



# Report to the Legislature

## Minnesota Bioincentive Program



**Kevin Hennessy**  
**Bioenergy Manager**  
625 Robert Street North  
Saint Paul, Minnesota 55155  
Phone: 651-201-6223

[www.mda.state.mn.us](http://www.mda.state.mn.us)

January 15, 2019

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Pursuant to Minnesota Statutes, section 3.197, the cost of preparing this report was approximately \$750.

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## Executive Summary

The Bioincentive Program was established by the Legislature during the 2015 session to encourage commercial-scale production of advanced biofuels, renewable chemicals, and biomass thermal energy through production incentive payments (Minnesota Statutes, sections 41A.16-41A-19).

Incentive payments are available for three types of production: advanced biofuels, renewable chemicals, and biomass thermal energy. Payment rates are established by statute. Also established by statute are criteria for minimum production levels, and standards for the sourcing of the biomass feedstock. A minimum of 80% of the biomass must be obtained (“sourced”) from Minnesota<sup>1</sup>, and there are standards for harvest of forestry and agricultural cellulosic (i.e., fibrous material, such as wood or plant stalks) biomass intended to protect natural resources and the environment.

Funding is from the Agricultural Growth, Research, and Innovation (AGRI) program appropriation. Current funding is \$1.5 million for each year of the biennium.

For each fiscal year, unspent funds are available for an additional year. The funds in the additional year are available for the AGRI program as a whole.

Expenditures in Fiscal Year 2018 (FY2018) were far lower than expected. We expected FY2018 claims of approximately \$1.5 million based on information from industry sources. However, because of production difficulties and delays experienced by the expected claimants, the FY2018 total of claims was \$114,980.

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<sup>1</sup> If production facilities are 50 miles or less from the state border, materials may be sourced within a 100-mile radius of Minnesota.

## Introduction

This report is submitted pursuant to the Laws of Minnesota 2015, Chapter 4, Article 2, Section 61:

By January 15 each year, the commissioner shall report on the incentive programs under sections 41A.16, 41A.17, and 41A.18 to the legislative committees with jurisdiction over environment and agriculture policy and finance. The report shall include information on production and incentive expenditures under the programs.

## Background

During the 2015 legislative session, the Legislature adopted statutory language (Minnesota Statutes, sections 41A.16-41A.19) and appropriated funds for incentive payments for the production of advanced biofuel, renewable chemicals, and biomass thermal energy. An eligible producer may receive payment per unit of production under the program. There are minimum production levels required for eligibility. A maximum amount is set that can be claimed in any one year. A producer may collect payments through the program for ten years. The program is scheduled to end in 2035.

## How the Program Works

The Bioincentive Program was established to encourage commercial-scale production of advanced biofuels, renewable chemicals, and biomass thermal energy through production incentive payments.

Production facilities must:

- begin producing biofuels, renewable chemicals, or biomass thermal energy before June 30, 2025,
- meet quarterly minimum production levels,
- use renewable biomass from agricultural or forestry sources, or the organic portion of solid waste,
- source 80 percent of renewable biomass from Minnesota<sup>2</sup>, and
- harvest agricultural and forestry cellulosic biomass (i.e., fibrous material, such as wood or plant stalks) in ways that do not harm natural resources or the environment.

Production facilities may receive payments for up to ten years on a first-come, first-served basis while funding lasts.

The following sections describe the incentive payment programs for the three types of production: advanced biofuels, renewable chemicals, and biomass thermal energy.

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<sup>2</sup> If production facilities are 50 miles or less from the state border, materials may be sourced within a 100-mile radius of Minnesota.

## Advanced Biofuel

Generally, advanced biofuel must meet the definition of the national Renewable Fuel Standard (RFS) Program. Biobutanol from cornstarch may be reimbursed through the Bioincentive Program without meeting RFS advanced biofuel requirements.

### Eligibility

Production must not have exceeded the equivalent of 23,750 MMBtu (millions of British Thermal Units or BTUs, a standard unit of measurement of heat energy) per quarter before July 1, 2015. Facilities must produce at least the equivalent of 23,750 MMBtu per quarter to enter the program and for each quarter for which a reimbursement claim is made.

### Payment Amounts and Limits

Producers of advanced biofuels are reimbursed at a rate of:

- \$2.1053 per the equivalent of MMBtu for production from cellulosic biomass, and
- \$1.053 per the equivalent of MMBtu for production from sugar or starch.

The following table shows BTUs converted to gallons for several examples of advanced biofuels.

*Table 1: Payments per gallon for several examples of advanced biofuels*

Fuel	Feedstock	Btu/gal	Payment/gallon
Butanol	Corn starch	99,837	\$0.11
Ethanol	Sugar beets	76,330	\$0.08
Ethanol	Corn kernel fiber	76,330	\$0.16

## Renewable Chemicals

Renewable chemicals are produced from agricultural biomass, forestry materials, or the organic portion of solid waste qualify for Bioincentive Program payments.

### Eligibility

Production must not have exceeded 750,000 pounds per quarter before January 1, 2015. Renewable chemicals produced through processes that were fully commercial before January 1, 2000 are not eligible. Facilities must produce at least 750,000 pounds per quarter to enter the program and for each quarter for which a reimbursement claim is made.

### Payment Amounts and Limits

Producers of renewable chemicals are reimbursed at a rate of:

- \$0.06 per pound made from cellulosic biomass, and
- \$0.03 per pound made from sugar, cellulosic sugar, or starch.

Production using agricultural cellulosic feedstock of perennial or cover-crop biomass is eligible for a 20% bonus payment for each pound of chemicals produced. Total payments for an eligible producer may not exceed the amount necessary for 99,999,999 pounds of production in a fiscal year.

## Biomass Thermal Energy

Thermal energy produced from biomass combustion, gasification, or aerobic digestion qualifies for Bioincentive Program payments.

## Eligibility

Production of biomass thermal energy that was in place before July 1, 2015 is not eligible. Facilities must produce at least 250 MMBtu per quarter to enter the program and for each quarter for which a reimbursement claim is made.

## Payment Amount and Limits

Producers of biomass thermal energy are reimbursed at a rate of \$5.00 per MMBtu of production. Facilities may blend cellulosic feedstock with other fuel, but only the percentage attributable to cellulosic material is eligible to receive payments. Production using agricultural cellulosic feedstock of perennial or cover-crop biomass is eligible for a 20% bonus payment for each MMBtu of biomass thermal energy produced. Total payments for an eligible producer may not exceed the amount necessary for 30,000 MMBtu of production in a fiscal year.

## Cellulosic Biomass Sourcing

The Bioincentive Program statute contains standards for the sourcing of the cellulosic biomass feedstock, meant to ensure that the harvest of cellulosic biomass for advanced biofuel, renewable chemical, or biomass thermal production does not harm natural resources or the environment. Separate standards exist for cellulosic biomass from forestry sources and from agricultural sources.

The standards for sourcing cellulosic biomass from forestry rely on certifications from several forestry-certifying organizations, or state biomass harvesting guidelines.

To receive incentive payments for production that uses agricultural cellulosic biomass as feedstock, an “agricultural cellulosic biomass sourcing plan” is required to be submitted to the Minnesota Department of Agriculture. The plan contains a detailed explanation of how the agricultural cellulosic biomass is to be produced in a way that will be protective of natural resources and the environment (soils, water quality, wildlife, etc.). A more stringent plan is required for Advanced Biofuels cellulosic biomass harvest than for Renewable Chemicals or Biomass Thermal.

## Funding

Funding for the Bioincentive Program is from the Agricultural Growth, Research, and Innovation (AGRI) program appropriation. Funds appropriated from AGRI for the Bioincentive Program are shown below:

Table 2: Bioincentive Program appropriations

Biennium	Year 1	Year 2
2016-2017	\$500,000	\$1,500,000
2018-2019	\$1,500,000	\$1,500,000

For both biennia, the appropriation language provides that unspent funds are available for an additional year (for example, the FY2018 appropriation is available until June 30, 2019), and that the balance remaining after the end of the fiscal year (e.g., June 30, 2018 in the case of FY2018) is available to the AGRI program as a whole in the following fiscal year (e.g., July 1 to June 30, 2019 in the case of the FY2018 appropriation).<sup>3</sup>

<sup>3</sup> For FY2017, however, the remaining balance of \$1.47 million was cancelled.

## Production and Incentive Expenditures

There have now been claims in three fiscal years of the Bioincentive Program. Details of reimbursements made to date are summarized in Table 3 by section.

Expenditures in FY2018 were far lower than expected. We expected FY2018 claims of approximately \$1.5 million based on information from industry sources. However, of the four facilities we expected to make claims, one experienced construction delays, two experienced problems meeting the quarterly production levels needed to qualify for the program, and a fourth facility, expected to make a claim as an advanced biofuel, experienced delays in receiving an EPA approval needed to be eligible for the program (approval of a fuel pathway).<sup>4</sup> As a result, the FY2018 total of claims was \$114,980.41. Details are shown in Table 3.

Table 3: Program reimbursement by section for FY2017-FY2018 and through quarter 1 of FY2019.

FY	Production Type	Amount of Claim (unit)	Units	Amount Claimed
17	Advanced Biofuel	0	MMBtu	\$0
17	Renewable Chemical	986,636	Pounds	\$29,599
17	Biomass Thermal	0	MMBtu	\$0
<b>FY17 Total</b>				<b>\$29,599</b>
18	Advanced Biofuel	0	MMBtu	\$0
18	Renewable Chemical	3,234,517	Pounds	\$97,036
18	Biomass Thermal	3,589	MMBtu	\$17,944
<b>FY18 Total</b>				<b>\$114,980</b>
19	Advanced Biofuel	0	MMBtu	\$0
19	Renewable Chemical	0	Pounds	\$0
19	Biomass Thermal	25,528	MMBtu	\$127,638
<b>FY19 Total through Quarter 1</b>				<b>\$127,638</b>

Maximum reimbursements that could be received through the program as outlined in the statute are listed in Table 4 (all collective producers per year) and Table 5 (individual producer per year). It should be noted that a 20% bonus payment is also available for renewable chemicals and the biomass thermal energy producers utilizing agricultural perennials and/or cover crops as feedstock.

<sup>4</sup> As mentioned above, generally, advanced biofuel must meet the definition of the national Renewable Fuel Standard (RFS) Program. To qualify under the RFS program, the EPA must determine that the fuel qualifies, which involves determination of greenhouse-gas reductions as compared to petroleum via fuel “pathways.”

Table 4: Maximum program reimbursements per year, for all facilities collectively, under Minnesota Statutes, sections 41A.16-41A.18.

Production Type	Max	Max Unit	Low Rate	High Rate	Compensation at Low Rate	Compensation at High Rate
Advanced Biofuel	17,100,000	MMBtu	\$1.053	\$2.1053	\$18,006,300	36,000,630
Renewable Chemical	599,999,999	Pounds	\$0.03	\$0.06	\$18,000,000	36,000,000
Biomass Thermal	150,000	MMBtu	\$5.00	\$5.00	\$750,000	750,000
<b>Totals</b>					<b>\$36,756,300</b>	<b>\$72,750,630</b>

Table 5: Maximum reimbursements per facility per year under Minnesota Statutes, sections 41A.16-41A.18.

Production Type	Max	Max Unit	Low Rate	High Rate	Compensation at Low Rate	Compensation at High Rate
Advanced Biofuel	2,850,000	MMBtu	\$1.053	\$2.1053	\$3,001,050	6,000,105
Renewable Chemical	99,999,999	Pounds	\$0.03	\$0.06	\$3,000,000	6,000,000
Biomass Thermal	30,000	MMBtu	\$5.00	\$5.00	\$150,000	150,000
<b>Totals</b>					<b>\$6,151,050</b>	<b>\$12,150,105</b>

## Projection of Production for Fiscal Year 2019

The Minnesota Department of Agriculture has contacted likely applicants for incentive payment reimbursements expected in the coming fiscal year. Expected claims come from four producers. The breakdown of their expected production and reimbursement amounts are listed in Table 6.

Table 6: Projections for claims in FY2019.

Production Type	Approximate Production Amounts	Approximate Reimbursement
Advanced Biofuel	450,000 MMBtu	\$950,000
Renewable Chemical	3,000,000 pounds	\$90,000
Biomass Thermal	46,000 MMBtu	\$230,000
<b>Total</b>		<b>\$1,270,000</b>