

Subsidies Available for the Production of Biomass Fuels for a Rock-Tenn Facility

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Introduction

This report was prepared as part of The Green Institute's engagement by the St. Paul Port Authority to assist with biomass fuels assessment as part of a broader feasibility study of a biomass power plant at Rock-Tenn's St. Paul recycled paper mill. We considered only current government payments available for agricultural (corn stover and grasses) and forest sources of biomass production on private lands. Only subsidies prior to conversion of the biomass into energy were considered (i.e., subsidies for the production and harvesting of the biomass). Additional subsidies not considered here may be available for the conversion of biomass into energy. Here we use the word "subsidy" to refer to a wide variety of government actions that directly or indirectly reduce the cost of biomass production and harvesting.

Agricultural biomass

The federal government provides payments to farmers growing commodity crops. The main program is the Direct and Counter-Cyclical Payment Program (DCP), administered by the U.S. Department of Agriculture's Farm Service Agency (USDA-FSA).¹ This has two principal components, one tied to a farm's historic production record (direct payments) and the other tied to current market prices (counter-cyclical payments).

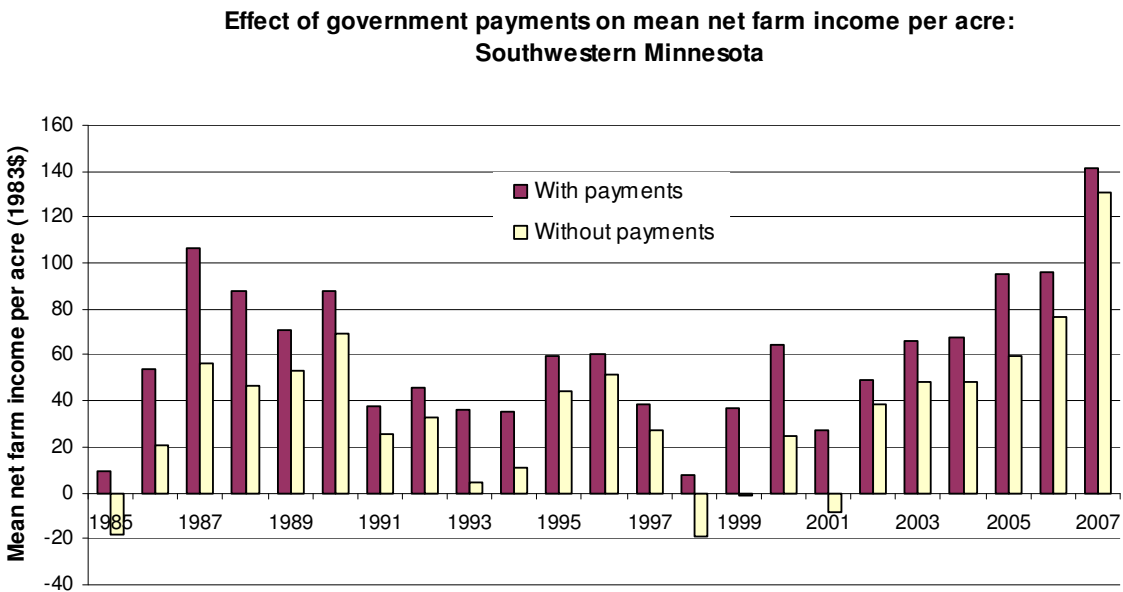
The Direct Payment program pays farmers a fixed price per bushel, whether or not the farmer actually grows the crop in any given year and whatever is the market price. The current (2008) payments are:

- corn = \$.28/bushel
- wheat = \$.52/bushel
- soybeans = \$.44/bushel

These payments are paid based on 85% of the farm's official historic acreage (the "base") times its official yield ("payment yield"). For example, an acre with 150 bushels/acre official payment yield for corn will receive \$35.70 (150 bushels x 85% x \$.28/bushel) each year the farm remains eligible for these payments. These would continue even if the land is converted to another crop. For comparison, the gross income per acre before subsidies (assuming a corn price of \$4/bushel) would be \$600. In some years, these payments can make a substantial difference in net farm income, as Figure 1 demonstrates. This has not been the case in the past few years, however.

¹ More information on the Direct and Counter-Cyclical Program is available at: www.fsa.usda.gov/Internet/FSA_File/dcp06.pdf

Figure 1: Effect of government payments on farm income



Source: Southwestern Minnesota Farm Business Management Association.
Prepared by Steven J. Taff, University of Minnesota

The Counter-Cyclical program makes up the difference, if any, between the market price and a higher official target price. The Counter-Cyclical program is comprised of two components; a payment and a loan. No payment is made if market prices (plus the direct payment) are above the target price. Current targets (2008) are corn at \$2.63, wheat at \$3.92, and soybeans at \$5.80. Current market prices greatly exceed these targets; consequently, no counter cyclical payments were made in 2007, and none are expected in 2008. The high market prices have the ancillary effect of reducing federal outlays for farm programs.

While there is no subsidy directly for corn stover, an argument might be made that subsidies for the corn grain can also benefit corn stover production. If subsidies for corn grain reduce the total cost of production for growing corn, producers might demand less money for corn stover than otherwise. Such an argument might be made if producers consider corn stover to be a co-product with corn grain and not a “waste”. There is no clear evidence that producers make such a determination; nor, if they did, is there any guidance on what proportion of the corn production costs should be allocated (on paper) to the corn stover portion of the process. One methodology would be to assign value based on relative market prices for the grain and the stover. At \$4/bushel for the corn grain, and \$50/ton farmer payment for the corn stover, a farmer growing 150-bushel corn would receive \$600/acre from the grain, and \$100/acre from the stover.² In other words, approximately 85% of farm income will be for the grain, and 15% will

² Assuming a corn stover harvest rate of 2.0 tons/acre with harvesting and transportation done by a third party; farmer payment is inclusive of nutrient replacement costs.

be for the stover. Grain subsidies might add an additional \$35/acre to this income. Allocating this on a value basis, the grain would be allocated \$30/acre of the federal subsidy payment, and the stover \$5/acre of the subsidy. Converting this to a per-ton basis, this is equivalent to a \$2.50/ton “indirect subsidy” for the stover. We refer to this as an indirect subsidy because it is a paper subsidy only: the actual federal payment is made strictly against the grain portion of the total corn crop.

There are numerous subsidies and favorable regulatory changes designed to encourage various types of agricultural production—beyond the direct farm payments noted above. For corn and soybeans, tax credits are available to blenders of ethanol and biodiesel, respectively. The current \$.51 per gallon ethanol credit—if it is passed through completely to producers—provides a roughly \$.18 per bushel incentive to farmers to grow corn. At present corn market prices, this is less than a 5% price enhancement.

The federal Conservation Reserve Program (CRP) and the state Reinvest in Minnesota (RIM) Reserve pay farmers to switch from annual cropping to some other, more permanent cover for a stated number of years. The land so “retired” is not, generally, permitted to be used for commercial purposes—including biomass feedstock harvest. There are two ways in which these protected lands might be used for fuels production. The government might change the rules to permit periodic harvesting on enrolled lands, or the land might be withdrawn from the programs.

Current USDA rules permit periodic (every several years) “managed haying and grazing” of most CRP lands, with a 25% reduction in that year’s federal CRP rental payment.³ This option effectively subsidizes the production of grasses by covering some of the operator’s costs. Agency officials estimate that 30,000 acres in Minnesota are so-harvested in a typical year.⁴ If an acre of CRP land yields 2 tons/acre of grass and normally receives \$60/acre/year (the Minnesota average) this would result in an effective subsidy of \$22.50/ton in the year that the option is exercised.⁵ Again, this is not specific to biomass harvest, but applies equally to, and the rule was written primarily for, grasses used for livestock feed.

Current USDA rules also permit land to be withdrawn from the CRP if the owner pays back all previous years’ payments with interest, plus all cost-shares, plus a penalty of 25% of one year’s payment. Thus the longer a field has been in the CRP, the higher the withdrawal penalty. There has been some discussion in Washington about the USDA relaxing the in-contract harvest rules or allowing more withdrawals for biomass—or, more probably, corn and wheat production—but there has been no change as of this writing. Some established grasslands

³ USDA Farm Services Agency, *Managed Haying and Grazing on Conservation Reserve Program (CRP) Acres (New Provisions)*, Washington, 2007.

⁴ Greg Anderson, USDA FSA, personal communication, 2008.

⁵ 75% of the normal CRP payment would be \$45 per acre, divided by two tons per acre.

under permanent RIM easements are eligible for reduced property taxes. If, for example, an acre of cropland has a pre-RIM market value of \$2,000, it might be valued after the easement is put in place at \$1,000. A typical acre of farmland in Minnesota has an effective tax rate of 1% of market value, so this acre's tax would drop from \$20/acre/year to \$10/acre/year.

The Minnesota RIM-Clean Energy program—initiated but not funded by the Legislature—would purchase easements on environmentally sensitive cropland if the producers convert their land to permanent vegetation dedicated as a biomass feedstock.⁶ Only a handful of eligible project areas are expected to be supported under this program, given expected financial resources.

The recently-signed Food, Conservation, and Energy Act of 2008 (the “Farm Bill”) contains numerous alternate energy provisions, but only one that might prove to be a significant source of federal money for biomass production: the Biomass Crop Assistance Program. Producers could receive up to 75% cost sharing “until the crop is established.” The money would go to a handful of eligible “projects” nationwide, each project being a combination of a new biomass fuel or energy facility and its contracted biomass suppliers.

Forestry sources

There is no federal subsidy program generally for woody biomass production. A variety of state and federal programs provide a modest level of technical assistance and cost sharing for forest management: none are directly aimed at increasing biomass feedstock supplies, although some established forest plantings are eligible for reduced property taxes.⁷

The US Forest Service will pay for “fuel load reduction” in some forested areas to remove debris and trees that constitute a fire hazard and impede desired forest production. Almost all of the projects are on public forest lands, although private lands are technically not excluded. These lands might be suitable procurement targets since the wood from them would presumably be less expensive because of the federal payments for harvest.⁸ Information is available at www.dnr.state.mn.us/firewise.

A state-funded program was established in 2007 to provide \$500,000 to restore wildlife habitat in certain forested areas in the Twin Cities area and ship the removed wood to District Energy for burning.⁹ An estimated 40-45 acres in total were restored.

⁶ “Reinvest in Minnesota – Clean Energy Program Guidelines and Standards, A Report to the Minnesota Legislature,” 2007 Minnesota Statutes 103F.518, submitted by the Board of Water and Soil Resources, January 23, 2008.

⁷ M. J. Baughman, Property Tax Guide for Forest Landowners, 2000. M. A. Kilgore, Minnesota's Sustainable Forest Incentive Act: A Landowner's Guide, 2002.

⁸ A recent study estimates the cost to the government of such harvests at \$575 per acre. Arnosti, D., D., Abbas, D. Current, and M. Demchik, *Harvesting Fuel: Cutting costs and Reducing Forest Fire Hazards Through Biomass Harvest*, Institute for Agriculture and Trade Policy, Minneapolis, June 2008.

⁹ “Linking Habitat Restoration to Bioenergy, Annual Report to the Legislature,” MN DNR, 2008.

Conclusions

1. There are currently no government payments to encourage the production of corn stover. If one makes the aggressive assumption that some of the subsidies to encourage the production of corn grain should be assigned to the stover, it could result in an equivalent subsidy of approximately \$2.50/ton.
2. There are currently no broadly applicable programs for direct subsidies for the production of grasses. A limited number of acres of grass production may receive partial CRP payments, but this is not limited to utilization as a biomass fuel.
3. There are currently no broadly applicable programs to provide payments for producing forest wood biomass. Limited programs exist to encourage forest thinning in fire hazard areas, but wood harvested under this program is also not limited to utilization as a biomass fuel.