Taxpayer Subsidies for Biomass in the Federal Farm Bill

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For years, proponents of bioenergy and biofuels promised that the industry would help reduce U.S. dependence on fossil fuels, decrease greenhouse gas (GHG) emissions, and spur rural economic development. They also promised that eventually, the industry would move away from food-based feedstocks toward more sustainable, next-generation biomass sources. Biomass is defined "as organic matter that can be converted into energy."[1] Proponents hoped that vehicles would one day run on advanced biofuels and power facilities would eventually be fueled by agricultural residues, wood waste, algae, and perennial grasses. But even with a maze of taxpayer supports propping up the industry, the next generation of biofuels and bioenergy has failed to meet its lofty expectations. Meanwhile, the mature corn ethanol industry has dominated the renewable fuel market, partially due to thirty years of subsidies, tax breaks, mandates, and other taxpayer supports.

Taxpayer subsidies and mandates for renewable energy derived from biomass originate in several different pieces of legislation and are administered by various federal agencies, including the Departments of Energy (DOE) and Agriculture (USDA) and Environmental Protection Agency (EPA). One of the primary coffers for biomass subsidies is the federal farm bill's energy title. The farm bill, renewed approximately every five years, is a wide ranging piece of legislation that funds everything from nutrition assistance programs and broadband internet to agricultural subsidies for the production of crops such as corn and soybeans. More specifically, the energy title of the farm bill, first introduced in 2002, provides grants, loans, and other subsidies to energy efficiency, biofuels, and bioenergy (heat and power) projects. In total, the 2008 farm bill energy title's 13 major programs were projected to cost taxpayers $1.1 billion over five years (FY08-12).[2] Instead, the programs spent taxpayer dollars on the mature corn ethanol industry, supported biomass sources with numerous unintended consequences, and even paid for updates to farmers' irrigation equipment and grain dryers. Here, we focus on subsidies to the woody biomass industry.

Types of Biomass Qualifying for Federal Subsidies

Determining which types of biomass are eligible for federal mandates, energy title subsidies, and other taxpayer supports has been a controversial topic, particularly within the last decade. Not all forms of biomass are created equal since the following characteristics can differ: cost-effectiveness, energy density, land use, need for fossil-based inputs in the production cycle, competition with other food or industrial uses, GHG emissions, likelihood of becoming an invasive species, etc. The term "biomass" was first defined in federal legislation in 1980, but it was not until the 2007 energy bill and the 2008 farm bill that the two most widely used biomass definitions were solidified in federal law.[3] Most taxpayer subsidies for biomass are reliant on these latter two definitions.

In the energy title of the farm bill, renewable biomass is defined as the following[4]:

- Materials, pre-commercial thinnings, or invasive species from National Forest System land and public lands which are:

    - Byproducts of preventative treatments that are removed to reduce hazardous fuels, reduce or contain disease, or restore ecosystem health;
    - Not otherwise used for higher-value products; and
    - Harvested in accordance with applicable law, land management plans, and old-growth maintenance, restoration, and management guidelines in the Healthy Forests Restoration Act.
- Or, any organic matter that is available on a renewable or recurring basis from non-Federal land or land belonging to an Indian or Indian tribe, including:
    - Renewable plant material like feed grains [such as corn or soybeans], other agricultural commodities, other plants and trees, and algae; or
    - Waste material like crop residue, other vegetative waste material (including wood waste and wood residues), animal waste and byproducts (including fats, oil, greases, and manure), and food and yard waste.

This definition dictates which forms of biomass are eligible for the various energy title programs, and thus millions of dollars in taxpayer subsidies. Note that the farm bill's definition of which types of biomass can qualify for subsidies differs from the 2007 energy bill's definition which dictates types of biomass that qualify for the federal Renewable Fuel Standard (RFS) mandate. The RFS requires 36 billion gallons of renewable fuel, including 15 billion gallons of corn ethanol, to be produced by 2022. The 2007 energy bill does not allow woody biomass from federal lands and crops from forested lands to qualify for RFS production volumes, but since the farm bill definition is less strict, woody biomass is eligible for various grants and loan guarantees in both energy and rural development programs.

Woody Biomass Subsidies in the Farm Bill Energy and Rural Development Titles

The eight energy title programs and two rural development programs supporting woody biomass, in addition to other forms of renewable energy, include the following[5]:

Table 1: Woody Biomass Subsidies in Farm Bill Energy and Rural Development Title Programs				
Farm Bill Title	**Program Name**	**Description**	**How Woody Biomass Receives Funding through Each Program**	**Woody Biomass Subsidies, 2009-13**
Energy Title Programs	**Biorefinery Assistance Program**	Grants and loan guarantees for advanced biofuels and heat and power facilities	Loan guarantees for facilities using woody biomass, in addition to other energy feedstocks; some loans have been finalized while others are conditional or for companies that failed (such as Range Fuels)	$355 million
	Biomass Research and Development Initiative	Grants for research, development, and demonstration projects for biofuels and biobased chemicals and products	Several companies and universities received research and development cost-share funds to analyze woody biomass as a feedstock in biofuels and bioenergy production	$23.75 million
	Bioenergy Program for Advanced Biofuels	Payments to advanced biofuels facilities and their feedstock suppliers to expand annual production	Wood pellet companies received payments for bioenergy and biofuels use	$3.8 million
	Repowering Assistance Program	Reimbursements for biorefineries to replace fossil fuel power sources with biomass (like wood chips, municipal solid waste, or perennial grasses)	Corn ethanol facility received payment to install a boiler that is powered by wood and other biomass sources	$1.9 million
	Rural Energy for America Program (REAP)	Grants and loan guarantees for rural energy efficiency and renewable energy projects, including solar, wind, hydropower, geothermal, and biomass	Wood pellet mills, hardwood floor companies, and others receive grants and loan guarantees for renewable energy systems	$0.8 million for woody biomass but due to a lack of available information, could be up to $10 million
	Biomass Crop Assistance Program (BCAP)	Payments to individuals and companies for producing, harvesting, collecting, and transporting crops or feedstocks that can be used in bioenergy or biofuels facilities	Two out of 11 approved project areas will grow trees for cellulosic ethanol production or other uses; project locations include New York and Oregon	Landowners in approved project areas will receive annual payments but it is unknown how much funding is allocated to each project or feedstock type
	Forest Biomass for Energy	Research and development funds to develop new fuel and energy sources from forest biomass	See description	Spending was never appropriated by Congress but could have been up to $15 million

				annually
	Community Wood Energy Program	Grants to develop community wood energy plans and purchase wood energy systems that use woody biomass for fuel	See description	Spending was never appropriated by Congress but could have been up to $5 million annually
Rural Development Title Programs	**Rural Utilities Service Loans**	Loans to provide or improve rural energy generation, transmission, or distribution, including rural energy projects such as "solar, wind, hydropower, biomass, or geothermal."[6]	Biomass facilities converting wood into biofuels, heat, or power receive loans to "acquire, construct, extend, upgrade, and otherwise improve energy generation facilities;" 2012 loans were awarded to facilities in CO, HA, and TX/LA.[7]	At least $264 million awarded to woody biomass facilities in 2012, but a total of $7 billion in loans were outstanding in FY2013[8]
	Rural Business Enterprise Grants (RBEG)	Loans for rural economic development projects benefiting small and emerging businesses.[9]	Funds to "assist… businesses that produce biomass feedstocks for energy products and specialty chemicals" and "collect data on… woody biomass, the viability of a biomass pyrolysis process and the market for biochar."[10]	$232,500 for woody biomass projects announced in August 2010 & July 2013, but due to lack of detail provided by USDA, total may be higher[11]
* Note: for more information on each of these programs, click on hyperlinks in the table. All programs in the table except for Rural Utilities Service (RUS) loans and Rural Business Enterprise Grants (RBEG) are funded through the farm bill energy title; rural development (RD) programs are funded through the RD title of the farm bill				

Other Federal Biomass Programs and Subsidies

Biomass subsidies are not only allocated through USDA programs, but also through the federal tax code and various DOE programs. A federal tax credit for open-loop biomass production is expected to cost taxpayers $2.2 billion over the next decade.[12] Various DOE biomass and bioenergy programs fund the Bioenergy Technologies Office's support of biorefineries, research and development of new types of biomass or conversion technologies, and various Congressionally-directed projects such as those supporting Iowa switchgrass, Indiana corn ethanol, Texas dairy waste conversion, and hybrid poplar tree research alongside the U. S. Forest Service.[13] The President, in his FY14 budget request, proposed additional spending on biomass and bioenergy programs: $141 million for conversion technology research and development, $78 million for integrated biorefineries (including a joint USDA/Navy initiative to develop advanced biofuels), $15 million for algae biomass productivity, $20 million for manufacturing research and development, and $20 million for high-impact new technologies. If enacted, the budget request totaling $282 million would exceed current FY12 bioenergy spending at DOE by $87 million.

Unintended Consequences

While early proponents attempted to sell biomass as an environmentally friendly renewable fuel source, data has shown that converting some types into biofuels or burning them for heat or power can have several negative impacts, leaving taxpayers shouldering costly liabilities. Converting wood and municipal solid waste into biofuels increases air pollutants like GHG emissions and particulate matter and causes associated negative health effects. Similarly, the National Research Council found that clearing land and tearing up native grasslands to grow biofuels crops can actually increase net carbon emissions if appropriate mitigation steps are not taken.[14] If one of the original goals of the biofuels and biomass industries was to reduce GHG emissions and reduce dependence on oil, then subsidizing biofuels and biomass will only send the U.S. in the wrong direction toward meeting these objectives.

Conclusion

It's time that the biomass industry stood on its own two feet without taxpayer support. With their numerous unintended consequences and failure to achieve stated goals, biomass subsidies scattered throughout the federal tax code, DOE, and the farm bill energy and rural development titles should be eliminated once and for all. Not only will several downstream costs and long-term liabilities be reduced, but taxpayers will bear less unnecessary risks and save billions of dollars.

For more information, contact Taxpayers for Common Sense at 202-546-8500.

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[1] http://www.fas.org/sgp/crs/misc/R40529.pdf
[2] http://www.nationalaglawcenter.org/assets/crs/RL34130.pdf
[3] http://www.fas.org/sgp/crs/misc/R40529.pdf
[4] http://www.fas.org/sgp/crs/misc/R40529.pdf
[5] http://webarchives.cdlib.org/sw1vh5dg3r/http://ers.usda.gov/FarmBill/2008/Titles/TitleIXEnergy.htm
[6] http://www.rurdev.usda.gov/SupportDocuments/RUS%20Electric%20pa1789.pdf
[7] http://www.rurdev.usda.gov/SupportDocuments/RUS%20Electric%20pa1789.pdf
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[10] http://www.rurdev.usda.gov/SupportDocuments/rdRBEGAwards2013.pdf
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[12] http://www.taxpayer.net/library/article/sliding-past-sequestration-2-trillion-in-common-sense-cuts-to-avoid-the-fis
[13] http://www1.eere.energy.gov/biomass/factsheets.html#congress
[14] http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=13105