely to die from asthma than white children.[46]

In their opposition to a biomass and sludge facility for Valdosta County, Georgia, the Valdosta-Lowndes Chapter of the NAACP wrote to Congress and President Obama - stating that siting a biomass facility in that community is a "clear cut example of environmental racism."[47]

Residents of Lithonia, Georgia recently forced a biomass gasification company, Green Energy Partners, LLC - to move their proposal out of the 80% African American community. They are now helping their rural neighbors of DeKalb County to oppose their further permitting and

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[42] http://www.flcv.com/IncinAsh.html
[43] http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V78-4RTCV65-1&_user=10&_coverDate=04%2F15%2F2008&_rdoc=1&_fmt=high&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=1438360279&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=dae9addac791815a213bc6e548dd5cd1
[44] http://www.stopspewingcarbon.com/images/content/biomass%20ash%20is%20radioactive.pdf
[45] Dismantling Energy Apartheid in the U.S. - Robert D. Bullard, February 9, 2011: http://dissidentvoice.org/2011/02/dismantling-energy-apartheid-in-the-united-states/
[46] http://www.valdostanaacp.com/
[47] http://www.nobiomassburning.org/BAP/Civil_Rights.html

construction, and examining political action and civil rights litigation to stop the $60 million dollar project.[48]

The first biomass energy facility to be permitted in Texas, the Aspen Power Plant, is being sited in the mostly black and poor community of Lufkin. According to Robert D. Bullard, Director of the Environmental Justice Resource Center at Clark Atlanta University: "The plant is being built on Lufkin's north side which has a long history as a "dumping ground" for polluting facilities. More than 77.4 percent of the residents who live within a one-mile radius of the biomass plant are African Americans.....These findings are consistent with a 2005 Associated Press study showing that African Americans are 79% more likely than whites to live in neighborhoods that are suspected of posing the greatest health danger."[49]

The biomass project proposed by *Rentech, Inc.*, in Port St. Joe, Florida has prompted two notice of intent to sue letters to the state's governor and environmental secretary under Title VI of the Civil Rights Act of 1964.[50] The NAACP in Gainesville, Florida opposes the *American Renewables, LLC* 100 MW wood burning project for that city,[51] and in Tallahassee, Florida a biomass project also prompted a notice of intent to sue under Title VI.[52]

E. Bioenergy Crops and Food Supply

Several biomass combustion projects propose to burn "bioenergy" crops such as *arundo donax*, *miscanthus giganteus*,[53] or switchgrass. In May, 2011, leading intergovernmental organizations including the World Bank, International Monetary Fund, and the World Trade Organization called for an end to subsidies and mandates for biofuels on grounds of food security.[54] The same rationale applies to growing energy crops to burn for electricity: use of cropland for this purpose reduces the land available for growing food crops and jeopardizes food security.

II. Financial Subsidies for Biomass Electricity

Federal and state financial incentives in the form of tax credits, cash grants, loans and renewable energy credits are driving the current rush to build facilities that burn biomass for electricity. Industry projections say worldwide capital investment in biomass infrastructure will remain steady over the next five years, rising from $28.2 billion annually in 2010 to $33.7 billion by 2016[55]

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[48] http://www.ajc.com/news/dekalb/biomass-proposal-draws-protesters-976960.html
[49] http://dissidentvoice.org/2011/02/dismantling-energy-apartheid-in-the-united-states/
[50] Attorneys Ludder and Gilmore http://www.dep.state.fl.us/air/emission/bioenergy/northwest_renewable.htm
[51] http://fltrib.com/articles/burning-down-new-energy-source-running-trouble
[52] http://www.nobiomassburning.org/BAP/Civil_Rights.html
[53] Northwest Florida Renewable Energy Center, LLC, permit granted April 2011 by Florida DEP; www.gulfbiomassincinerator.org
[54] "Reducing policy conflicts between food and fuel" http://ictsd.org/downloads/2011/05/finalg20report.pdf
[55] Pike Research, http://www.pikeresearch.com/newsroom/biomass-capital-investment-to-reach-33-7-billion-by-2015. "Global revenues from WTE (waste to energy) systems will...more than [triple] in size...to almost $13.6 billion by 2016"

A. Federal Subsidies

1. ARRA, Section 1603 Energy Grants

A federal cash grant under the American Recovery and Reinvestment Act of 2009, (ARRA, P.L. 111-5) for up to thirty percent of the construction cost of a biomass electricity project is the key financial incentive driving the construction of several hundred biomass projects in the pipeline. The cash grant is provided under the provisions of Section 1603 of ARRA and is in lieu of electing to take the investment tax credit. The grant is paid at the later time of submittal of an application or when the project becomes operational. The project must be on line by 2013.

ARRA provides that Section 1603 grants are available for "specified energy property" defined to include biomass electricity. By accepting the cash grant, the project's owner foregoes tax credits under IRC §§ 45 and 48. The program was due to expire on December 31, 2010, but was extended by one year.[56] The extension bill, H.R. 4853 expands benefits for biomass electricity by allowing "expensing," meaning the entire cost of an asset placed in service after September 8, 2010, and before January 1, 2012, can be deducted in the year it is placed in service. Both provisions allow a rapid recovery of initial investment costs which makes the projects very attractive to investors.

The Section 1603 program is administered by the U.S. Department of Treasury (Treasury) whose position is that the National Environmental Policy Act (NEPA) does not apply to projects awarded cash grants. This allows the environmental impacts of biomass combustion power facilities to evade federal oversight and accountability and removes a major regulatory hurdle. As of May 2011, nine commercial electric biomass facilities had received ARRA grants totaling $102,532,534.[57]

Evergreen Community Power LLC	Pennsylvania (Env. Justice concerns)	$39,226,475
Simpson Tacoma Kraft Company, LLC	Washington (Env. Justice concerns)	$17,368,882
L'Anse Warden Electric Company LLC	Michigan	$11,690,566
Rio Grande Valley Sugar Growers, Inc.	Texas	$10,232,261
Multitrade Rabun Gap LLC	Georgia (Env. Justice concerns)	$8,503,434
Thompson River Power, LLC	Montana	$6,465,081
Blue Lake Power, LLC	California	$5,378,717
Multitrade Telogia LLC	Florida	$2,962,718
Acton Bio Energy LLC	Massachusetts	$704,400

according to Pike Research's 2011 report titled "Waste-to-Energy Technology Markets." "Waste to Energy" refers to burning municipal waste, and as noted, some definitions of biomass include municipal waste.

[56] On Dec. 13, 2010, Section 707 of the Tax Relief, Unemployment Insurance Reauthorization and Job Creation Act of 2010 (H.R. 4853) extended the Section 1603 program. SNL Financial, 13 Dec., 2010. http://www.snl.com/InteractiveX/article.aspx?ID=12093651&CDID=A-12093651-13870&KPLT=2&Printable=1

[57] Other biomass projects that use biogas or capture methane on farms were not included in this study. n total, $5,794,909,024 has been allocated to renewable energy projects, including wind, solar, geothermal and biomass as of the end of 2010. Qualifying projects are defined by the Internal Revenue Code. U.S. Department of the Treasury, 1603 Program, "List of Awards," http://www.treasury.gov/initiatives/recovery/Pages/1603.aspx

Section 1603 applicants are not publicly identified until after the grants are awarded, undermining Treasury's claims of "transparency" in the ARRA grant process. The largest 1603 grant to date, over $39 million, was awarded to a private multinational corporation, Indeveco, in Reading, Pennsylvania for the Evergreen project, located in areas with environmental justice concerns. Leaf Clean Energy obtained funding for more than one facility, for a total of $11.465 million. *Duke Energy*, which has been subject to large fines for polluting, as highlighted by the Center for Public Integrity[58], is one of the leading companies promoting biomass facilities in various parts of the U.S., in part through a joint venture called *ADAGE*, a partnership with *AREVA*, based in Europe.[59]

2. Federal Loan Guarantee Program

The U.S. Department of Energy implements a renewable energy loan guarantee program that includes biomass electricity. The program was established under the Energy Policy Act of 2005, Title XVII, Section 1703. The loan guarantees are at least partially funded with ARRA resources. The Energy Policy Act limits loan guarantee eligibility to projects that "avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases; and employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued."

Currently, four biomass electricity projects have applied for and been pre-approved for DOE loan guarantees. These projects are in Port St. Joe, Florida, Green Bay, Wisconsin, Montgomery, New York, and Port Angeles, Washington. Each uses combustion to convert various fuels, including garbage, construction and demolition debris, urban wood waste, and paper mill byproducts into electricity. Whether combustion of these materials meets the eligibility requirements of the EPA Act 2005 for avoiding, reducing, or sequestering air pollutants or greenhouse gases is at best questionable. In mid-May 2011, several biomass projects received notice from DOE that their applications had been placed on hold due to a shortage of funds at DOE and the inability of the projects to meet the September 31, 2011 start of construction.[60]

3. Energy Tax Credits

Another key federal subsidy for biomass electric power production is the Renewable Electricity Production Tax Credit which provides $0.011 per kWh or approximately $10 per MWh.[61] As noted above, ARRA allows taxpayers eligible for the federal renewable electricity Production Tax Credit (PTC) to take the federal business energy Investment Tax Credit (ITC) or to receive

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[58] Center for Public Integrity, http://www.publicintegrity.org/articles/entry/2565/

[59] ADAGE website: "Sustainable energy from nature. Not only can it happen, it can happen right now. ADAGE, a joint venture between AREVA and Duke Energy, is focused on converting woody biomass, a renewable resource, into electricity/biopower. And we are positioned to succeed in today's uncertain economic environment because our model focuses on providing the highest value possible to our customers while working in harmony with nature." 13, Jan., 2011. http://www.adagebiopower.com The website states it "supplies solutions for carbon-free power generation" http://us.areva.com/scripts/home/publigen/content/templates/show.asp?P=470&L=

[60] http://blog.energy.gov/blog/2011/05/10/update-department's-loan-programs; http://biofuelsdigest.com/bdigest/2011/05/18/why-did-my-loan-guarantee-just-die-and-what-do-i-do-about-it/

[61] "Biomass Sustainability and Carbon Policy Study," p. 13. *Manomet Center for Conservation Sciences*. 10 June, 2010. http://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf

a grant from Treasury instead. ARRA also allows taxpayers eligible for the business ITC to receive a grant from the U.S. Treasury instead of the ITC. Other federal incentives include the Modified Accelerated Cost Recovery System and Clean Renewable Energy Bond program.

Tax credits that benefit biomass electricity generation which are being considered for renewal in 2011 are the production tax credit in IRC Section 45(d) and 48(a)(5) which allows an election to claim the energy credit in lieu of the electricity production credit for renewables.[62]

4. Biomass Crop Assistance Program (BCAP)

This incentive was established under the Food, Conservation, and Energy Act of 2008, Title IX - Section 9001, referred to as the "2008 Farm Bill." BCAP is administered by the U.S. Department of Agriculture (USDA) Farm Service Bureau on behalf of the Commodity Credit Corporation (CCC).[63]

As originally proposed, BCAP was funded for $2.6 billion through 2013, and $536 million is allocated for 2010-2012 in the form of "technical assistance."[64] In December, 2010, the program was criticized by the USDA's Office of Inspector General who found wide-ranging problems with the way the FSA administered the CHST program. In April, 2011, Congress cut BCAP funding for fiscal year 2011 to $112 million. As of April 19, 2011 matching payments for woody biomass had not been authorized but an announcement about the availability of the subsidies is planned for mid-summer 2011. Project area proposals are due May 27, 2011.[65]

The biomass industry has placed a high priority on increasing federal funding for the BCAP program. As with the ARRA cash grants for biomass electricity, the primary beneficiaries of the BCAP program are large multinational corporations. Under BCAP, American taxpayers subsidize the fuel supply for biomass electricity all the way from growing it to delivery to the facility.

There are two components to the program. First is the "collection, harvest, storage and transportation" (CHST) component that provides matching payments for the collection, harvest, storage and transportation of biomass fuels that can be burned by biomass projects. Businesses that extract wood from forests or who otherwise collect biomass and bring it to the power facility are eligible for a subsidy. Part of this subsidy is passed on to the biomass power facility. Second, the program subsidizes growing biomass crops for energy use. Funds to establish a crop, and annual payments after that are available for producers who enter into contracts with the Commodity Credit Corporation (CCC) to produce eligible biomass crops on "contract acres" within BCAP "project areas."

BCAP's environmental impacts are described in comment letters to USDA on the BCAP draft and final EIS.[66] These comments highlight the negative environmental impacts as well as the

[62] Expiring Federal Tax Provisions 2010-2020, by the Staff of the Joint Committee on Taxation. 21 Jan., 2011.
[63] www.fsa.usda.gov/FSA
[64] Proposed Rule, Table 1, "BCAP Costs by Year"); Programmatic Final Environmental Impact Statement. 8 Feb., 2010. http://www.fsa.usda.gov/Internet/FSA_File/bcapfinalpeis062510; 75 Fed. Reg. 66202(Oct. 27, 2010); Record of Decision announcement at 75 Fed. Reg. 65995 (Oct. 27, 2010)
[65] http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=ner&newstype=newsrel&type=detail&item=nr_20110420_rel_0044.html
[66] http://www.nobiomassburning.org/BAP/Big_Bucks_for_Biomass_files/BCAP%20DPEIS%20Comments%20NRDC.pdf

resultant distortions that have resulted in prices in the wood products markets and in food production and marketing.

a. BCAP CHST Subsidy Program

This part of the BCAP program provides a 50/50 matching payment to companies for the "collection, harvest, storage and transportation" of biomass to "qualified" facilities.[67]

USDA made the 2009 and 2010 payments without conducting an environmental review under the National Environmental Policy Act (NEPA). In February 2010, USDA terminated the payments and completed a programmatic Environmental Impact Statement in July, 2010. The program was restarted in late January, 2011.[68]

From 2009-2010, prior to undertaking an effort to comply with NEPA, USDA paid out almost $250 million under the CHST program.[69]

The primary beneficiaries of CHST subsidies are large corporations such as *Weyerhaeuser, Boise Paper, Covanta, Louisiana Pacific, Georgia-Pacific,* and *International Paper*.[70] In Massachusetts, $991,940 was paid out under the CHST program in 2009-2010 to subsidize biomass fuel for two facilities: *Pinetree Power* (Fitchburg)[71] owned by *Suez Energy*, and *LaSalle Florists* Inc. a very small greenhouse operation.[72]

The CHST subsidy program benefits biomass fuel suppliers (timber and logging industry, etc.) and the biomass power plants themselves because biomass suppliers pass on about 50% of the subsidy to the biomass power plant facility in the form of lower prices for the biomass fuel they supply and transport to the power plant.[73]

b. BCAP Annual Payments Program

This part of the BCAP program is intended to assist agricultural and forest land owners and operators to plant and grow crops that will be used to produce energy, including trees for biomass electricity. It pays for up to 75% of the establishment costs of new energy crops. Biomass suppliers participating in a selected "BCAP project area" surrounding a qualifying "biomass conversion facility" can collect 15 years of payments to establish new crops of woody

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[67] Suppliers can only deliver biomass to "qualified" facilities. Eligible fuel types are designated by the USDA.
[68] Simon, Daniel and Kimmerer, Tom. "BCAP relaunch should bring new biomass producers into the supply chain." *Biomass Power and Thermal.* http://biomassmagazine.com/articles/5256/bcap-relaunch-should-bring-new-biomass-producers-into-the-supply-chain/
[69] "BCAP CHST Summary Report, FY 2009 and FY 2010." http://www.fsa.usda.gov/Internet/FSA_File/bcap_chst_summary_report.pdf
[70] http://www.nobiomassburning.org/BAP/Big_Bucks_for_Biomass_files/BCAP%20Facilities%20List.pdf
[71] Pinetree Power is 100% owned by the multinational company Suez Energy Generation. http://wwwsuezenergyna.com/utilities/documents/Fitchburg.pdf Pinetree burns "whole tree chips," landfill gas, and "paper derived fuel" and has a 17 MW capacity.
[72] http://www.nobiomassburning.org/BAP/Big_Bucks_for_Biomass_files/BCAP%20Facilities%20List.pdf
[73] "Biomass Sustainability and Carbon Policy Study." Manomet Center for Conservation Sciences. 10 June, 2010. http://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf

biomass.[74] Biomass producers contract with the Commodity Credit Corporation (CCC) to produce eligible biomass crops on "contract acres" within so-called "BCAP project areas".[75]

5. Pulp and Paper Industry "Black Liquor" Subsidies

The pulp and paper industry has been using a byproduct called "black liquor" as a combustible source of energy for almost a century. IRS rulings in 2009 and June, 2010 enabled the industry to claim more than $6 billion in tax breaks (claimed by publicly held companies alone) because black liquor is considered an "alternative fuel" eligible for the "cellulosic biofuel producer tax credit". Privately held companies likely claimed additional billions of dollars.[76]

The black liquor tax break is based on the IRS "determination" that black liquor is a cellulosic fuel, and the tax break can be applied through 2015. For some companies, the tax credit in 2009 exceeded total net income. For example, *Smurfit Stone Container* had a black liquor credit of $654 million with a net income of $8 million. Domtar Paper, joint developer with We Energies of the biomass electricity project in Rothshild, WI, had a black liquor credit of $498 million and a net income of $310 million.

Although Congress ended most of the credit as of December 31, 2009, the industry is still able to benefit from it. According to a recent article:

> *Now it turns out that paper companies are still exploiting the tax code to make money from black liquor. The convoluted story begins on June 28, 2010, when IRS lawyers issued an opinion permitting paper manufacturers to retroactively claim a different benefit for the black liquor they burned in 2009: the cellulosic biofuels credit. To be sure, companies choosing to switch to the cellulosic credit would have to give back the money they got from the alternative fuel mixture credit (with interest). But for some companies, that may be profitable, since the cellulosic credit is $1.01 per gallon — twice as much as the alternative fuel mixture credit. Furthermore, companies can "carry forward" the 2009 cellulosic credit to offset future tax bills well into this decade.*[77]

When combined with benefits under the Renewable Portfolio Standards, the ability to also claim a producer tax credit for producing black liquor to burn for electricity makes biomass energy projects highly lucrative for the pulp and paper industry.

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[74] "Biomass Sustainability and Carbon Policy Study," p. 14. Manomet Center for Conservation Sciences. 10 June, 2010. http://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf

[75] http://www.fsa.usda.gov/FSA/webapp?area=home&subject=ener&topic=bcap

[76] http://www.washingtonpost.com/business/economy/paper-industry-pushed-further-into-the-black-by-black-liquor-tax-credits/2011/04/19/AFdkrMtE_story.html; http://www.risiinfo.com/blogs/Son-of-Black-Liquor-finally-enters-the-limelight.html?source=email_MT

[77] http://www.washingtonpost.com/opinions/a-paper-subsidy-that-must-be-stopped/2011/05/03/AFyO86iF_story.html

B. State Subsidies

1. Renewable Portfolio Standards and other incentives

With the failure of federal climate legislation in 2009, and the absence of a federal renewable electricity standard, state renewable portfolio standards (RPS) are the governing regulatory programs that mandate the production of "renewable energy." Taxpayer and ratepayer subsidies make it possible for the mandates to be fulfilled by providing the funding to build and operate new renewable energy generating sources.[78]

About forty states have RPS programs that require utilities to provide customers with a certain percent of "renewable" energy . The production of electricity through the combustion of "biomass" is qualified by most RPS programs as a means of meeting RPS targets.[79] Other forms of renewable energy generation included in RPS programs are wind, solar, geothermal, and hydropower. Biomass combustion is fundamentally different and should not be included as a form of renewable energy in state RPS programs..

One way for power utilities to meet RPS mandates is to purchase "renewable energy credits" (REC) from renewable energy power generators, including biomass facilities. The ability of a biomass power facility to sell RECs is a major financial incentive, providing millions of dollars of annual income. Corporations such as *Sterling Energy Assets,* a large "green credits" trader, [80] have entered into joint ventures to develop biomass electricity projects in Port Townsend, Washington and Valdosta, Georgia.

A typical 50 megawatt biomass electricity project can earn about $10 million per year by selling RECs, depending on the going price. This is calculated as follows:

The average value of a REC in 2010 was between $20 and $40 dollars.[81] Using the Greenfield, Massachusetts *"Pioneer Renewable Energy"* project as an example, that would be 47 MW x 24 hours x 365 days = 411,720 x 30.00 =$12,351,600. Since the facility is expected to operate at 80%-90%, the sum is $10,498,860.00 annually. Biomass electricity projects expect to operate for at least 30 years.

There are also other state grants, loans and incentives for biomass combustion power plants, which provide myriad avenues of support for biomass projects at the sub-national level. A comprehensive database is maintained via the DSIRE website. [82]

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[78] In mid-2011, low natural gas prices are making the price of renewables high by comparison and hence unattractive. Financial Times, May 23, 2011...
[79] Database of State Incentives for Renewable Energy (DSIRE). http://www.dsireusa.org/RPS
[80] Aspen Power's 50 MW Biomass Green Power Generator. http://www.youtube.com/watch?v=KeRWuGH5SRE
[81] "Biomass Sustainability and Carbon Policy Study," p. 16. Manomet Center for Conservation Sciences. 10 June, 2010. http://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf
[82] See,http:// www.dsireusa.org

III. Green Marketing

The increasing popular and resultant political drive for "alternative", "renewable", or "clean" energy is a factor that has led to the recent surge in proposals of biomass projects. The industry public relations campaign seeks to convince the public, media, and policy-makers that biomass combustion projects are environmentally beneficial and entitled to continued status as "renewable energy". In 2009, the biomass industry association led a $250,000 marketing campaign to ensure the continuation of federal tax subsidies for biomass energy.[83] In addition, the industry has fought U.S. EPA's effort to include carbon dioxide emissions from biomass combustion in the Clean Air Act greenhouse gas "Tailoring Rule" which led the EPA to propose a three year delay in regulating the emissions.[84]

Industry marketing materials claim that biomass burning is "carbon neutral" which creates the impression that carbon dioxide emissions from biomass do not contribute to climate change or otherwise endanger human health and the environment. Since 2008, however, numerous reports have shown that the environmental and climate impacts from biomass are significant, and achieving carbon neutrality for biomass combustion takes many decades, if not more than a century, before such balance might be achieved.

For example, *Liberty Green Renewables, LLC* alleges on its website that "increasing the use of biomass in the United States will reduce air pollution, greenhouse gases, and reliance on imported oil."[85] *Buena Vista Biomass Power* claims that its wood-burning facility in California provides environmental benefit - stating "Electricity produced by biomass reduces the threat of global climate change."[86] "But their Environmental Impact Statement (EIS) is a 346 page detailed description of impacts on traffic, air quality, noise, biological and forest resources, water, soils, public health and global climate change and mitigation. It states that the facility will emit approximately 169,979 tons (154,203 MT) of CO2e per year. The impacts described in the EIS stand in stark contrast to claims that biomass electricity will reduce threats of global climate change.

It is vital for the public and policy-makers to critically evaluate such industry claims, and recognize that claims of "cleaner" do not mean clean, or green, or healthy, or even fiscally prudent. Biomass advocates are attempting to ride the coat-tails of public concern over the environment and health. As outlined throughout this Report, industry claims regarding biomass combustion are decidedly untrue. Facts are often obscured by clever marketing and lobbying.

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[83] http://www.eriewire.org/archives/11316/section/wire/
[84] http://www.tucsonsentinel.com/nationworld/report/042911_pollution/biomass-power-may-not-so-green-after-all/; "Deferral for CO2 emissions from bioenergy and other biogenic sources under the Prevention of Significiant Deterioration (PSD) and Title V programs," 40 CFR 15249 (March 21, 2011)
[85] Liberty Green is developing three biomass electric facilities in Indiana. http://www.libertygreenrenewables.com Dominion Resources asserts that "biomass-powered electricity is 'emissions free.'" Smoke & Mirrors Report: page 9: Dimensions 2008-2009: Corporate Responsibility Report, Dominion Resources, pg 20. http:///www.dom.com
[86] Buena Vista Biomass Power. http://www.bv-biomass.com/

IV. Jobs and Economic Impacts

Biomass electricity projects are often promoted as job creation. In reality they are an extremely expensive and inefficient job creation vehicle, especially when viewed in terms of the amount of taxpayer money spent per job, accompanied by an expected rise in health care and environmental cleanup expenditures from air, water, and ash disposal costs. A large range of biomass feedstock including forest industry waste (from paper mills, saw mills), construction and demolition waste (C&D) and municipal solid waste is also readily recyclable and compostable, practices that produce 6-10 times the number of jobs per tonnage of material than combustion.[87] Public subsidies for burning these materials creates a barrier for much needed investments and precious resources from going to a resource recovery economy that could provide long term employment for millions of Americans[88].

The cost of constructing a typical 50 megawatt biomass electricity project is about $200 million. This investment creates only about 22 to 25 full time, permanent jobs to run the facility over the 30 year life of the project. According to industry documents for facilities proposed for the following communities, these are the numbers of permanent jobs that will be created:

Project Name	**Location**	**# of Permanent Jobs to Operate Facility**	**Est. Capital Cost**	**MW of Electricity (net to grid)**
Liberty Green Renewables, LLC	Milltown, IN	≤ 40	$200 million	About 50
Liberty Green Renewables, LLC	Scottsburg, IN	≤40	$200 million	About 50
Russell Biomass, LLC	Russell, MA	25	$200 million	About 50
Pioneer Renewable Energy, LLC	Greenfield, MA	25 to 30	$200 million	About 45
Palmer Renewable Energy, LLC	Springfield, MA	20	$200 million	About 40
American Renewables, LLC	Gainesville, FL	40	$350 million	100
Northwest Florida Renewable Energy, LLC	Port St. Joe, FL	25	$250 million	55

[87] Jobs and Zero Waste, Global Alliance for Incinerator Alternatives: http://www.no-burn.org/article.php?id=475
[88] Jobs and Zero Waste, Global Alliance for Incinerator Alternatives: http://www.no-burn.org/article.php?id=475

Considering only the ARRA cash grant of thirty percent of the capital cost for construction of a new 50 MW biomass facility, this translates into about $3.5 million per job.[89] When other ratepayer and taxpayer subsidies, including higher electric rates, loan guarantees, and BCAP payments are considered, the taxpayer investment is even more than $3.5 million per permanent job.

Biomass industry proponents claim that there will be hundreds of indirect jobs and community benefits created via logging or fuel-collection. There are several flaws in this argument.

Firstly, the entire forest biomass supply across the country would be only be able to provide one year's worth of energy for current U.S. energy consumption rates. As a result, most biomass combustion plants are required to use a range of biomass feedstock, not only woody forest biomass. A wide array of organic waste materials such as paper and saw mill residues; C&D waste; animal manure; railway ties and municipal solid waste are used to fire these facilities. The majority of such materials are easily recycled or composted - for far less cost than combustion and resulting in considerably more long-term jobs. For the handful of seasonal, short-term jobs that are created in logging, forestry and the combustion facilities themselves, multiples of long-term, community-based jobs stand to be created in a range of collection, reuse, recycling, recycling-manufacturing and composting industries.

Second, studies of the forest industry show that jobs in these sectors are in rapid decline to automation and mechanization, not due to environmental regulation as claimed by industry.[90] Facilities that burn secondary manufacturing rejects, or paper mill rejects, such as the projects in Rothschild, Wisconsin and Port Townsend, Washington will create few new forestry or trucking jobs for those feedstocks, and few new biomass collection, harvesting and trucking jobs overall.

Third, when municipal solid waste, C&D waste and other recyclable and compostable materials are used as feedstock for biomass combustion, this directly undermines recycling efforts. Over 92% of all such waste in the U.S. can be easily recycled or composted. Recent studies show that by investing in a resource recovery economy that would double the current national recycling rate (33%), over 1 million new jobs could be created in this sector[91]. Despite biomass industry claims to be compatible with recycling, studies of EU waste trends show that regions/countries that burn the least are able to recycle the most[92]. More importantly, the high capital costs, and operating and maintenance costs of biomass combustion draw away much needed public funds and private financing from the investments needed in resource recovery jobs[93]. Additionally, the use of wood industry residues, wood fibers and paper waste for biomass energy is emerging

[89] The typical 50 MW plant costs about $200 million to build and ARRA (2009 Stimulus Bill) or investment tax credits will pay for about one-third of that cost. That means at least $70 million in taxpayer dollars will be invested to create for 20 permanent jobs – about $3.5 million per job.
[90] Working for the Environment: A growing Source of Jobs – Worldwatch Institute http://www.worldwatch.org/system/files/EWP152.pdf
[91] Recycling Jobs reports available for download at Recycling Works Campaign website: http://www.recyclingworkscampaign.org/?page_id=10
[92] Incinerator Myths vs. Facts, Global Alliance for Incinerator Alternatives, 2010: http://www.no-burn.org/incinerators-myths-vs-facts-1
[93] Federal Policy Recommendations by 130 U.S. unions, environmental groups and social justice groups: http://www.recyclingworkscampaign.org/?page_id=20

as a potential threat to many traditional wood and paper products industries. A growing number of companies in these sectors, such as those making particle-board, charcoal, and paper have reported that burning wood biomass for electricity threatens their industries, and have opposed biomass electricity projects. [94]

In December, 2010, a biomass electricity project for Salem, Missouri was opposed by a competing wood user, Royal Oaks Charcoal. Representatives of the composite panel industry have expressed concerns about competition for a limited supply of forest products in connection with BCAP subsidies for biomass energy. "BCAP would redirect wood from the manufacture of valuable wood products that supports 350,000 American jobs to an industry that supports a fraction of this number of jobs to burn it." according to John Bradfield of the *Composite Panel Association* [95]

Similarly, Packaging Corporation of America, which runs a paper mill that will face competition from the biomass electricity project in Rothschild, WI, provided testimony to the Public Service Commission of Wisconsin that the biomass electricity project will adversely impact the availability and cost of woody biomass needed for its operations [96]

Legislation such as the Home Star Energy Retrofit Act of 2010, by encouraging homeowners to invest in energy efficiency retrofits, would create 170,000 manufacturing and construction jobs that could not be outsourced to China. This is a common sense idea for job creation that will also boost local economies, while helping families afford their energy bills. It would also help more than 3 million Americans invest in energy-saving technology, saving families close to $10 billion on their energy bills over 10 years. By implementing similar efficiency programs, Vermont created 430 jobs in 2007 and 2008, generating more than $40 million in income. In the seven years of its state efficiency program, Vermont cut energy use by 7 percent, reducing costs for homes and businesses by $31 million annually. A national energy retrofit and efficiency program could save as much energy as taking three coal-fired power plants offline or hundreds of thousands of cars off the road.

[94] Elperin, Juliet, "Unintended ripples from the biomass subsidy program," Washington Post, Jan. 20, 2010. http://www.washingtonpost.com/wp-dyn/content/article/2010/01/09/AR2010010902023_2.html

[95] Bradfield's PowerPoint presentation, BCAP Unwound: What Can Happen When Government Policies Impact Competition for Wood criticizes the USDA for having "redirected fully utilized materials already in the stream of commerce to lower value uses," as in burning mill waste for electricity. Biomass Busters, Jan. 2011

[96] http://www.nobiomassburning.org/BAP/Forests.html

V. Conclusion

Federal and state legislation and policies should be changed to reflect the latest science concerning the dangers of biomass combustion. Biomass electricity should be excluded from programs that promote and subsidize "renewable energy." This requires change in IRC §§ 45 and 48 pursuant to which biomass qualifies for tax credits and related subsidies. While amending the tax code may take time, the Departments of Treasury and Energy should immediately exercise their discretionary authority to ensure that only "biomass" projects that do not have negative climate, public health, and environmental impacts are provided with scarce taxpayer resources under programs such as the ARRA and Loan Guarantee programs. Among other things this requires accurate carbon accounting.

Simultaneously, state renewable portfolio standards should be amended to exclude "biomass" from the list of qualifying energy generating sources. RPS programs should be aligned with greenhouse gas reduction targets and forest protection measures, as is being attempted in the changes in the Massachusetts RPS regulations.

Directing taxpayer and ratepayer subsidies away from polluting biomass combustion is sound public policy. Continuing existing federal and state policies that direct taxpayer money to build biomass combustion infrastructure will have unacceptable short and long-term negative impacts on public health, the environment and the nation's budget.

Appendix A:

List of Stalled or Withdrawn Biomass Proposals

This is a listing of proposed biomass facilities that have been significantly stalled, withdrawn or rejected within the past three years. (June 2008 - June 2011) Increasing opposition to such proposals from citizen, health, and environmental groups has consistently halted proposals, encouraging the adoption of clean, renewable alternatives.

Hamilton County, FL – Adage (Areva & Duke Energy)
June 2011 Adage's third 55 MW biomass proposal (after Shelton, WA and Gretna, FL) is currently shelved, and its permits are expected to expire in June 2011.[97] Media reports state: "We are in a holding pattern there, but the permit will expire in June", and that "The company intends to let it lapse." [98]

Valdosta, GA – Wiregrass Power LLC
June 2011 – After repeatedly missing permit deadlines, the proposed $110 million, 40 MW plant looks to be cancelled after construction timelines were not met. Opposition from community and health groups, as well as local politicians repeatedly dogged the project.[99]

Springfield, MA - Palmer Renewable Energy
May 2011- On Monday May 23rd, Springfield city Council voted 10-2 to revoke the special permit given to PRE to develop a $150 million, 35 MW wood-burning facility. Citizen groups and health organizations actively opposed the project.[100]

Mecklenburg County, NC– ReVenture
May 2011 - Plans to burn municipal waste in a 20 MW project near Charlotte, NC faced opposition from citizens and politicians. The project has been at least cut in half (to 10M MW) and will no longer use residential waste for fuel, nor use the local landfill for the facility's residual waste.[101]

Attleboro, MA – *ZE-Gen Inc.*
May 2011 - After Attleboro Residents with Important Safety Concerns organized hundreds of people to attend Conservation Commission Hearings, expressing concerns about water pollution, air quality, and health impacts. The facility was intended to burn railroad ties, wooden utility poles, plastics and dried anti-freeze using commercially un-tested technology.[102]

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[97] http://biomassmagazine.com/articles/5352/adage-cancels-washington-biopower-plant
[98] http://www.bizjournals.com/charlotte/blog/power_city/2011/03/duke-energy-biomass-venture-suspends.html?page=all
[99] http://valdostadailytimes.com/local/x1190399100/Burning-issue-put-to-rest
[100] http://www.masslive.com/news/index.ssf/2011/05/springfield_biomass_plant_deve.html ; http://www.springfieldincinerator.info/; http://www.wwlp.com/dpp/news/local/hampden/springfield-revokes-biomass-permit
[101] http://www.bizjournals.com/charlotte/blog/going_green/2011/05/reventure-drops-county-deal.html?page=all
[102] http://www.thesunchronicle.com/articles/2011/05/25/news/9603700.txt

Pownall, VT – Beaver Wood Energy
April, 2011 – Plans for a 29.5 MW wood pellet have been indefinitely suspended after facing fierce opposition from local residents.[103]

Olympia, WA – Evergreen State College
April 2011 - After extensive opposition from citizen groups, County Commissioners passed a 1-year moratorium on the proposed $14 million wood-burning facility in December 2010. In April 2011, the school declined to pursue financing for the plant, and stated the project is no longer moving forward.[104]

Shelton, WA – Adage (Areva & Duke Energy)
March 2011 – A $250 million, 55 MW project was dropped citing "increased economic uncertainties, a poor market for new projects and other factors". Local opposition from citizen groups fought the project over concerns of air pollution, health, and environmental impacts.[105] A similar proposal in Gretna, FL by Adage was also cancelled in March 2010. Adage has a stated goal of building 10-12 biomass facilities by 2013, but has yet to begin construction on any. Due to continued opposition they have withdrawn several proposals already.[106]

DeKalb County, GA– Green Energy Partners
March 2011 –Plans for a $60 million wood chip gasification facility are stalled out, as county commissioners deferred approval of the project to further review health and environmental concerns.[107] The developed is still looking for suitable locations.

Somerset, MA – NRG Energy
February 2011 – Plans to repower a previously shuttered coal/oil facility were abandoned, leaving the plant permanently closed. Experimental plasma gasification technology was intended to burn coal, construction debris, and woody biomass.[108]

Madison, WI - University of Wisconsin – Madison
January 2011 – While continuing plans to close existing coal-fired burners, the proposal to convert them to biomass was canceled after a $250 million price tag was deemed too costly.[109]

Elbert County, GA – GreenFirst LLC
December 2010 – The proposed 50 MW, $400 million proposal to burn wood waste and municipal waste was abandoned, as the intended operator (Covanta) cited economic concerns. Opposition from citizen groups had worked to force a referendum on the proposal.[110]

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[103] http://biomassmagazine.com/articles/5362/beaver-wood-suspends-development-in-pownal-vt
[104] http://www.theolympian.com/2011/04/05/1604568/biomass-project-torpedoed.html
[105] http://www.vcstar.com/news/2011/mar/15/plans-dropped-for-proposed-wash-biomass-plant/
[106] http://www.bizjournals.com/triad/news/2011/03/17/duke-energy-biomass-venture-halts-work.html?ana=e_vert
[107] http://www.crossroadsnews.com/view/full_story/12490604/article-Gasification-plant-on-hold
[108] http://www.clf.org/newsroom/somerset-station-coal-plant-shuts-down-permanently-ending-pollution-legacy-in-somerset/
[109] http://biomassmagazine.com/articles/5238/new-wisconsin-governor-ends-uw-madison-biomass-project
[110] http://www.waste-management-world.com/index/display/article-display/6949293802/articles/waste-management-world/waste-to-energy/2010/12/Waste_to_Energy_Incinerator_Dropped_in_Georgia.html

Salem, MO – ProEnergy Services
December 2010 – Salem's Board of Alderman unanimously rejected ProEnergy's proposal for a $35 million, 20 MW wood-burning facility. Citizen groups cited pollution and health concerns, as well as logging impacts at the key reasons for opposing the project.[111]

Ashland, WI – Xcel Energy
December 2010 – Xcel cancelled what would have been the largest wood-burning facility in the Midwest. Rising construction costs drove the price tag for the gasification plant to $79 million. Citing that "renewable resources are becoming more cost effective" the company abandoned their plans.[112]

Shadyside, OH – FirstEnergy
November 2010 – A $200 million plan to repower two existing coal units at their Burger Plant with biomass were cancelled, citing falling market prices for electricity. The burners will instead be retired.[113]

Clackamas County, OR – S&H Logging
November 2010 – Expecting 1200 protestors at a county commission hearing, developer withdrew their proposal for a wood-waste bioenergy project located in an agricultural area. Water and air pollution, along with increased trucking t concerns were a primary issues raised by local citizens. Not a single person spoke in favor of the project at the first hearing. [114]

Loyalton, CA – Sierra Pacific Industries
August, 2010 – SPI shuttered its operating plant here citing economic conditions, as well as fuel sourcing issues from the Forest Service. The plant was originally closed in 2009, re-opened in Jan 2010 after re-negotiating rates for energy provided and fuel sourcing, only to close a few months later permanently.[115]

Hart County, GA - Fibrowatt
August 2010 – After extensive opposition from community groups, and an inability to secure a power purchase agreement, Fibrowatt withdrew plans for a biomass facility that would burn chicken manure.[116] This was Fibrowatt's third withdrawn proposal in 2010. (See Elkin, GA and Page County, VA)

Traverse City, MI – Traverse City Power & Light
June 2010 – After a series of community forums and local opposition, plans for a $30 million Traverse City wood-burning plant were "shelved" to explore other generating options.[117]

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[111] http://www.columbiatribune.com/news/2010/dec/17/wood-energy-proposal-gets-the-ax/
[112] http://www.startribune.com/business/111221084.html?page=1&c=y
[113] http://www.renewableenergyworld.com/rea/news/article/2010/11/no-biomass-at-burger-as-firstenergy-opts-to-close-coal-fired-units
[114] http://www.oregoncitynewsonline.com/news/story.php?story_id=128986736067806000
http://www.oregonlive.com/clackamascounty/index.ssf/2010/10/about_350_redland_area_residen.html
[115] http://www.sierrasun.com/article/20100820/NEWS/100829987
[116] http://www.independentmail.com/news/2010/aug/06/fibrowatt-chicken-litter-energy-plant-not-coming-h/
[117] http://record-eagle.com/local/x336268172/Biomass-plan-shelved

Elkin, GA (Surry County) - Fibrowatt
May 2010 – County Commissioners unanimously voted to end negotiations with Fibrowatt to develop a chicken-manure burning facility, after extensive citizen opposition.[118] Fibrowatt argued that burning poultry waste is "carbon neutral" but local officials rejected the proposals nonetheless.[119] This was Fibrowatt's second defeated proposal in 2010 (see Page County, VA).

Page County, VA - Fibrowatt
March 2010 – County Supervisors rejected Fibrowatt's proposal to locate a chicken-manure facility there. Extensive community opposition at public meetings on the matter was heard by public officials.[120]

Gretna, FL – Adage (Areva & Duke Energy)
March 2010 – A $250 million, 55MW proposed biomass facility was cancelled after city officials demanded a 6-month review to study impacts of the proposal. Developers suspended all work upon this request, and city officials consider the project withdrawn[121]

Tallahassee, FL – Biomass Gas & Electric
January 2009 – A controversial 35 MW proposal was withdrawn after concerns from local residents and city commissioners regarding environmental and health impacts.[122]

[118] http://www.mtairynews.com/printer_friendly/7458816
[119] "Fibrowatt Environmental Lies." Page County Citizens. 6 March, 2010. http://www.youtube.com/watch?v=-BSD_Jt2IfI
[120] http://www.energyjustice.net/files/fibrowatch/VA-Page-County-rejection-letter.pdf
[121] http://gretnaflorida.biomess.us/2010/03/16/termination-of-consideration-of-adage-biomass-project-in-gretna-florida/ http://www.bizjournals.com/charlotte/blog/2010/03/duke_energy-areva_joint_biomass_plant_scratched.html
[122] http://www.wctv.tv/news/headlines/38223249.html http://www.prweb.com/releases/2006/10/prweb449155.htm

Appendix B:

National Listing of Proposed Biomass Projects

(Detailed information available on state listings)

While some proposals lack detailed public information, Biomass Accountability Project is currently tracking over 100 projects that intend to burn wood-based biomass. If built, these projects would create 3,100 MW of electricity.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE
Blue Lake, CA	**Blue Lake Power** *(dba Renewable Energy Providers)*	13.5 MW	Wood
Ione, CA	**Buena Vista Biomass Power**	18 MW	Wood
Weed, CA	**Roseburg Forest Products**	15 MW	Wood
Ione, CA	**Jackson Valley Energy**	18 MW	Wood waste (primary); agricultural waste, energy crops, forest biomass (secondary)
Stockton, CA	**DTE Energy**	45 MW	Wood waste
Plainfield, CT	**Plainfield Renewable Energy LLC**	43 MW	
Port Manatee, FL	**Florida Biomass Energy LLC**	60 MW	Wood
Port St. Joe, FL	**Northwest Florida Renewable Energy Center**	67 MW, 55 MW (net)	Wood and/or fuel crops
Auburndale, FL	**Decker Energy International**	40 MW	Wood, tires, yard waste
Perry, FL	**Buckeye Florida LP**	25 MW expansion	Wood
St. Lucie County, FL	**St. Lucie County Renewable Energy Project**	18 MW	Municipal trash using plasma arc gasification
Citrus County, FL	**Progress Energy / Trans World Energy**	40 MW	Wood
Hamilton County, FL	**ADAGE**	55.5 MW	Wood
Gainesville, FL	**Gainesville Renewable Energy Center LLC**	100 MW	Wood

	(American Renewables, LLC)		
Valdosta, GA	**Wiregrass Power, LLC** (with Sterling Energy Assets)	40 MW	Wood and sewage sludge.
Rabun Gap, GA	**Multitrade Rabun Gap, LLC**	20 MW (expansion)	Wood
Appling, County, GA	**Oglethorpe Power**	100 MW	Wood
Warren County, GA	**Oglethorpe Power**	100 MW	Wood
Echols County, GA	**Oglethorpe Power**,	100 MW	Wood
Fort Gaines, GA	**Yellow Pine Energy Company LLC**	110 MW	Co-firing coal with wood.
Fitzgerald, GA	**Ben Hill Plant**	850 MW	Co-firing with coal
Blakely, GA	**Longleaf Energy Station**	1200 MW	Coal co-firing with wood.
Elbert County, GA	**GreenFirst, LLC**	50 MW	Municipal Waste and Wood
Sandpoint, ID	**Adage Sanpoint**	50 MW	Wood
Boise, ID	**Adage Boise**	50 MW	Wood
Robbins, IL	**Robbins Community Power LLC**	56 MW	Wood
Oakland, IL	**American Clean Coal Fuels**		Co-firing with wood
Brazil, IN	**Bioenergy Power LLC**	30 MW	Wood
Milltown, IN	**Liberty Green Renewables, LLC**	28 MW	Wood
Scottsburg, IN	**Liberty Green Renewables, LLC**	28 MW	Wood
Dubois County, IN	**Jasper Utility Service Board**	15-35 MW	Miscanthus grass
Iowa City, IA	**Iowa State University**		Coal/wood co-fire in 85:15 mix.
Goodland, KS	**Energy Holdings**	25 MW	Coal (primary) biomass including railroad ties, tires and other waste products (secondary)
Hazard, KY	**ecoPower Generation**	≤50 MW	Wood
Maysville, KY	**H L Spurlock**	1,118 MW (268 MW wood)	Coal co-firing with wood
Russell, MA	**Russell Biomass, LLC**	50 MW	Wood
Springfield, MA	**Palmer Renewable Energy**	38 MW	Wood
Greenfield, MA	**Pioneer Renewable Energy**	47 MW	Wood
Attleboro, MA	**ZE-Gen**		Industrial Waste

Pittsfield, MA	**Tamarack Energy**	40 MW	Wood
MD	**Fibrowatt**		Fielding inquiries for MD poultry facility
L'Anse, MI	**L'Anse Warden Electric Co**	80 MW	Wood or co-fire with fossil fuel
Ottawa Country, MI	**West Michigan Co-Gen**	4 MW	Poultry litter and animal waste
Lansing, MI	**Michigan Co-Gen**		
Two Harbors, MN	**Hedstrom Lumber**	71 MW	Cogeneration, burns wood and natural gas.
Perryville, MO	**LG Biomass**	32 MW	Wood
Noel, MO	**Noel Renewable Energy Solutions**		Poultry litter & animal waste
Thompson River, MT	**Thompson River Power LLC**	Expansion (currently 16 MW)	Coal co-fired with biomass
Missoula, MT	**Nexterra Systems**		
Columbus, NE	**Archer Daniels Midland**	71 MW	Wood secondary
Berlin, NH	**Laidlaw Berlin BioPower**	70 MW	Wood
Berlin, NH	**Power Development**, **LLC** and **Gestamp Biomass**	29 MW	Wood
Winchester, NH	**Clean Power Development / Gestamp Biomass**	20MW	Wood
South Kearny, NJ	**RTC Properties**,	14 MW	Wood
Jersey City, NJ	**Jefferson Renewable Energy Trash Incinerator**		Municipal Waste (primary) Wood (secondary)
Montgomery, NY	**Taylor Biomass**	20 MW	Municipal Trash, C&D etc.
Rome, NY	**Griffiss Utility Services Biomass**	9.6 MW	Wood
Jamestown, NY	**Jamestown Oxy-Coal Project**	43 MW	Wood, proposed co-firing with coal.
Rowan County, NC,	**Buck Power**, **Duke energy**		Wood co-firing with coal
Sampson County, NC	**Fibrowatt Sampson County**	55 MW	Mix of poultry litter and wood waste
Biscoe, NC	**Poultry Power / Progress Energy**	36 MW	Poultry litter
Spring Hope, NC	**ALP Generation**, **LLC**		Wood
Hertford County, NC	**Hertford Renewable Energy LLC**	50 MW	Wood burning
Riegelwood, NC	**Sterling Planet / International Paper**	40-50 MW	Wood
Charlotte, NC	**ReVenture Park Incinerator**	10 MW	Wood

Klamath Falls, OR	**Northwest Energy Systems Company, LLC**	37 MW	Wood
Klamath Falls, OR	**Northwest Energy Systems Company, LLC**	35 MW	Wood
Warm Springs, OR	**Northwest Energy Systems Company, LLC**	40 MW	Wood
Eugene, OR	**University of Oregon**		
LaPine, OR	**Biogreen**	25 MW	Wood
Reading, PA	**Evergreen Community Energy (Indveco)**	25 MW (gross)	Wood
Mt. Carmel Township, PA	**IntelliWatt Renewable Energy**	13 MW	Wood
Williamston, SC	**Lee (Duke Energy)**		Wood (including whole trees)
Orange County, SC	**Orangeburg County Biomass**	35 MW	Wood
Hartsville, SC	**Peregrine Biomass Development Company**	50 MW	Wood
Aiken, SC	**US DOE Savannah River Site (D Area)**	Expanding up to 20 MW	Wood
Florala/Lockhart, SC	**Southeast Renewable Energy (SRE)**	15 MW	
TBD	**Southeast Renewable Energy (SRE)**	15 MW	Wood (may also still plan to burn natural gas).
Dorchester County, SC	**Southeast Renewable Energy (SRE)**	15 MW	Wood
Kershaw County, SC	**Southeast Renewable Energy (SRE)**	15 MW	Wood
Santa Rosa, TX	**Rio Grande Valley Sugar Growers**	7.5 MW	Agricultural waste / energy crops (primary), natural gas (secondary)
Pownal, VT	**Beaver Wood Energy – on hold**	29.5 MW	Wood
Fairhaven, VT	**Beaver Wood Energy**	29.5 MW	Wood
Montpelier, VT	**Montpelier Community Renewable Energy Project**	1.25 MW	Wood
Virginia City, VA	**Virginia City Hybrid Energy Center** *(Wise County Coal Plant)*	585 MW (coal), up to 20% biomass (117 MW)	Wood co-firing with coal
Dendron, VA	**Cypress Creek** (Surry County Coal Plant)	750-1,000 MW (coal) 15 MW Wood (2%)	Wood co-firing with coal
Radford, VA	**American Cogeneration**, LLC	<1 MW by gasification	Utility poles, railroad ties.
Hurt, VA	**Dominion Pittsylvania Power Station**	80 MW	Wood chips.

Altavista, VA	**Dominion Virginia Power**	50 MW	Waste Wood
Hopewell, VA	**Dominion Virginia Power**	50 MW	Waste Wood
Southhampton, VA	**Dominion Virginia Power**	50 MW	Waste Wood
VA	**Fibrowatt**	40-55 MW	Poultry Litter
Port Townsend, WA	**Port Townsend Paper/PT Holdings** (Sterling Energy Assets)	25 MW (expansion)	Wood
Port Angeles, WA	**Nippon Paper Industries**	20 MW	Wood
Forks, WA	**Quilayeute School**		
Ellensburg, WA	**Central Washington University**		
Seattle, WA	**Simpson Lumber Company / Seattle Steam**	8 MW	Primarily urban waste wood.
Longview, WA	**Northwest Renewables, LLC**	24 MW	Wood
Longview, WA	**Mint Farm Industrial Park**	24 MW	Wood
Longview, WA	**Longview Fibre, LLC**	65 MW	Wood
Longview, WA	**Swanson Bark**	25 MW	Wood
Rothschild, WI	**WE Energies at Domtar Corp. Paper Mill**	50 MW	Wood
Madison, WI	**Madison's Charter Street Power**		Conversion to biomass as fuel.
Cassville, WI	**Nelson Dewey Generating Station** *(WI Power & Light / Alliant Energy)*	200 MW	biomass/coal co-firing in 50:50 mix

Appendix C:

State Listing of Proposed Biomass Projects

This listing includes proposed wood-based biomass projects that the Biomass Accountability Project and others are currently tracking. These are at varying levels of development, but have generally moved beyond a mere "hypothetical" stage, and have begun at least the initial steps of siting or permitting. This list focuses only on projects that use wood as a primary fuel. Projects are continually changing status, please contact BAP for updates. Energy Justice Network also maintains a mapped database of projects at http://www.energyjustice.net/map/biomassproposed

CALIFORNIA

At least two facilities (Humboldt County and Shasta County) have received a total of $4.7 million in ARRA grants.[123] Among the groups opposing biomass power facilities are the Center for Biological Diversity and Sequoia ForestKeeper.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Blue Lake, CA	**Blue Lake Power, LLC** (Renewable Energy Providers)[124]	13.5 MW	Wood	On October 5, 2010, this company in Shasta County received a $5,378,717.00 ARRA 1603 grant. It retrofitted an existing facility.
Ione, CA (Amador County)	**Buena Vista Biomass Power**	18 MW	Wood	This re-powering project converting to woody biomass has generated substantial opposition from the Center for Biological Diversity (CBD). The company was required to prepare an environmental impact statement in August 2010 which identifies

[123] http://www.saveamericasforests.org/Forests%20-%20Incinerators%20-%20Biomass/Documents/Government%20Information/ARRA_Woody_Biomass_projects%5B1%5D.pdf
[124] Renewable Energy Providers, Inc. http://renewableenergyprovidersinc.com/home/BlueLakePower/tabid/54/ Default.aspx

				how the facility is seeking ARRA funding from a wildfire management program of the USDA.[125] It is expected to begin hiring workers in summer 2011. [126]
Weed, CA	**Roseburg Forest Products**	15 MW	Wood	Roseburg Forest Products is one of the largest privately owned wood-products companies in the U.S. The facility is opposed by The Ecology Center and Concerned Citizens of Weed California. The plant would burn the equivalent of 250 cords of wood daily, and is located extremely close to neighborhoods and schools."[127]
Ione, CA	**Jackson Valley Energy**	18 MW	Wood waste (primary); agricultural waste, energy crops, forest biomass (secondary)	Owned by Reading Energy.
Stockton, CA	**DTE Energy Services**	45 MW	Wood	DTE will convert an existing coal-fired plant to burn wood, tree trimmings, and agricultural residues. The plant will provide power to PG&E to meet the state Renewable Portfolio standards.[128]

COLORADO

San Juan Bioenergy, LLC, Dove Creek, CO Received a $296,977.00 ARRA 1603 grant in March 2010 for a bioenergy project using sunflower waste to provide more than one third of the electricity powering its sunflower oil production facility.[129]

[125] In September 2009, the project applicant submitted a proposal to the USDA Forest Service (USFS) for consideration regarding American Recovery and Reinvestment Act (ARRA) grant funding for the proposed project.
[126] http://www.recordnet.com/apps/pbcs.dll/article?AID=/20110525/A_NEWS/105250311
[127] Clean Weed. http://www.cleanweed.org
[128] http://www.zacks.com/stock/news/55196/DTE+Energy+in+Bio+Drive
[129] San Juan Bioenergy. http://www.sanjuanbio.com

CONNECTICUT

Nexterra Systems is expanding its gasification technology across the U.S. with a biomass system that may involve electricity production, contracted by the City of Stamford, CT, for the Stamford Water Pollution Control Authority (SWPCA). The proposal is to switch from natural gas to burning "locally procured woody biomass waste."[130] Media reports state that it will be funded by US Dept. of Energy grants.[131]

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Plainfield, CT	**Plainfield Renewable Energy**	43 MW	Wood	

FLORIDA

Florida has some of the largest proposed biomass burning facilities in the U.S. These include proposals by Adage, a joint venture of Duke Energy and Areva, and by Boston-based American Renewables, LLC.[132] At least two biomass power plants have cancelled their plans, following citizen opposition.[133]

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Port Manatee, FL	**Florida Biomass Energy LLC**	60 MW	Wood	The company plans to obtain ARRA 1603 grant funding for its $200 million biomass combustion facility. It would use 1.3 million gallons per day of water for cooling and obtained an agreement from Manatee County to share the cost of a $7.6 million water pipeline.[134] The facility

[130] Bryenton, Lori. "Nexterra: Gasification system for Stamford, CT." Water and Wastewater. 17 September, 2009. http://www.waterandwastewater.com/www_services/news_center/publish/article_001840.shtml

[131] The press states, "By selecting Nexterra's gasification technology, Stamford projects that it will lower its fuel costs by up to $1 million per year and reduce its greenhouse gas emissions by approximately 4,000 tons annually, the equivalent of taking 1,000 cars off the road. The system will be designed to meet or outperform local air emissions standards."

[132] American Renewables, LLC is also developing a facility in Texas. Florida Department of Environmental Protection. http://www.dep.state.fl.us/air/emission/bioenergy/BioJuly202010.pdf

[133] Ibid.

[134] Florida Department of Environmental Protection. http://www.dep.state.fl.us/Air/emission/bioenergy/port_manatee/FBEnergyPermit.pdf

				is under construction, but advocacy group ManaSota-88 and others are opposing it.[135]
Port St. Joe, FL (Gulf County)	**Northwest Florida Renewable Energy Center**	67 MW (gross), 55 MW (net)	Wood and/or fuel crops[136]	Plans to use a gasification process to convert biomass to gas, however the technology is unproven on a commercial scale. The facility has received preliminary approval from the DOE Loan Guarantee Program and taken over by Rentech, LLC in April, 2011. Groups opposed include the NAACP, Apalachicola Riverkeeper, and Gulf Citizens for Clean Renewable Energy.
Auburndale, FL[137] (Polk County)	**Decker Energy International**	40 MW	Wood, tires, yard waste	
Perry, FL[138]	**Buckeye Florida**	25 MW expansion	Wood	
St. Lucie County, FL	**St. Lucie County Renewable Energy Project**	18 MW	Municipal trash using plasma arc gasification	The air permit has been issued.[139]
Hamilton County, FL	**ADAGE**	55.5 MW	Wood	The final air permit was issued and the facility was set to open in 2012.[140] As of 4/2011 – the project is expected to be abandoned.[141]
Citrus, FL	**Trans World Energy / Progress Energy**	40 MW	Wood	A 20-year power purchase agreement with Progress Energy has been signed.[142]
Gainesville, FL	**Gainesville**	100 MW	Wood	American Renewables, LLC is building a similar plant in Sacul, Texas.

[135] Wolfrum, Timothy. "County, Biomass Firm Agree to Build Water Line." *Brandenton Herald*. 10 Nov. 2010. http://www.istockanalyst.com/article/viewiStockNews/articleid/4655515
[136] Energy Justice Network. http://www.energyjustice.net/map/nationalmap; www.gulfbiomassincinerator.org
[137] Ibid.
[138] Ibid.
[139] Ibid.
[140] ADAGE withdrew a biomass project from Gadsden County on March 19, 2010. After citizen opposition, an Adage proposal for Gretna, FL was withdrawn in March 2010. (The facility has since tried to relocate in Shelton WA, also facing opposition, and eventual withdrawal.
[141] http://www.forest2market.com/f2m/us/f2m1/free/forest2fuel-archive/story/2011-Apr-BioPower
[142] http://www.businessweek.com/ap/financialnews/D9NDTQJG0.htm

	Renewable Energy Center LLC			Electricity will be sold to the Gainesville Regional Utility. The facility is expected to receive $200 million in ARRA funding. [143] There was no NEPA process.[144] Citizens challenged the facility with three lawsuits, including siting and air permits[145] In 12/2010 Governor Charlie Crist and the State cabinet voted to approve the project. [146] A major concern of citizen opponents is the adverse financial impact on the City of Gainesville and ratepayers. Citizen advocates allege that the total cost of American Renewables' electricity contract with the city is estimated at more than $2 billion, making the power much more expensive than other forms of energy.[147] The financial incentives offered to the developer include leasing 113 acres of public land for $100 per year for the facility site.[148] In March a settlement was reached requiring increased pollution controls and other modifications from the original proposal. Expected to begin operations by the end of 2013.

GEORGIA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Valdosta, GA	**Wiregrass Power, LLC[149]**	40 MW	Wood and sewage sludge	Stalled in June, 2011, following opposition form several groups. State chapter of the NAACP and the Lowndes-Valdosta NAACP chapter oppose the project and consider it a "clear cut case of environmental racism."[150]
Rabun Gap, GA	**Multitrade Rabun Gap, LLC**	20 MW, expansion of wood-only facility	Wood	On May 3, 2010, this project received an $8,503,434.00 ARRA 1603 grant.[151] According to the website, Multitrade Rabun Gap is a special purpose entity formed to construct and operate a

[143] http://www.forest2market.com/f2m/us/f2m1/free/forest2fuel-archive/story/2011-Apr-BioPower
[144] Maple, Tommy. "Biomass Plant to Use Ancient Technology." *Alligator*. 16 November, 2010.
[145] Smith, Chad. "Tug of War Over Biomass Plant." *Gainesville Sun*. 2 August, 2010.
[146] Boll, Aaron. "GRU Closer to Building Biomass Plant." WCJB-TV. 9 December, 2010. http://www.wcjb.com/ news/8298/gru-closer-to-building-biomass-plant
[147] GREC opponents also cite increased electricity rates, increased pollution and emission of dioxins. The Gainesville City Commission approved a 30-year energy contract between Gainesville Regional Utilities (GRU) and Gainesville Renewable Energy Center, LLC (GREC), many pages of which have been blacked out.
[148] "Stop the Gainesville Biomass Plant." http://biomess.us/gainesville/Stop%20the%20Gainesville%20Biomass% 20Plant.pdf
[149] Wiregrass Power, LLC is wholly owned by Sterling Energy Assets of Atlanta, GA and is developing the biomass burning facility proposed to be added to the Port Townsend Paper Company site in Washington State. According to its website Sterling Energy Assets, "leads the nation in sale" of renewable energy credits (RECs). http://docs.google. com/viewer?a=v&q=cache:J8RdCQrbI4oJ:www.ptpc.com/Biomass_ Handout. pdf
[150] Touchton, Leigh. Letter to President Obama and US Congress. 23 September, 2010. http://nobiomassburning.org/ docs/NAACP-Valdosta_ GA.pdf
[151] Leaf Clean Energy Company. http://www.leafcleanenergy.com/portfolio.html

				facility that "will use native renewable fuel from the local forest industry" and is expected to sell power to a Georgia co-op under a long-term PPA.
Appling, County, GA	**Oglethorpe Power**	100 MW	Wood	Oglethorpe Power plans to build two wood-fired biomass electric facilities in Appling and Warren Counties, and possibly a third plant in Echols County. As of April 2011 – this project is on indefinite hold.[152]
Warren County, GA	**Oglethorpe Power**	100 MW	Wood	
Echols County, GA	**Oglethorpe Power**	100 MW	Wood	
Fort Gaines, GA	**Yellow Pine Energy Company**	110 MW	Coal co-firing with wood.[153]	
Carnesville, GA	**Earth Resources Inc. / Sterling Planet**	28.5 MW	Woody biomass / Poultry Litter	A $70 million, 28.5 MW facility is hoping to begin operations in 2013, nearly 8 years after it was first proposed. Construction has still not started yet. [154]
Fitzgerald, GA	**Ben Hill Plant**	850 MW	Co-firing with coal	Some organizations are arguing for it to convert to a biomass incinerator.[155]
Blakely, GA[156]	**Longleaf Energy Station**	1200 MW	Coal co-firing with wood.	

HAWAII

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Kapolei, HI	**Campbell Industrial Park**	113 MW	Biodiesel.[157]	
Kaua'I, HI	**Kaua'I Island Utility Cooperative**		Agricultural "waste" [158]	

[152] http://www.forest2market.com/f2m/us/f2m1/free/forest2fuel-archive/story/2011-Apr-BioPower
[153] Wood Pellet Guru. 14 January, 2008. http://woodpelletguru.blogspot.com/2008/01/yellow-pine-energy-contracts-with.html
[154] http://www.independentmail.com/news/2011/mar/22/sc-company-wants-build-plant-turn-poultry-waste-en/?print=1
[155] Energy Justice Network. http://www.energyjustice.net/map/displayfacility-74188.htm
[156] "Petition Identifies Flaws in Longleaf Coal-Fired Power Plant Permit." Southeast Green. 19 January, 2010. http://www.southeastgreen.com/index.php?option=com_content&id= 3199&view= article &Itemid=51
[157] Energy Justice Network. http://www.energyjustice.net/map/nationalmap

Pepeekeo Point, HI	**Hu Honua Bioenergy LLC**			For over 3 years, Keep Our Island Clean has opposed reopening of the facility citing the lack of an EIS and the company's unwillingness to use the best available technology for pollution control.[159]

IDAHO

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Sandpoint, ID	**Adage Sandpoint**	50 MW	Wood	Adage, a joint venture of Areva and Duke Energy, announced an agreement with Energy Northwest in February 2010 and to build two wood burning biomass power facilities in Idaho by 2013 (per deadlines for the ARRA Section 1603 grants.) The facilities are in Sandpoint (50 MW) and north of Boise (50 MW). Adage also has proposed facilities in Florida and Washington.[160]
Boise, ID	**Adage Boise**	50 MW	Wood	

ILLINOIS

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Robbins, IL	**Robbins Community Power LLC**	56 MW	Wood[161]	
Oakland, IL	**American Clean Coal Fuels**		Coal co-firing with wood[162]	

[158] "KIUC signs biomass deal." PR Newswire. 25 Jan., 2011. http://www.prnewswire.com/news-releases/kiuc-signs-biomass-deal-114604869.html
[159] HuHonua Exhibits. https://docs.google.com/leaf?id=0B2v0inb_IIzvNjFkYWFmYzgtYWE5OC00NTVjLWI4 NGItMzk3Z mJkM2FlOGUz&hl=en
[160] Wire, Sarah D. "Energy company looks for biomass location in Idaho." *Seattle Times*. 26 February, 2009. http://seattletimes.nwsource.com/html/localnews/2008791211_apidxgrarevabiomass2ndldwritethru.html
[161] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[162] Ibid.

INDIANA

For the past two years, a range of citizens have been engaged in campaign involving three wood burning proposals by Liberty Green Renewables, LLC in Southern Indiana (Scottsburg, Milltown, and an undisclosed location).[163] Efforts included community organizing, legal challenges, and political campaigns. There is at least one current lawsuit seeking to ensure that zoning laws prevent air pollution. The opposition includes groups formed specifically to oppose the facility (Concerned Citizens of Crawford County and Concerned Citizens of Scott County) and regional groups such as Hoosier Environmental Council, Pike Gibson Citizens for Clean Environment, and Heartwood.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Brazil, IN	**Bioenergy Power**	30 MW	Wood[164]	
Milltown, IN	**Liberty Green**	28 MW	Wood[165]	
Scottsburg, IN	**Liberty Green**	28 MW	Wood[166]	
Dubois County, IN[167]	**Jasper Utility Service Board**	15-35 MW		The Jasper Utility Service Board is looking to convert an existing coal fired plant (which is on stand-by and not in active use) to biomass. Proposed fuel supplies include wood, coal co-firing, switchgrass/miscanthus grass. Includes a 40 MW on demand unit natural gas unit. Currently final negotiations are in progress with Twisted Oak, LLC from Texas. No permit applications yet filed.

IOWA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Iowa City, IA	**Iowa State**		Coal/wood 85:15	CHP plant proposing to use a wood biomass mix.

[163] Liberty Green Renewables. www.libertygreenrenewables.com
[164] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[165] Renewable Energy Development. http://renewableenergydev.com/red/biomass-milltown-power-plant/
[166] Scottsburg Renewable Energy Center. 3 November 2009. http://www.scottsburgbiomass.com/uploads/ LGR_ Public_ Informational_ Packet.pdf
[167] Greene, Linda. "Biomass invades, threatens Southern Indiana. *Bloomington Alternative*. 27 November, 2010. http://www.bloomingtonalternative.com/node/10609

	University		mix	

KANSAS

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Goodland, KS	**Energy Holdings**	25 MW	Coal and biomass	Also railroad ties, tires and other waste products.[168]

KENTUCKY

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Hazard, KY[169]	**ecoPower Generation**	Less than 50 MW	Wood	
Maysville, KY	**H L Spurlock**	1,118 MW total. 268 MW co-firing wood[170]	Wood co-fire with coal	

MAINE

Maine has a number of currently operating biomass combustion power facilities. According to Maine Gov. John Baldacci, Maine has the second-highest number of biomass facilities in the country after California.[171] For the 2009 to 2010 period, Maine received the most BCAP funding of any state: $34.8 million.[172] Maine has 26 BCAP qualified biomass facilities. Almost all the Massachusetts RPS-qualified biomass generation is located in Maine and New Hampshire. [173]There is significant concern over the fact that Maine forests are being disproportionally used to meet RPS targets in Massachusetts.

[168] "NC's Energy Holdings buying Kansas energy plant for $42M." *Tech Journal South*. 16 April, 2008. http://www.techjournalsouth.com/2008/04/nc%E2%80%99s-energy-holdings-buying-kansas-energy-plant-for-42m/
[169] Eco Power Generation. http://www.ecopg.com/?p=1
[170] http://webcache.googleusercontent.com/search?q=cache:fVPYcXttwIEJ:www.eia.doe.gov/cneaf/solar.renewables/page/trends/table1_9.xls
[171] "Maine benefits heavily from federal biomass subsidy." *Bangor Daily News*. 12 December, 2010. http://www.woodbiomass.com/woodbiomass/news/North-America/Wood-Energy/Maine-federal-biomass-subsidy-BCAP.html
[172] Leary, Mal. "Maine gets most federal biofuel help of any state." *Bangor Daily News*. 12 December, 2010. http://new.bangordailynews.com/2010/12/12/politics/maine-gets-most-federal-biofuel-help-of-any-state
[173] Page 13. http://www.mass.gov/Eoeea/docs/doer/rps/RPS_and_APS_2009_Annual_Compliance_Report_DOER_20311.pdf

MARYLAND

Fibrowatt has expressed renewed interest in building a poultry litter incinerator in Maryland. There is a request-for-proposal listed on their website.[174] As of May 2011, Governor Martin O'Malley expressed intent in signing Senate Bill 690, which among other issues, would classify Municipal Waste as a Tier 1 "renewable" fuel, making trash eligible for renewable energy credits and subsidies. [175]

MASSACHUSETTS

Over the past five years, five biomass facilities have been proposed for the Western part of the state, catalyzing community-based opposition. The state commissioned the Manomet Center for Conservation Science to conduct the *Biomass Sustainability and Carbon Policy Study*[176], completed in June 2010. Subsequently Massachusetts DOER began the process of changing the state's Renewable Portfolio Standard (RPS) regulations to comport with state law on greenhouse gas reduction targets and sound forest practices.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Russell, MA	**Russell Biomass**	50	Wood	This facility on the banks of the Westfield River was first proposed in 2006 and has generated substantial community opposition. Legal challenges include appeals of the air pollution permit, the water withdrawal permit and local zoning requirements.
Springfield, MA	**Palmer Renewable Energy**	38	Wood	Proposed in 2008 to burn biomass along with construction and demolition debris but now states it will burn only wood biomass. It has generated substantial public controversy as Springfield is designated by U.S. EPA and Massachusetts as an environmental justice community. Seeking an air pollution permit as a "non-major" stationary source for Prevention of Significant Deterioration (PSD) and New Source Review

[174] http://www.fibrowattusa.com/projects/maryland/
[175] http://biomassmagazine.com/articles/5527/maryland-governor-to-sign-bill-making-msw-renewable-source
[176] "Biomass Sustainability and Carbon Policy Study." *Manomet Center for Conservation Sciences*. 10 June, 2010. http://www.manomet.org/sites/manomet.org/files/Manomet_Biomass_Report_Full_LoRez.pdf

				(NSR). A previously issued special permit was revoked by the City Council in May 2011 due to substantial changes in the project.[177]
Greenfield, MA	**Pioneer Renewable Energy**	47	Wood	Among the challenges to the facility is a citizen led city-wide referendum in June 2010 to overturn the city's decision to sell sewer water to the biomass facility for cooling. 85% of citizens voting opposed the city's decision and the biomass facility.[178]
Atttleboro, MA	**ZE-Gen Inc.**		Industrial Waste	This $20 million project would utilize commercially un-tested gasification technology, burning 150 tons of toxic waste daily including railroad ties, telephone poles, non-recyclable plastics, carpets remnants and wooden pallets. Facing opposition for community groups and local politicians, this proposal was withdrawn in May 2011.[179]
Pittsfield, MA	**Tamarack Energy**	40	Wood	Proposal in preliminary stages.[180]

MICHIGAN

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
L'Anse, MI	**L'Anse Warden Electric**	80 MW	wood or co-fire with fossil fuel	20 MW expansion of a 60 MW plant that currently uses coal and oil. The project received an $11,690,566.00 ARRA 1603 grant on March 22, 2010.
Ottawa Country, MI	**West Michigan Co-Gen**	4 MW	poultry litter and animal waste	
MI	**Michigan Co-Gen**			Biomass-burning facility. [181]
Lansing, MI				Biomass-burning facility. [182]

[177] "City Council to Review Biomass Permit." *CBS 3 Springfield News.* 8 December, 2010. http://www.cbs3springfield.com/news/local/City-Council-to-Review-Biomass-Permit-111556234.html
[178] Concerned Citizens of Franklin County. www.greenfieldbiomass.info
[179] http://attleboro.patch.com/articles/attleboro-residents-to-ze-gen-not-in-my-backyard http://www.bizjournals.com/boston/real_estate/2011/05/ze-gen-drops-plan-for-attleboro-facility.html
[180] Issler, MacKenzie. "Feeling the Burn: Developer plans biomass power plant." *Greenfield Recorder*. http://www.recorder.com/story.cfm?id_no=5676106
[181] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[182] Ibid.

MINNESOTA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Two Harbors, MN[183]	**Hedstrom Lumber**	71 MW	Cogen, wood / natural gas.	Wants to add second wood fired boiler.[184]

MISSOURI

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Perryville, MO[185]	**LG Biomass**	32 MW	Wood	
Noel, MO	**Noel Renewable Energy Solutions**		Poultry litter & animal waste	

MONTANA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Thompson River, MT	**Thompson River Power**	Expansion (currently 16 MW)	coal co-fired with biomass	Qualified BCAP Conversion Facility. The company received a $6,465,081.00 ARRA 1603 grant on June 28, 2010.
Missoula, MT	**Nexterra Systems**			This proposed $16 million biomass facility at the University of Montana[186] received an $180,000 grant from the MT Department of Natural Resources and Conservation and the U.S. Forest Service. Local officials have expressed concern about air pollution, since the

[183] All Minnesota facilities. Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[184] Air Emission Permit No. 07500001-00. Hedstrum Lumber Company, Inc. 17 December, 1998. http://www.pca.state.mn.us/index.php/component/option,com_docman/task,doc_view/gid,1216
[185] All Missouri facilities. Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[186] Energy Overviews. 14 October, 2010. http://epoverviews.com/articles/visitor.php?keyword=Wood%20Biomass

				city has banned woodstoves.

NEBRASKA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Columbus, NE	**Archer Daniels Midland**	71 MW	Wood (secondary)[187]	

NEW HAMPSHIRE

In July 2010, Gestamp Biomass, a division of Gestamp Renewables, which operates facilities in 25 countries and in several Southern U.S. states, signed an agreement with Clean Power Development, LLC, (of Concord, NH) to develop biomass energy projects across the northeastern U.S. [188]

The agreement covers ME, NH, VT, MA, RI, CT, NY, PA and anticipates developing as much as 180 megawatts of new biomass energy while "improving the region's carbon footprint." In February 2010, petitions to intervene by Concord Steam, the Town of Winchester, State Representatives Borden, Read, Spang and McClammer, Robert Perry, Carbon Action Alliance and Sierra Club in CPD's attempt to negotiate with the NH's public utility siting board were denied after CPD filed a complaint against the board upon its alleged refusal to negotiate.[189]

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Berlin, NH	**Laidlaw Berlin BioPower**	70	Wood	Proposed by NY based Laidlaw Energy Group (affiliated with the waste disposal corporation), the plant faces

[187] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[188] Gestamp Biomass http://www.cleanpowerdevelopment.us/documents/release19July2010-gestamp.pdf
[189] The State of New Hampshire Public Utilities Commission. http://www.puc.nh.gov/Regulatory/CaseFile/2009/09-067/ORDERS/09-067%202010-02-24%20Order%20No%2025,075%20Order%20Commencing%20Adjudicative%20Proceeding.PDF

				opposition from competitors alleging there is an inadequate wood supply.[190] The Center for Biological Diversity and New Hampshire Sierra Club filed comments on the air permit and/or siting approval in October 2010[191]. The facility plans to chip whole trees, and is located near the White Mountain National Forest. NH has an RPS and the company will sell electricity to the grid.[192]
Berlin, NH	**Power Development, LLC / Gestamp Biomass**	29	Wood	This project is proposed as a combined heat and power installation.[193]
Winchester, NH	**Clean Power Development / Gestamp Biomass** [194]	20	Wood	

NEW JERSEY

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
South Kearny, NJ	**RTC Properties**	14 MW	Wood	
Jersey City, NJ	**Jefferson Renewable Energy Trash Incinerator**		Municipal Waste (primary); Wood (secondary)	

NEW YORK

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES

[190] "Biomass Industry Fights New Hampshire Biomass Incinerator." *Biomass Busters Newsletter*. December 2010. New England Power Generators Association, Inc., and the City of Berlin filed petitions for intervention in the power purchase agreement proceeding. They challenged the agreement because it allows Laidlaw to pay more for wood fuel. The Laidlaw facility received its air permit in the summer of 2010 and siting approval. Clean Power Development, LLC, has also proposed a 29-MW biomass combustion facility for Berlin, NH and a facility for Winchester, NH.
[191] Bioenergy Insight. http://www.bioenergy-news.com/index.php?/Industry-News?item_id=2637
[192] Laidlaw Energy. http://www.laidlawenergy.com/berlin-nh-project.html
[193] Gestamp Biomass. http://www.cleanpowerdevelopment.us/documents/release19July2010-gestamp.pdf
[194] Davis, Richie. "Winchester N.H. May Get Biomass Plant." *Greenfield Recorder*. 17 August, 2010.

Montgomery, NY	**Taylor Biomass**	20 MW	Municipal Trash	Received a $100 million loan guarantee from the U.S. DOE.[195] Although the facility plans to burn trash, it is being promoted as "biomass." Opponents include Citizens' Environmental Coalition in Albany, New York. The company claims that by burning biomass it will decrease "air pollutants" by 70 tons annually when compared to burning fossil fuels.[196] The company also has a project under construction in Canada.
Rome, NY	**Griffiss Utility Services Biomass**	9.6 MW	Wood	This cogeneration generation facility was approved by the NY State Public Services to provide a Rome business park with energy. GUSB claims that the facility will provide about 75% of the park's heating and electricity needs and reduce CO2 emissions by 46,000 tons annually.[197]
Jamestown, NY	**Jamestown Oxy-Coal Project**	43 MW	Wood co-firing with coal.	Proposed carbon dioxide capture and storage project. [198] [199]

NORTH CAROLINA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Rowan County, NC	**Buck Power, Duke Energy**		Wood co-firing with coal	Plans to burn whole trees are being challenged by Environmental Defense Fund and others.[200] Oct 2010 Duke got approval from regulators to burn whole trees.
Sampson County, NC	**Fibrowatt Sampson County**	55 MW	Mix of poultry litter and wood waste[201]	
Spring Hope, NC	**ALP Generation**,	45-75 MW	Wood	ALP has submitted plans to the NC Utilities Commission

[195] Green Innovations. http://www.cleantechny.blogspot.com
[196] "Environmental Benefits." Taylor Biomass Energy. 13 February, 2011. :http://picasaweb.google.com/lh/photo/ FgU1it0gw60ZhCJWv8iaAg?feat=directlin
[197] Energy Overviews. http://epoverviews.com/articles/visitor.php?keyword=Co-Generation
[198] "Proposed biomass energy facilities in the Northeast and nearby Canada." The Wilderness Society. 6 October, 2010. http://wilderness.org/files/Wood-Biomass-Energy-Facilities-in-Northeast-map.pdf
[199] Stenger, Harvey G. "Jamestown coal plant project is a good investment." Buffalo News. 28 July 2009. http://www.allbusiness.com/energy-utilities/utilities-industry-electric-power/14624221-1.html
[200] Downey, John. "Duke Energy Cool to Burning Trees in Ohio." *Charlotte Business Journal.* 6 December, 2010. http://www.bizjournals.com/charlotte/blog/power_city/2010/12/duke-energy-cool-to-burning-trees-in.html
[201] Email from David Mickey of Blue Ridge Environmental Defense League in North Carolina. 18 February, 2011.

	LLC			for permission to operate the $54 million facility.[202]
Hertford County, NC	**Hertford Renewable Energy**	50 MW	Wood burning	Hertford Renewable Energy is a subsidiary of Decker Energy International, Inc. Decker has developed six "renewable energy biomass facilities." Company claims solar energy is "not feasible" for the state. Requested assistance from Rural Utilities Service of USDA. [203]
Biscoe, NC (Montgomery County)	**Poultry Power / Progress Energy**	36 MW	Poultry litter	Progress signed a contract with Poultry Power to develop a $125 million biogas plant using poultry litter as fuel.[204]
Charlotte, NC	**ReVenture Park Incinerator**	10 MW	Municipal waste primary, wood supplemental.[205]	In August 2010, the governor signed a bill giving ReVenture triple credits under the state's Renewable Portfolio Standard. Energy Justice Network and Blue Ridge Environmental Defense League are among the groups opposing the facility. In May 2011, the plant faced major opposition from local residents, and has been denied using municipal waste for fuel, and is expected to cut output at least in half.[206]
Riegelwood, NC	**Sterling Planet / International Paper**	40-50MW	Wood scraps / Forest Waste	The $130-$160 million project would utilize wood scraps from the paper mills operations, as well as branches and trimmings from forest operations.[207]

OHIO

Eight early proposals to co-fire forest biomass with coal and one proposed biomass-dedicated facility, totaling 2,130-megawatts, are pending in Ohio. [208] If all of these co-firing and dedicated facilities started burning biomass, they would nearly double the biomass combustion capacity of the U.S and annually consume more than five times the growth of all forest in Ohio, public and private. Duke Energy, which proposed burning biomass at three of the existing power stations

[202] According to the managing director, contracts are in place for the wood supply to the plant, financing contracts for the project are ready to be signed and the company is negotiating with Progress Energy to purchase the power.
[203] Alternatives Evaluation and Site Selection Study for the Proposed Hertford Renewable Energy, LLC, Biomass Power Plant, Hertford County, North Carolina. Decker Energy International, Inc. May 2008.
[204] http://www.montgomeryherald.com/articles/2011/04/20/news/top_stories/doc4dade0022239d769573450.txt
[205] Henderson, Bruce. "House panels gives extra energy credits to ReVenture Park." *Charlotte Observer*. 30 June, 2010. http://www.charlotteobserver.com/2010/06/30/1533992/house-panel-gives-extra-energy.html
[206] http://www.bizjournals.com/charlotte/blog/going_green/2011/05/reventure-drops-county-deal.html?page=all
[207] http://www.starnewsonline.com/article/20090829/ARTICLES/908299946
[208] "Big Biomass Loses Steam in Ohio." *Biomass Busters*. January 2011.

along the Ohio River, cited cost as a reason for placing its projects on the back burner. FirstEnergy announced that converting its coal-fired Burger power plant into "biomass" would cost too much, and withdrew its renewables certification during a recent legal challenge at the Ohio Supreme Court. According to American Electric Power, which had recently proposed burning forest biomass at three facilities, the cost of burning biomass is not competitive enough with other renewable energy options.

At the same time, AEP released a report in December 2010, stating that it plans to generate 150 MW of biomass energy by 2018 and 466 MW by 2027. [209] The Ohio Environmental Protection Agency issued an air permit that would let Dayton Power and Light burn biomass at its Killen plant in Adams County, although the company has stated that it must first resolve several issues, including finding a reliable fuel source. [210]

The proposed South Point Biomass Generation plant in Lawrence County has yet to file for an air permit and may not be built. [211] South Point Biomass also was the only company willing to publicly disclose the source locations of its fuel, including Ohio, Kentucky and West Virginia. Six of these electricity-generating co-firing (with coal) biomass facilities, and the single biomass-dedicated facility, have received permits for Renewable Energy Credit approval from the Public Utilities Commission of Ohio (PUCO) [212] Two of the co-firing facilities have REC applications pending before the PUCO. Only the DP&L Killen facility has applied for an air permit. The issuance of the Killen permit is currently being litigated. Regional opposition is spearheaded by Buckeye Forest Council, Ohio Environmental Council, Sierra Club Ohio Chapter, and Ohio Consumers Council, which questioned whether biomass would be affordable.

OREGON

Proposals for new biomass facilities are strongly supported by the Governor. Groups involved in opposing facilities are Cascadia's Ecosystem Advocates, Oregon Toxics Alliance, and Save Our Rural Oregon.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES

[209] Supplement to the 2010 Long Term Forecast Report to the Public Utilities Commission of Ohio. Columbus Southern Power Company.21 December, 2010. https://docs.google.com/viewer?a=v&pid=explorer&chrome= true&srcid=0B7zrAtQjLhBGYWUyNWFhODQtYzllNy00ODdiLTk3YjEtYTgyYjIyMTI2Yzk1&hl=en
[210] Hunt, Spencer. "Plan to use wood at power plants now on back burner." The Columbus Dispatch. 5 December 2010. http://www.dispatch.com/live/content/local_news/stories/2010/12/05/plan-to-use-wood-now-on-back-burner.html?sid=101
[211] Email correspondence with Cheryl Johncox, Buckeye Forest Council. 18 Feb., 2011
[212] "Ohio Faces Biomass Onslaught." *Biomass Busters*. December 2010.

Klamath Falls, OR	**Northwest Energy Systems Company**	37 MW	Wood	This $130 million facility with burn wood from a nearby 600,000 acre lot. [213] Save Our Rural Oregon is challenging the proposal, based in part on the plan to sell the electricity to California. [214]
Klamath Falls, OR	**Northwest Energy Systems Company**	35 MW	Wood	Plans for a 542 MW gas facility are being restructured to propose a 35 MW wood-burning facility, located one mile from another proposed biomass facility. This plant is specifically being proposed to fulfill RPS requirements. [215]
Warm Springs, OR	**Northwest Energy Systems Company**	40 MW	Wood	Confederated Tribes of Warm Springs will provide 40 percent of the needed biomass.[216]
Eugene, OR	**University of Oregon**			Proposed as part of the University's climate action plan.
LaPine, OR	**Biogreen**	25 MW	Wood	

PENNSYLVANIA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Mt. Carmel Township, PA	**IntelliWatt Renewable Energy**	13 MW	Wood	

SOUTH CAROLINA

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Orange County, SC	**Orangeburg County Biomass**	35 MW	wood[217]	
Aiken, SC	**US DOE Savannah**	Expanding by as	wood[218]	

[213] http://www.columbian.com/news/2011/jun/07/s-ore-biomass-plant-nearing-approval/
[214] http://www.forest2market.com/f2m/us/f2m1/free/forest2fuel-archive/story/2011-Apr-BioPower
[215] http://www.heraldandnews.com/news/article_fc959326-9262-11e0-84a1-001cc4c03286.html
[216] http://www.forest2market.com/f2m/us/f2m1/free/forest2fuel-archive/story/2011-Apr-BioPower
[217] Proposed for John Matthews Industrial Park in Orangeburg, South Carolina. The company plans to invest about $98 million. Orangeburg County Council provided a "first reading" to an agreement that would give the company an option to buy the required land and hold a public hearing on the issue on April 19, 2010. Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[218] Energy Justice Network. http://www.energyjustice.net/map/nationalmap

	River Site (D Area)	much as 20 MW		
Williamston, SC	**Lee (Duke Energy)**		wood (including whole trees)	Duke Energy plans to burn whole trees to co-fire coal plants (Buck Power Plant in Rowan County, North Carolina, and Lee plant in Williamston, SC) were challenged by Southern Environmental Defense Center and the Environmental Defense Fund in Fall 2010. [219] The groups seek to reverse a ruling by the NC Utilities Commission that whole trees could be chipped and mixed with coal to help run the plants.[220]
Hartsville, SC	**Peregrine Biomass Development Company**	50 MW	wood[221]	
Florala/Lockhart, SC[222]	**Southeast Renewable Energy (SRE)**	15 MW	Wood waste, wood chips, energy crops	$55 million in capital costs, 16 full-time employees expected
TBD[223]	**Southeast Renewable Energy (SRE)**	15 MW	Wood waste, wood chips, energy crops	30-year Power Purchase Agreement signed with Santee Cooper. Expected to come online 2012/2013[224]
Dorchester County, SC[225]	**Southeast Renewable Energy (SRE)**	15 MW	Wood waste, wood chips, energy crops	30-year Power Purchase Agreement signed with Santee Cooper. Expected to come online 2012/2013
Kershaw County, SC[226]	**Southeast Renewable Energy (SRE)**	15 MW	Wood waste, wood chips, energy crops	30-year Power Purchase Agreement signed with Santee Cooper. Expected to come online 2012/2013

TENNESSEE

[219] Portillo, Ely. "Environmental Groups Appeal Wood-Burning Power Ruling." *Charlotte Observer*. 12 November, 2010. "The commission's decision allows utilities to cut and burn our state's forests, with no questions asked," said EDF wood biomass specialist Will McDow in a statement. "Giving unrestricted access to burn thousands of acres of natural forest is imprudent." http://www.charlotteobserver.com/2010/11/12/v-print/1831143/environmental-groups-appeal-wood.html
[220] Schwartz, Joe. "N.C. Utilities Commission Clears Way for Duke Energy to Blaze Whole Trees for Energy."
[221] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[222] http://www.andalusiastarnews.com/2010/10/12/sre-to-open-3-biomass-fuel-plants-in-south-carolina/
[223] Ibid.
[224] http://www.lowcountrybizsc.com/articles/982/
[225] Ibid.
[226] Ibid.

The Tennessee Valley Authority's (TVA's) Integrated Resource Plan is proposing another 460 MW of biomass power in its 20-year plan.[227] To accomplish this will require the equivalent of 6,000,000 acres of forests—there are 14,000,000 acres of forests in the Tennessee Valley.[228] This 460 MW will only provide 1/80th of current electricity demand and provide only a small portion of the 8-16,000 MW increase in demand during the 20-year period. Chip mills are also proposed in order to supply new coal facilities that will start co-firing with biomass. This new proposal comes two decades after TVA's last chip mill proposal was defeated by citizen involvement and an ESA ruling.[229]

Opponents are concerned that beetle kill will prompt the Forest Service and Bureau of Land Management to open up millions of acres of public forests to logging to supply biomass and co-firing facilities. The public comment deadline on the plan was November 8, 2010.

TEXAS

Texas is the state with the majority of, if not all, the proposed biomass facilities for the Southwest. These facilities are some of the largest proposed in the U.S. Texas provides a favorable regulatory climate for biomass, particularly since the Governor announced in December 2010 that the state will not implement the Clean Air Act regulations for greenhouse gases (as described in the "Tailoring Rule"), but rather will challenge the law in court. As a result, electrical generating facilities which use biomass combustion will potentially be able to emit large volumes of CO_2 and other greenhouse gases. On the other hand, the proposed ruling by the State's Public Utility Commission on the Texas legislature's Goal for Renewable Energy (Project 35792; the non-wind carve out creating a tiered Renewable Energy Credit system) purportedly concerns biomass energy companies who want more outright incentives.[230]

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Sacul, TX	**Nacogdoches Power LLC**	100 MW	Wood (may also still plan to burn natural gas).[231]	The facility will reportedly use scrap timber and forest residue from Texas logging operations by Angelina Fuels. [232] American Renewables is developing this $300 million facility through its subsidiary,[233] Nacogdoches Power, LLC. Nagodoches was recently

[227] "Integrated Resource Plan." Tennessee Valley Authority. http://www.tva.gov/environment/reports/irp/index.htm
[228] Report from citizen, Denny Haldeman, Chattanooga, TN.
[229] Haldeman, Denny. "TVA's Plan for Deforestation Does Not Involve Long Term Planning." *The Chattanoogan*. 2 October, 2010. http://www.chattanoogan.com/articles/article_186845.asp
[230] Aspen Power's 50 MW Biomass Green Power Generator." http://www.youtube.com/watch?v=KeRWuGH5SRE
[231] Energy Justice Network. http://www.energyjustice.net/map/nationalmap

				acquired by Southern Power (Southern Company)[234] Austin Energy signed a 20-year PPA at a projected cost of $2.3 billion. The facility is expected to be complete by 2014.[235] Nacogdoches has acquired necessary environmental permits, water permits, construction contracts, and biomass supply contracts. County commissioners approved tax abatement. Cushing Residents Against Biomass are opposing this facility.[236]
Lufkin, TX	**Aspen Power**	57 MW	Wood[237]	This was the first biomass facility in TX,[238] expecting to have full operation by June 2011, costing an estimated $107-112 million.[239] Litigation and poor weather conditions considerably slowed progress in 2009.[240] An air quality permit was suspended by the TX Commission on Environmental Quality in March 2009. That permit was re-issued on Oct. 26, 2009, authorizing construction and operation. The first test burn was planned for August 2010 with commercial operations starting that November.[241] Residents expressed concerns with the health of students at three schools in the area, and elderly citizens in nearby senior living facilities. The company reportedly installed upgraded pollution controls, but Aspen Power's air permit has been revoked pending the results of a continuing investigation by the TX officials.[242] The Travis County District Attorney's office is pressing forgery charges before a grand jury. The EPA Agency halted construction, although Aspen Power appealed that decision. A video suggests whole tree burning at the facility while making claims of "carbon neutrality."[243] The TX Department of Agriculture provided a $750,000 grant.[244]

[232] The facility is anticipated to provide for about 7 percent of Austin's electricity needs. A company spokesperson has admitted that the economy is making things difficult in terms of lending, but that plans are moving forward.
[233] Also developing the 100 MW facility in Gainesville, FL in a similar arrangement in which the facility has an owner/operator arrangement with a municipality
[234] *Energy Overviews*. 13 October, 2009.
[235] Austin Energy. http://www.austinenergy.com/About%20Us/Company%20Profile/nacogdochesBiomassProposal.htm
[236] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[237] The Akeida Capital Management, LLC, an investment firm, has closed on a $14.1 million secured financing of Aspen Power's 57-MW waste wood-fired biomass electric generation combustion facility in Lufkin
[238] Energy Overviews. 4 August, 2010.
[239] http://lufkindailynews.com/news/local/article_c9537cf2-8421-11e0-9948-001cc4c002e0.html
[240] Lufkin Daily News, 4 March, 2010.
[241] The Texas Department gave a $750,000 grant from the Texas Capital Fund to the city of Lufkin to be used for road, parking, engineering and administrative services related to the combustion facility.
[242] Phillips, Cristel. "Construction halted: Aspen power denied air quality permit."*KTRE*. 30 September, 2009. http://www.ktre.com/Global/story.asp?S=11011278
[243] Aspen Power's 50 MW Biomass Green Power Generator." http://www.youtube.com/watch?v=KeRWuGH5SRE
[244] http://lufkindailynews.com/news/local/article_e66950ba-9664-11df-8016-001cc4c002e0.html

Woodville, TX	**North American Procurement Company**	50 MW	Wood	East Texas Electrical Cooperative finalized a deal with North American Procurement Company for the development of this facility.[245] North American Procurement will be the sole provider of woody biomass for the combustion facility, to be constructed adjacent to the company's existing operations. The company has also mentioned the towns of Lindale and Greenville in Texas as other possible biomass projects.
Santa Rosa, TX	**Rio Grande Valley Sugar Growers**	7.5 MW	Agricultural waste / energy crops (primary), natural gas (secondary)[246]	This 7.5 MW facility received a $10,232,261 ARRA 1603 grant on 21 September, 2009.

VERMONT

In late 2010, citizens from Massachusetts and Vermont formed Bennington-Berkshire Citizens' Coalition and Southern Vermont Citizens for Environmental Conservation & Sustainable Energy (SVCECSE) in response to the Beaver Wood Energy proposals.[247] In December, 2010, the state denied the company's request for a "partial permit" which it alleged it needed to qualify for a grant of about $54 million under ARRA.[248] According to news reports, the permit application lacked basic air or water impact information. The Pownal project involves both wood pellet production and electricity, complicating permitting. The public service utility board is withholding its decision on the permit application until its authority over wood pellet manufacturing is resolved.[249]

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Pownal, VT	**Beaver Wood Energy**	29.5	Wood	Project suspended by developer, March 2011.
Fairhaven, VT	**Beaver Wood Energy**	29.5	Wood	
Montepelier, VT	**Montpelier**	1.25 MW	Wood	This combined heat and power project may not be built as

[245] Energy Overviews. 3 August, 2009.
[246] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[247] Bennington Berkshire Citizens Coalition. http://benningtonberkshirecc.org
[248] Vermont Public Service Board. http://psb.vermont.gov/sites/psb/files/orders/2010/76787679OrderrePartial Construction.pdf.
[249] Bennington Banner. http://www.benningtonbanner.com/ci_16983048

	Community Renewable Energy			construction plans were discovered to be for a larger facility than necessary and the State decided not to put a bond vote on the ballot to fund construction.[250]

VIRGINA

One facility in Virginia proposes to use wood waste, while several are proposing to use wood to co-fire with coal.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Virginia City, VA	**Virginia City Hybrid Energy Center *(Wise County Coal Plant)***	585 MW (coal), up to 20% biomass (117 MW)	Wood co-firing with coal	Facility is facing local opposition from Sierra Club groups, Chesapeake Climate Action Network and Southern Environmental Law Center. [251]
Dendron, VA	**Cypress Creek (Surry County Coal Plant)**	750-1,000 MW coal,[252] [253] (2%) Wood[254] 15 MW	Wood co-firing with coal	
Radford, VA	**American Cogeneration**, LLC	<1 MW[255] by gasification	Utility poles, railroad ties.[256]	
Hurt, VA	**Dominion Pittsylvania**	80 MW	Wood chips.[257]	Would be one of the largest biomass power incinerators on east coast.
Altavista, VA	**Dominion Virgina Power**	50 MW	Waste wood	Converting coal boilers to waste wood from logging[258]
Hopewell, VA	**Dominion Virgina Power**	50 MW	Waste wood	Converting coal boilers to waste wood from logging[259]

[250] Moats, Thatcher. "Biomass plant hits roadblock." The Barre Montpelier Times Argus. 27, December, 2010.
[251] "Wise County Plant." *Sourcewatch*. http://www.sourcewatch.org/index.php?title=Wise_County_Plant
[252] Dominion. http://www.dom.com/about/stations/fossil/virginia-city-hybrid-energy-center.jsp
[253] Project No Project." *US Chamber of Commerce*. http://pnp.uschamber.com/2009/03/cypress-creek-dendron-va.html#more
[254] "Surry County Coal Plant Will Leave Virginia in the Dust.". http://flathatnews.com/ content/69771/surry-county-coal-plant-will-leave-virginia-dust-and-fly-ash
[255] American Cogeneration, LLC. http://acccogeneration.com/wordpress/
[256] Energy Justice Network. http://www.energyjustice.net/map/nationalmap
[257] Dominion, http://www.dom.com/about/stations/renewable/biomass-stations.jsp
[258] http://www.forest2market.com/f2m/us/f2m1/free/forest2fuel-archive/story/2011-Apr-BioPower
[259] Ibid.

Southhampton, VA	**Dominion Virgina Power**	50 MW	Waste wood	Converting coal boilers to waste wood from logging[260]
VA (Rockingham or Augusta county)	**Fibrowatt**	40-55 MW	Poultry litter	After being defeated in Page County, the company is pressing state officials to explore options in other counties.[261]

WASHINGTON

Washington has the largest wood-only facility receiving ARRA 1603 funding, the Simpson Kraft facility in Tacoma. A $17,368,882 ARRA Section 1603 grant was awarded on 20 November, 2009.

At least five grassroots groups are opposing biomass facilities in Washington using legal challenges and advocacy at the local and state levels.[262] [263] There are challenges to the Nippon facility in Port Angeles and the air pollution permit for the Port Townsend project being proposed by Sterling Energy Assets (see also, Valdosta, GA). In response to a biomass facility in Olympia proposed to be sited on the Evergreen College campus, on December 2010, the Thurston County Commissioners imposed a one year moratorium on approvals for new biomass power facilities. Opponents of biomass projects include Concerned Citizens of Mason County (opposing two facilities in Shelton WA, including one proposed by ADAGE), No Biomass Burn of Seattle, Port Townsend AirWatchers, World Temperate Rainforest Network the Olympic Forest Coalition, the Olympic Environmental Council, the Center for Environmental Law and Policy of Spokane, and the Cascade Chapter of the Sierra Club.

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Port Townsend, WA	**Port Townsend Paper/PT Holdings**	25 MW (expansion)	Wood	An existing paper mill is adding 25 MW to sell to the grid. Five citizens groups appealed the air permit issued by the State and are challenging the state's failure to require an environmental impact statement. The mill is owned by international investors including Thale, and the biomass

[260] Ibid.
[261] http://hburgnews.com/2011/05/04/state-agencies-weighing-benefits-of-burning-poultry-litter-to-generate-electricity/
[262] Gates, Janine. "Thurston County Commissioners Adopt Biomass Facility Moratorium." *Little Hollywood*. 21 December, 2010. http://janineslittlehollywood.blogspot.com/2010/12/thurston-county-commissioners-adopt.html ; Port Townshend Air Watchers. http://airwatchers.ning.com
[263] Five Environmental Groups Appeal Port Townshend Paper Incinerator Permit." *Seattle Indymedia*. 24 November, 2010. http://seattle.indymedia.org/features/environment/82-5-environmental-groups-appeal-port-townsend-paper-incinerator-permit

				project is a joint venture with Sterling Energy Assets.
Port Angeles, WA	**Nippon Paper Industries**	20 MW	Wood	This co-generation project has a capital cost of $71 million. The plant would burn waste wood known as hog fuel.[264]
Forks, WA	**Quilayeute School**			
Ellensburg, WA	**Central WA University**			
Shelton WA	**Solomon Renewable Energy**	14 MW (minimum)	Wood	
Seattle, WA	**Simpson Lumber Company** / **Seattle Steam**	8 MW	Urban waste wood	This plant had difficulty obtaining fuel in 2010, with multiple periods of burning natural gas. A new 75 MW plant was announced as biomass combustion, but current information cites natural gas as likely.
Longview, WA	**Northwest Renewables**	24 MW	Wood	
Longview, WA	**Mint Farm Industrial Park**	24 MW	Wood[265]	ICM, Inc. is the developer
Longview, WA	**Longview Fibre**	65 MW	Wood	
Longview, WA	**Swanson Bark**	25 MW	Wood	

WISCONSIN

LOCATION	FACILITY NAME	GENERATING CAPACITY	FUEL TYPE	NOTES
Rothschild, WI, Marathon County	**WE Energies / Domtar Corp. Paper Mill**	50 MW	Wood	This is a proposed cogeneration project at the Domtar Mill.[266] The facility has support from city officials, and an air permit issued. Save Our Air Resources and citizens have raised concerns about the impact of air emissions from the

[264] Dickerson, Paige. "Protest groups mulling further appeal of Nippon's biomass permit." *Peninsula Daily News*. 7 December, 2010. http://www.peninsuladailynews.com/article/20101208/news/312089990/protest-groups-mulling-further-appeal-of-nippons-biomass-permit

[265] "Biomass plan energizes Mint Farm, region." Daily News. 31 Aug., 2009. http://tdn.com/news/opinion/editorial/ article_73007d71-dcd6-5dbe-bd35-c596ad7962cd.html

[266] Content, Thomas. "Biomass power plant at Juncture." *Milwaukee-Wisconsin Journal Sentinel.* 27 November, 2010. http://www.jsonline.com/business/110890709.html

				facility and fuel supply trucks, since it is across the street from the Rothschild Elementary School, near five additional schools, and adjacent homes.[267]
Madison, WI	**Madison's Charter Street Power**		Conversion to biomass	Governor Walker withdrew approval for this facility in January, 2011, citing excessive costs to taxpayers. Administration officials said the changes will save taxpayers $100 million in construction costs.[268]
Cassville, WI	**Nelson Dewey Generating Station** *(Wisconsin Power & Light Alliant Energy)*	200 MW	Biomass / coal co-firing in 50:50 mix	Granted permission by Wisconsin DNR to burn 50% wood chips, agricultural pellets and native grasses over a twelve month period pending results of test burns in 2010.[269]

[267] Saving Our Air Resources. http://www.nobiomass.org/info.html
[268] "Charter Street power plant switches from biomass to natural gas." *Channel 3000*. 21 January, 2011. http://www.channel3000.com/news/26573483/detail.html
[269] "Wisconsin power plant approved for biomass co-firing tests." *Brighter Energy.org*. 4 Jan., 2011. http://www.brighterenergy.org/21564/news/bioenergy/wisconsin-power-plant-approved-for-biomass-co-firing-tests/

BIOMASS ACCOUNTABILITY PROJECT

Appendix D:

Letters from Biomass Opponents To Congress

Anti-Biomass Incineration and Forest Protection Campaign

July 29, 2010

President Obama
The White House

Senator Harry Reid
Majority Leader, United States Senate

Representative Nancy Pelosi
Speaker of the House, United States House of Representatives

Re: Request to Exclude Dirty Biomass Incinerators from Renewable Electricity Standard (RES), Farm, and Energy Bills

Dear President Obama, Majority Leader Reid, and Speaker Pelosi,

We write to express our deep concern about the inclusion of dirty biomass and garbage burning incinerators in the Renewable Electricity Standard (RES) of proposed energy legislation. We are also concerned about industry efforts to expand the definition of "biomass" in the Farm Bill and Energy Independence and Security Acts.[270] We similarly oppose industry efforts to avoid EPA

[270] Our position on the RES differs from that of the coalition of business leaders and environmental groups including Audubon, Environmental Defense Fund, and the Natural Resources Defense Council that wrote Senator Reid on July 15, 2010 urging a 25% RES by 2025. That coalition failed to seek an exclusion of biomass incinerators from the RES, and instead seeks only vague provisions for "sustainable biomass sourcing." Such biomass "protections" will not protect the public health and the environment.

regulation under the Clean Air Act greenhouse gas "Tailoring Rule" and proposed rules to reduce hazardous air pollution emissions.[271]

Currently, the United States already gets 50% of its so-called "renewable energy" (electricity) from dirty biomass incinerators that make people sick, emit toxic chemicals into our air, dry up and pollute our rivers, and cause our forests to be cut down. Instead of promoting more tree and garbage burning incinerators in the RES and other proposed legislation, we urge Congress to direct our taxpayer and ratepayer funds to truly clean and green energy – solar, wind, and ocean energy – not polluting incinerators. Incinerators are a step backward for our country, not the way to a renewable "clean and green" future.

The evidence is clear, from industry reports and permits, that so called "renewable energy" biomass and garbage incinerators emit a lethal mix of toxic chemicals to our air and water – this includes deadly particulates, such as PM 2.5 and nanoparticulates, mercury, lead, dioxins and greenhouse gases. Leading medical organizations including the American Lung Association, Massachusetts Medical Society, North Carolina Academy of Family Physicians, the Florida Medical Association and Physicians for Social Responsibility oppose incentives for biomass incinerators because they present an "unacceptable health risk".[272] An RES or other legislation to further subsidize these incinerators will lock in new and continuing sources of smokestack emissions for the next thirty years.

Burning biomass is not "carbon neutral" in any timeframe that is meaningful to climate change. Our nation's forests are natural "carbon sinks" and our best defense against the climate crisis. When forests are cut for biomass incinerators, they will not re-sequester the amount of carbon released for decades or centuries, if at all. Groundbreaking scientific reports issued in June 2010 by the Manomet Center for Conservation Science and Environmental Working Group conclusively show that biomass incineration using forests as fuel will undermine efforts to curb carbon emissions. [273] The destructive impacts on forest biological diversity have been documented from Oregon to Massachusetts. Burning garbage and wood for electricity is terribly inefficient; biomass incinerators are about 25% efficient – that is, for every 100 trees burned, only 25 are converted into energy. Finally, available data shows biomass burning smokestacks emit more carbon dioxide per unit of energy than coal, oil and natural gas, and in some cases up to 50% more carbon dioxide than coal, per unit of energy.[274]

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[271] The ACELA RES and the Securing America's Future with Energy and Sustainable Technologies Act (SAFEST), qualify burning forests and garbage as "renewable" and so-called "clean and green" electricity. In hearings before the Senate Committee on Agriculture, Nutrition and Forestry on July 21, 2010, industry representatives urged the committee to provide further preferential treatment for biomass incinerators under panoply of legislative initiatives and regulatory programs.

[272] http://www.stopspewingcarbon.com/images/content/newsletter/BiomassBusters-July2010.pdf?ml=4&mlt=system&tmpl=component ; http://www.massmed.org/AM/Template.cfm?Section=Search8&template=/CM/HTMLDisplay.cfm&ContentID=33653

[273] "Biomass Sustainability and Carbon Policy Study," Manomet Center for Conservation Sciences, June 2010; "Clearcut Disaster: Carbon Loophole Threatens U.S. Forests," Environmental Working Group, June 2010.

[274] http://nobiomassburning.org/docs/Plant_Data_Chart_2.pdf ; www.maforests.org ; www.massenvironmentalenergy.org

In the face of the new science showing that cutting down forests and burning them in biomass incinerators makes climate change worse, on July 7, 2010 Massachusetts Secretary of Energy and Environmental Affairs announced that the state's Department of Energy Resources will proceed with regulations to exclude commercial electricity-only biomass incinerators from the state renewable portfolio standard. [275] This directive followed years of citizen opposition to so called "clean and green" biomass incinerator proposals, culminating with a ballot question to eliminate ratepayer subsidies. Americans understand that biomass and garbage incinerators have destructive impacts on their health, their communities and the environment, and new incinerator proposals are increasingly viewed as politically infeasible in cities and towns across the country.[276] Similarly, national legislative and regulatory efforts to promote biomass incinerators are neither legally nor scientifically defensible. The Massachusetts decision is an important bellwether for Congress, both politically and scientifically.

Incinerators are a poor job creation vehicle and do little to support rural economies. First, we must weigh industry speculation about potential job benefits against the certainty that toxic air emissions from incinerators drive up health care costs by causing diseases such as asthma, COPD, heart disease, cancer, and premature death. Second, industry documents show that the typical 50 megawatt biomass electricity incinerator creates only twenty permanent jobs. Third, these few jobs come at a tremendous cost to the American taxpayer: the typical biomass incinerator is eligible for a cash grant of one third of its capital costs in the form of an American Reinvestment and Recovery Act – that's 3.5 million dollars spent for each of the twenty permanent jobs. These taxpayer funds can be used in a more fiscally responsible manner to create far more than twenty jobs. Fourth, the sweeping, unsubstantiated industry assertions about "job creation" wholly ignore the societal costs to local communities burdened with incinerators: including the noise impacts from a 24/7/365 operation with at least two hundred daily diesel truck trips, and pollution of our air, water and destruction of our forests.

With its massive taxpayer and ratepayer subsidies, biomass and garbage burning for electricity is a highly lucrative industry. ARRA cash grants are being given to international joint ventures such as Iberdrola and ADAGE. Very little of the public funds spent on incinerators actually goes to American workers. The global incinerator industry does not need our "clean energy" subsidies. This is a profoundly poor use of taxpayer money and is contrary to the interests of the American people.

Finally, incinerators are not the answer to "energy independence" as industry argues. Climate change has national security impacts and subsidizing incinerators that make climate change worse undermines national security. Nor does the biomass industry acknowledge that biomass incinerators are heavily dependent on foreign oil to operate the heavy equipment used to extract wood from forests, chip trees, and operate diesel trucks to get the biomass to the incinerators. In addition, tree plantations and biomass crop production relies on imported fossil fuel energy in the form of nitrogen fertilizer[277], undermining claims that biomass burning increases y independence.

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[275] www.stopspewingcarbon.org

[276] Biomass incinerators also face fierce opposition in Indiana, www.scottsburgbiomass.info , Florida, www.floridiansagainstincineratorsindisguise.com , Ohio, Washington, Oregon, and Michigan, for example.

[277] Between 1991 and 2008, U.S. nitrogen fertilizer imports tripled from 14% to 42%. See http://minerals.usgs.gov/minerals/pubs/commodity/nitrogen/mcs-2010-nitro.pdf and http://minerals.usgs.gov/minerals/pubs/commodity/nitrogen/

As EPA Administrator Lisa Jackson said earlier this year,

> *"There is no denying our responsibility to protect the planet for our children and grandchildren. It's long past time we unleashed our American ingenuity and started building the efficient, prosperous clean energy economy of the future."* [278]

America cannot achieve this goal by building more tree and garbage incinerators. We urge you to put the health, economic and environmental interests of American citizens first and to exclude biomass and garbage burning incinerators from any RES and limit further expansion under other federal legislation.

Signed,

Arise for Social Justice (MA)
Biofuelwatch
Blue Ridge Environmental Defense Fund
Buckeye Forest Council (OH)
Cascadia's Ecosystem Advocates (OR)
Center for Sustainable Living (IN) Center for Biological Diversity
Citizens' Alliance for Clean Healthy Economy (NC)
Coalition Against Chemical Trespass (FL)
Concerned Citizens of Crawford County (IN)
Concerned Citizens of Orange County (IN)
Concerned Citizens of Florida (FL)
Concerned Citizens of Franklin County (MA)
Concerned Citizens of Gadsden County, Inc. (FL)
Concerned Citizens of Russell (MA)
Concerned Citizens of Scott County (IN)
Dogwood Alliance
Earth Circle Conservation and Recycling (MA)
Energy Justice Network
Environmental Alliance of North Florida
Floridians Against Incinerators in Disguise
Florida League of Conservation Voters
Friends of the Fenholloway River (FL)

[278] http://www.nytimes.com/gwire/2010/05/13/13greenwire-epa-issues-final-tailoring-rule-for-greenhouse-32021.html

Friends of Robinson State Park (MA)
Friends of the Earth
Global Exchange
Global Justice Ecology Project
Green Berkshires, Inc.
Green Delaware
Green Press Initiative
Gulf Oil Spill Remediation Conference (International Citizens' Initiative)
HOPE (Help Our Polluted Environment) in Taylor County, FL
Healthcare Professionals for Clean Environment (FL)
Heartwood
Institute for Local Self Reliance
Massachusetts Forest and Park Friends Network
Massachusetts Forest Watch
Native Forest Council
No Biomass Burn (WA)
Person County People Rising in Defense of Ecology (NC)
Protect Biodiversity in Public Forests
Real Majority Project of the Hudson Valley (NY)
RESTORE: The North Woods (ME)
Save America's Forests
Sequoia ForestKeeper
Saving Our Air Resource (MI)
Sound Resource Management
Southwest Ohio Green PAC
Stop Spewing Carbon Campaign (MA) Stop Toxic Incineration in Springfield (MA)
Sustain Charlotte (NC)
Sustainable Energy & Economy Network, Institute for Policy Studies
The Biomass Accountability Project
Texas Campaign for the Environment
World Temperate Rainforest Network

CC:

Secretary of Agriculture Thomas Vilsack
Secretary of Energy Steven Chu
Secretary of Treasury Timothy Geithner

Lisa Jackson, Administrator, U.S. EPA

Senator John Kerry, Chair, Senate Committee on Foreign Relations

Senator Joseph Lieberman, Chair, Homeland Security and Governmental Affairs

Senator Jeff Bingaman, Chair, Energy and Natural Resources Committee

Senator Amy Klobuchar, Committee on Agriculture, Nutrition and Forestry and Energy and Natural Resources Committee, Subcommittee on Children's Health

Representative Henry Waxman, Chair, Energy and Commerce Committee
Representative Edward Markey, Chair, Select Committee on Energy Independence and Global Warming

Members of the U.S. Senate
Members of the U.S. House of Representatives